NEAR EAST UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

INNOVATION AND KNOWLEDGE MANAGEMENT PROGRAM

THE RELATIONSHIP BETWEEN DIFFUSION OF INNOVATION AND COMPETITIVE ADVANTAGE: THE CASE OF KOREK TELECOM

GORAN YOUSIF ISMAEL

MASTER'S THESIS

NICOSIA

2018

THE RELATIONSHIP BETWEEN DIFFUSION OF INNOVATION AND COMPETITIVE ADVANTAGE: THE CASE OF KOREK TELECOM

GORAN YOUSIF ISMAEL

NEAR EAST UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES

INNOVATION AND KNOWLEDGE MANAGEMENT PROGRAM

MASTER'S THESIS

THESIS SUPERVISOR

Prof. Dr. Mustafa Sağsan

NICOSIA

2018

ACCEPTANCE

We as the jury members certify the "The relationship between diffusion of innovation and competitive advantage: The case of Korek Telecom" prepared by Goran Yousif defended on 27th of November 2018 has been found satisfactory for the award of degree of Master.

JURY MEMBERS

Prof. Dr Mustafa SAĞSAN (Supervisor)

Near East University/ Department of Innovation and Knowledge Management

Assist. Prof. Dr. Ahmet ERTUGAN (Head of Jury)

Near East University/ Department of Marketing

Assist. Prof. Dr. Ayşe Gözde KOYUNCU

Near East University/ Department of Business Administration

Prof. Dr. Mustafa Sağsan

Graduate School of Social Sciences

Director

DECLARATION

I Goran Yousif, hereby declare that this dissertation entitled "The relationship between diffusion of innovation and competitive advantage: The case of Korek Telecom" has been prepared myself under the guidance and supervision of "**Prof. Dr. Mustafa Sağsan"** in partial fulfilment of The Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach any Law of Copyrights and has been tested for plagiarism and a copy of the result can be found in the Thesis.

- The full extent of my Thesis can be accessible from anywhere.
- My Thesis can only be accessible from the Near East University.
- My Thesis cannot be accessible for (2) two years. If I do not apply for extension at the end of this period, the full extent of my Thesis will be accessible from anywhere.

Date: 27th November 2018
Signature:
Name, Surname: Goran Yousif Ismael

DEDICATION

This study is dedicated to my parents and friends who have offered me with essential support and encouragement to see me through towards the accomplishment of this study.

ACKNOWLEGMENTS

I would like to express my sincere gratitude to my advisor Prof. Dr. Mustafa SAĞSAN for the continuous support of my master study and related research, for his endurance, inspiration, and immense knowledge. His supervision helped me in all the time of research and writing of this thesis. I could not have imagined having a better mentor for me.

I would also appreciate the efforts and love of my parents. I would thank them for trusting in me and making me who I am today. Lastly, my family altogether, my brothers and sister, without their support I would not be able to do well.

ABSTRACT

THE RELATIONSHIP BETWEEN DIFFUSION OF INNOVATION AND COMPETITIVE ADVANTAGE: THE CASE OF KOREK TELECOM

There is a lot of research that demonstrate the significance of innovation diffusion and knowledge transfer for better performance and sustainability. The relationship between diffusion of innovation and competitive advantage in the telecommunications industry. This was made possible through the use of primary data that was collected through the use of 100 questionnaires were that distributed to firms in the telecommunications industry. The obtained data was analysed through the use of regression analysis and the results showed that 66.2% of the changes in the firm's competitive advantage are explained by organisation innovation, marketing innovation, product innovation and process innovation. The results also showed that marketing, product and process innovation have positively significant correlation with competitive advantage. Oorganisation innovation was established to be having negatively significant correlation with competitive advantage. Conclusions were thus made that changes in diffusion of innovation has different implications on the telecommunications industry's competitive advantage. Recommendations were thus made that there is a greater need to promote the diffusion innovation in the telecommunications industry.

Keywords: Competitive advantage, diffusion innovation, marketing innovation, organisational innovation, process innovation and product innovation

ŐZ

INOVASYONUN YAYILMASI VE REKABET AVANTAJI ARASINDAKİ İLİŞKİ: KOREK TELEKOM'DAN VAKA ANALIZI

Telekomünikasyon endüstrisinde yenilikçilik ve rekabet avantajı arasındaki ilişki önemlidir, daha iyi performans ve sürdürülebilirlik için bilgi aktarımının ve inovasyon yayılımının önemini gösteren birçok araştırma vardır. Telekomünikasyon endüstrisindeki firmalara dağıtılan 100 tane anket kullanılarak toplanılan birincil verilerin kullanılmasıyla mümkün olmuştur ve elde edilen veriler regresyon analizi kullanılarak analiz edilmiş ve sonuçlar, firmanın rekabet avantajındaki değişikliklerin% 66.2'sinin organizasyon inovasyonu, pazarlama inovasyonu, ürün inovasyonu ve süreç inovasyonu ile açıklandığını gösterilmiştir. Sonuçlar ayrıca pazarlama, ürün ve süreç inovasyonunun rekabet avantajı ile pozitif yönde anlamlı bir ilişki olduğunu göstermiştir. Organizasyon inovasyonu rekabet üstünlüğü ile ilişkilendirildiğinde negatif etki gözlendi. Sonuç olarak, inovasyonun yayılmasındaki değişikliklerin telekomünikasyon endüstrisinin rekabet avantajı üzerinde farklı etkileri olduğu sonucuna varılmıştır. Bu nedenle telekomünikasyon endüstrisinde yayılma inovasyonunun teşvik edilmesine daha fazla ihtiyaç olduğu yönünde tavsiyelerde bulunulmuştur.

Anahtar Kelimeler: Rekabet üstünlüğü, yayılım inovasyonu, pazarlama inovasyonu, organizasyonel inovasy on, süreç inovasyonu ve ürün inovasyonu

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

CA: Competitive Advantage

ICT: Information and Communication Technology

MI: Marketing Innovation

OI: Organisation Innovation

PCI: Process Innovation

PRI: Product Innovation

SPSS: Statistical Package for Social Sciences

μ: Error Term

INTRODUCTION

Firm performance is one of the key issues still being debated nowadays in both the academic and professional world. This is because firm performance plays a huge role towards impacting other areas and elements such as survival, growth and development. It is however important to note that firm performance tends to vary between firms and industries and one of the industries which is experiencing significant changes in firm performance is the telecommunications industry. This can be evidenced from insights drawn from a study by Benito-Bilbao et al. (2015), which outlined that the telecommunications industry is one of the increasing competitive and evolving industry. As a result, a lot of firms under this industry have been compelled to innovate so as to survive and match the ever-changing consumer tastes and preferences (Al-Khouri, 2014).

With an increasing rate at which organisations are downsizing operations and some even closing operations, ideas have been suggested that one of the key strategies that rid organisations of such challenges is diffusion of innovation (Bozeman, 2000). Questions are however placed on how diffusion of innovation and knowledge transfer will be able to alter the performance of firms in the telecommunications industry. This follows ideas which suggest that the telecommunications industry is one of the fastest evolving industry and that telecommunications firms which do not match the required diffusion of innovation will suffer from a decline in performance (Gunday, et al., 2011).

The main objective of this study is to examine the interaction between diffusion of innovation and competitive advantage. The study will also seek to identify possible solutions that can be used to influence the effectiveness of diffusion of innovation towards improving the competitiveness of telecommunications firms. As a result, the study seeks to provide answers the following questions;

- How does the interaction between diffusion of innovation affect the competitiveness of firms in the telecommunications industry?

- What are the possible solutions that can be used to influence the effectiveness of diffusion of innovation towards improving the competitiveness of firms in the telecommunications industry?

The study is structured into four chapters and the first chapter provides a review of literature related to diffusion of innovation and how it influences the competitiveness of firms in the telecommunications industry. The second chapter provides details of the research methodology that was used to carry out this study while the third chapter looks at data analysis and presentation. The fourth chapter looks at conclusions and recommendations that can be made from the study as well as possible suggestions that can be made for improving future studies.

The study is important for academic reasons as it results in an increase in literature sources about diffusion of innovation, knowledge transfer and firm performance. It can be noted that through its ability to offer details about possible ways that can be used to improve the effectiveness of the interaction between diffusion of innovation and how it influences the competitiveness of firms in the telecommunications industry will result in the growth, development and expansion of the telecommunications industry leading to increased employment and economic growth levels.

CHAPTER 1

LITERATURE REVIEW

1.1 Diffusion of innovation

Rogers (1995), presented a theory on diffusion of innovation that outlines the fundamental idea of how, why and what the reasons for an innovation are to be adopted and embraced. The diffusion of innovation observes the four main reasons that contribute to the adoption of new technology by the society.

- Innovation
- Way of communication within a society
- Time
- Social system

Diffusion of innovation is defined as: “the process by the innovation is communicated through certain channels over time among the members of the social system” (Rogers, 2010, p. 59). The societies interact through certainly different mediums or channels and share/adopt new ideas, technologies that are further adopted and with the time these innovations are improved and from the existing ideas; a whole new range of products and technologies evolve. The diffusion of innovation rotates around the idea, product and practices that are perceived by an individual and later diffuse in to the members of the society (Shoemaker & Rogers, 1971). There are different cultures and societies in the world that have come across certainly different innovations and share distinguishing knowledge. The culture is a significant toll to study information technologies (Leidner & Kayworth, 2006). The successful use and the successful implementation of the information technology depend on its relationship to the culture where it is used and implemented. There are numerous innovations undergoing the modern world but it depends on the different actors to adopt an innovation (Wejnert, 2002). The adoption of new product depends on the social networking the extent to which the societies are socially connected and interconnected; the network of innovation is studied in depth for understanding the effect socialization for adopting and embracing new product or

technology. The information is interrelated and the diffusion process is influenced (Rong & Mei, 2013).

1.2 The Relationship between Innovation and Diffusion

There are various studies that outline the significance of the relationship between the innovation and its diffusion in the society that adopt them. The research highlights that the social media is one of the biggest channels through which the innovation and knowledge is spread in the society in a short time. The social media play a significant role in maximizing the information and allow the people to use and adopt the technological changes. The information is also accessed through academic and nonacademic sources by the members of the society in order to enhance their social system and their social status as well (Kempe, Kleinberg, & Tardos, 2003).

Similarly, the diffusion strategies are also very important for the society in order to adopt and embrace the innovation for the diffusion process. This is done of the collection of large textual data. The database has approximately 800,000 research papers that are helping the people to share the knowledge. There are around 2 million authors that are sharing their information which intensifying the network of innovation (Maede & Islam, 2006).

The adoption and diffusion of innovation is studied to have a significant impact on the society. The societies that are more open and adoptive to the information and technology are more likely to develop faster and experience rapid growth. The diffusion of innovation observed to raise the economic performance and promoting sustainable growth in the small and medium-sized enterprises (SMEs). The study also found that the enterprises that have scares resources are more likely to benefit from the diffusion process (Rosenbusch, Brinckmann, & Bausch, 2011). The diffusion of innovation is practiced in a wide range of industries; manufacturing and production including small and large business are benefiting from the diffusion of innovation. The sales and purchase are increased and the profitability of the forms has also significantly increased by reducing the cost and getting the competitive advantage (Premkumar, Ramamurthy,

& Nilakanta, 1994). Therefore, the spread of technology within a community depends on the channel through which the information is distributed and the time through which the new product and the technology are adopted within a social system plays an important role. The new products and the technological innovation diffusion depend on the innovation and the society.

1.3 The Process of Innovation Development

The societies experience an innovation or produce a new technology wen there exist a need for it. Historically, the innovations that have been experienced in the world are all because of the needs. When the people recognize a problem and identify it as a need; they innovate and the rest adopt it according to their needs and problems. The small and medium-sized industries are recognized as the promoters of business and financial activities in a country. Therefore, the technological innovation and the diffusion of innovation within these SMEs push the markets by attracting more consumers for a more developing society. This is studied in the north coast of Brazil and the research outlined that; the development of the innovation is directly in relation to the economic activity. The internal environment of the company and the external environment in which the firm is operating contribute to the development of innovation (Silva, Oliveira, & Moraes, 2016).

It is argued that there are a lot more benefits of innovation and the innovation diffusion that brings about competitive advantage, high growth, sustainable development and prosperity among the society. The significance of innovation is fundamental to the innovation development. When the new products and technologies are introduced to the society; the needs of the society expand and requires further innovations. This creates a room for further development which could be evidence from the push and pull factors in a market economy. When the technologies are improving innovation diffusion is guaranteed. They are directly linked to another (Woo & Magee, 2017).

Consequently, the delivery of service and the performance of the business have equally benefitting from the innovation diffusion through achievement of sustainable

development goals and progressing rapidly. The needs of the society and the problem identification have led to development of new technology that could help man overcome the existing challenges and prepare for the future challenges. The production sectors have been focusing on the research and development tools that are focused on improving the existing business environment and offering maximum solutions to the problems. Therefore, the R&D has elaborated on the models through which these needs could be addressed and are focused on the particular development of innovation for an enhanced capability to adopt new products and develop the innovation process further (Prajogo, 2016).

1.4 Models of Innovation Process

Innovation is an open process which has no limits, no boundaries and every one can be a part of innovation. The development process of an innovation consists of industrialized, marketable and, procedural operations. The innovation process is more of nonlinear in the modern approach because of the complexity in the model. Therefore, researchers have studied some patterns of innovation development through the models for understanding the evolution of innovation process (Tohidi & Jabbari, 2012).

- Science push model
- Market pull model
- Doubling model
- Integrated and SIN model
- Kline Rosenberg model

Science push model is a simple and linear model that was popular in 1950-1960. The model seeks to interpret innovation as a scientific research and product development. The science push model emphasized on the scientific research for development in the market and/society. Research and development were emphasized accordingly and the innovation of atomic bombs and other modern products was also progressive and it was widely acknowledged that the scientific research is fundamental to the innovation process and in production of new products and technology. The science was widely

recognized as the tool for the innovation process and its development as a push factor for innovation process (Kanagal, 2015).

Market pull model observed that the evolution of innovation is the result of market demand. The increasing market demand is the reason for the development of new technology and tools. Market pull model was also a linear model and operated on a simple principle of market demand. The investments in the Research and Development fields were fundamental to the organizations and most of the businesses aimed at improving R & D for the evolution of innovation to supply for the increasing market demand (Chen, 2006).

Doubling model was introduced because of the increasing dynamics and complexity of the market place. Science push and market pull models were inadequate to demonstrate the innovation process in order to address the operations and procedures of the development process of innovation. Therefore, doubling model was an integration of both Research and Development with market factors for defining the development process of innovation (Audretsch, 1995).

Integrated and Sin model observed that to analyze the development process of innovation on the organization level; the existing models are insufficient. Therefore, this model was based on integrated development strategy among the local and international organizations. The model focused on Research and Development as fundamental to innovation process but strong connections/bonding within local and among international organizations was also significant with institutional development. Networking and flexibility was also the focus of this model (Donaldson,1996).

Value chain model Klein Rosenberg identified by Tohidi & Jabbari (2012) is considered as the most appropriate and adequate model for analyzing the innovation development process. It has five fundamental principles that govern this model for analyzing the innovation development process:

- Identification of needs
- Designing plans for the production
- Testing the researched projects

- Creating/producing
- Delivery and promotion

The model identifies the potential needs of the market for which the plans are further designed and developed to address these needs and solve these problems. The designed plans or the proposed solutions are tested and research for production and the after the innovation of a new product/technology; the market is supplied for its demand and the product is further promoted through marketing which can then be adopted by any one according to need (Tohidi & Jabbari, 2012). The innovation process seeks to incorporate all the scientific and social aspects for its development. The social and technical needs lead to scientific and technical development of the products that are developed to overcome the challenge and address the need. Having said that, it is not possible for the modern society to name the process as linear and simple rather it is more complicated and dynamic because it is shaped through several ways and according to particular demands.

1.5 Innovation and the Role of New Technology

The innovation strategy of products and its impact on the performance of new technology is studied in China. The results revealed that the innovation performance is linked not only to the external environmental factors but also to the institutional factors (Li & Atuahene-Gima, 2001). Technology has influenced the individual life in many ways; it has not only made the human life easy but it has also helped to achieve high economic performance, social development and promoted the R & D process in many ways. Hence, the innovation and the role of new technology share a strong relation. The technological innovations around the world inspire human beings for further development of the innovation and expand the solutions for minimizing the supreme needs (Heydebreck, Klofsten, & Maier, 2000).

The new technology and innovation of products is the engine of economic growth and employment in the modern societies. For example, Germany is not very rich in raw material therefore it has high labor cost and high standards of manufacturing. They can

only be cost-effective by being consistent on developing innovation. Hence, innovation is the main tool for economic prosperity and employment for most countries that are poor in raw material (Kinkel, Lay, & Wengel, 2005).

According to the data retained from Manufacturing Performance Survey in 2003; the organizations that were engaged extensively in research and development experienced high employment growth which was above the average as compared to the companies that were involved less or poorly engaged in the Research and Development (Verspagen, 2005). The innovation and the economic growth has been extensively related to each other through the empirical studies and the research has also outlined that innovation is not only limited to the product technology but social, political and economic development is also augmented through the innovation and knowledge development (Verspagen, 2005). The modern societies are engaged in creating and developing new ideas and tools to overcome obstacle in development for which the world has integrated to a much extent and has become a social hub where every idea and information could be shared by clicking once and the information has become accessible to everyone. The innovation is crucial for the growth and survival (Audretsch, 1995). Therefore, highly innovative organizations are more likely to earn a huge turnover and their productions are more cost-effective which ensures their sustainability and achievement of future goals as well (Pianta & Vivarelli, 2003).

1.6 Innovation Management

The management of innovation is a necessary element to keep the processing of innovation alive. Therefore, the organizations develop the strategic planning for managing and promoting innovation. The organizations must recognize and built a response in the modern industrial concerns and the constantly changing market conditions. Burns and Stalker (1961) identified two significant approaches for organizations for innovation management:

1. The Mechanistic Approach identifies more stable industries that are highly hierarchical and do not characterized by rapid ongoing change. For these

companies, innovation management is not complex and is very precise (Burns & Stalker, 2011).

2. The Organic Approach is more of complex and rapidly changing industries. These industries have vertical interactions so need more concerned responses to innovation management (Burns & Stalker, 2011).

Tidd (2001) identified uncertainty and complexity that influence the management of innovation in an organization and also its structure. The organization is affected by ecological contingencies that further influence the process management. The performance of the firm through proper management of innovation process observed through Contingency theory highlighted that, although there is not one bet suitable organizational structure that can cope with all the emergencies or complexities; an optimal organizational structure that is compatible to the environmental contingencies can ensure high performance and management of innovation for a firm (Donaldson, 1996). Therefore, the correlation among structure, contingency ad performance is strong (Donaldson, 1999).

The management of innovation is seen as fundamental to the competitive economy and there is a considerable empirical research on the relationship between the management of innovation and competitive achievement (Porter & Ketels, 2003). The innovation capability of the organization also influences the management of innovation (Frenkel, Maital, & Grupp, 2000).

In comparison, the firms that focus on innovation and production of new products tend to ignore the adequate innovation process for input and output in a market in terms of finances, time and the number of products produces which is also adversely affecting the innovation management process. This is identified as a capacity to bring a change which can be enhanced through the adequate management of innovation process (Cohen & Levinthal, 2000).

1.6 Innovation and Entrepreneurship

The innovation and entrepreneurial activities are directly linked. Entrepreneurship is a popularly debated idea that is not very new. The modern societies are seeking to entrepreneurship for not only the economic gains but also the social and political development. The people with great ideas of innovation are provided a platform to develop these innovative ideas for the collective benefit. Innovation and knowledge sharing is the tool for development in the modern societies. The process of innovation requires the identification of the existing problems and their appropriate solutions that are long lasting and will seek to address the future problems of same type as well. The long-term, valued and demanding solutions are then used and continuously used by the individuals having the similar problem. This is the success of an organization that enhances the performance and promotes sustainable development.

Similarly, entrepreneurship is all about innovation. Innovation is the idea that is initially unique to the individual that generates it and then becomes part of everyday life and is open to everyone. The entrepreneurship in the developing countries can boost the economic performance of these countries and can help fight poverty and hunger. The issue of employment could be minimized and everyone can get a chance to earn without establishing huge business empires. The economic and income gaps among the population of developing and underdeveloped countries can be bridged and the standard of living can also be improved through promoting entrepreneurship. However, innovation and knowledge sharing within the business industry has open doors for international ventures and rapid growth.

1.7 Innovation and Organizational Performance

The idea of innovation and its relation to the organizational performance seeks on the newness of a product, service, technology and or system/policy (Damanpour 2001; Bowen, Rostami, & Steel, 2010). Innovation is related as positive to the past performance of an organization (Goodling, Goel, & Wiseman, 1996). The past performance of an organization is studied as positively affecting the innovation. The organizations that tend to have a positive relationship of performance and innovation

tend to adopt the innovation and follow effective behavior for adoption to sustain their performance (Bowen, Rostami, & Steel, 2010). Innovation is a fundamental tool for the competitiveness. The innovation is an essential component that can differentiate organizations and is entrenched in the organizational structure, organizational processes, and within its products and services. The survey conducted among 184 manufacturing firms in Turkey through the integrated innovation performance analysis revealed that the manufacturing industry in Turkey experienced positive relationship with increased performance and sustainable growth (Gunday, Ulusoy, Kilic, & Alpkan, 2011).

The business environment in comparison to the innovation process within the firms has changed significantly (Wind & Mahajan, 1997). The relationship between the inputs and outputs at the industrial scale are more prominent than those within the firms. Tidd (2001) presented two approaches to for measuring innovation for the firm performance. The first approach seeks to utilize indicators like expenditure of a firm on R & D, patents and number of new productions. The second approach focuses on survey tools of broader indicators like the sales and revenues with technical/ design personnel for 3-5 past years' data. In addition, a review of a study by Damanpour (1991) identified four main elements within the organizations that impact the management of innovation.

1.7.1 Type of organization

The type of organization plays an important role in the adoption of an innovation. Therefore, it is very important that how the organization will respond to the changes that are due to the external and internal environmental variations. The organizational behavior responds differently to the innovation and the type of industry or the sector of the organizational may also affect innovativeness (Guzzo, Jackson, & Katzell, 1987). There are different types of organizations; traditional, organic, mechanical and, mixed. Therefore, the type of an organization which is adopting the innovation is very important and it will definitely impact the process of innovation development and the way the new innovation is valued. In addition to these types of organization are: manufacturing, services, NGOs and the profit-making organizations.

The type of organization plays an important role on how the innovation is going to be fostered and how it will be adopted for further development. The outputs, inputs, outcomes and consumer effect are also a technical aspect to be observed for the process evolution for an organization. In an organization, there are different managerial demands and environmental circumstances affecting these managerial demands. It will also impact the decision-making process and the strategies for the innovation adoption and development. The role of the organization in the innovation is significant and cannot be denied while analyzing the strengths and weakness of the relationship between the organization and the innovation process (Darroch, 2005).

1.7.2 Stage of innovation adoption

The process of innovation passes through different stages and phases. There are different activities involved on different phases. These stages include the process for using and continuing the innovation successfully. This concept has also been prominent in the theory of diffusion of innovation. The diffusion of innovation is possible through successful use and continuity (Rogers, 2010). The innovation process also requires this and ultimately the performance of the organization also depends on its ability to be able to cope with the increasing demands of the problem identified for which the innovation was generated (Gilbert & Cordey-Hayes, 1996). The stage of innovation or the adoption is seen as starting from the identification of the problem to the creation of the solution, production of the idea and its use by the society (Gilbert & Cordey-Hayes, 1996). The more the innovation is structuralized, the more it will be propagating and the more it will be benefiting the organization in terms of the performance and the growth (Rogers, 2010).

1.7.3 Scope of innovation

The scope of innovation refers to the ability of the innovation to be adopted in a time given time. This can be measured to outline the innovativeness for analyzing the practical implementation of innovation in a society (Rogers, 2010). The capacity or the scope of the innovation to be adopted by the society refers to the whole idea of the adoption and development of innovation process. If the new product or technology is innovative enough to be adopted by more organizations and it feasible for the society;

chances are that the innovation will be valued and continue in a less time but if the scope of the innovation in terms of adoption and use is not much, it will not be able to propagate in the organization or society (Cohen & Lemley, 20011).

Furthermore, the scope of innovation could be different for different industries, for different sectors and for different organization. As discussed above, the type of organization and in the stage of adoption (Gilbert & Cordey-Hayes, 1996); it is very important to draw a relationship between the scope and type of industry for propagating. For example: Intel, Microsoft and Cisco are driving the industry innovation. These organizations are ideal to analyze the impact of innovativeness for the innovation management, innovation process and overall innovation development.

Adding to this, Gawer and Cusumano (2002) studied the scope of innovation among Intel, Microsoft and Cisco that belong to a same industry but how the impact of innovation is equally boosting the performance of these companies and the IT industry. These companies started from PCs but adopted innovation effectively and are leading the IT industry. The book also highlights some of the significant aspects of the innovation driven industries and performance of these companies are evident that the organizational growth is directly affected by the innovation scope, capability of the firm to adopt it (Gawer & Cusumano, 2002).

1.8 Type of Innovation

There have been many researches that outline that for analyzing the adoption behaviors of the firms; it is also important to analyze the type of innovation and Damanpour (1996) elaborated particularly on administrative and technical, product and process and radical and incremental.

1.8.1 Administrative and technical innovation

There is a significant difference between the administrative and technical innovation in terms of decision-making process and the activities that an organization follows in implementation of these innovations. The adoption behaviors also differ (Maede & Islam, 2006). The products, services and the production process are included in the

technical innovation. The product and process innovation are more technical and requires distinctive decision-making process and different activities on behalf of the organization. Therefore, the organizational behaviors for adopting this type of innovation may vary (Damanpour, 1996).

In comparison, technical innovation and administrative innovation require distinctive skills. It includes the organizational structure and how the administrative tasks are performed. The planning and how the basic activities of an organization will be conducted imply to the administrative innovation. The rate at which an organization is adopting the innovation varies with the stage of development of an organization. It means that the adoption of an innovation by an organization depend on the stage of development of that organization in the business level. However, the focus on product innovation and process management determines the competitive advantage a firm can have over others (Damanpour, 1996). Therefore, the innovation types also play a significant role in the adoption behavior and the performance of the firm focusing the innovation and production of new products and technology for the sustainability and development of financial goals.

1.8.1.1 Product innovation

Chaney, Devinney, and Winer (1992) identified that with the innovation of new products, the stock price performance of the firm is also enhanced. The study revealed that the firms that are focused on the innovation of new products are more likely to generate high performance and more revenues. Consequently, long-term investments in the product innovation boost the performance of the firms. Also, this ensures the long-term performance and sustainability of the firm. The relationship between innovation and firm performance revolves around the contrasting ideas: whether innovation is a tool for future performance or it has been driven from the previous innovations. This is important in studying the relationship between innovation and firm performance. There have been number of empirical studies that observed the relationship between innovation and firm performance that sometimes seeks positive, negative, significant and insignificant performance indicators in terms of innovation (Bowen, Rostami, & Steel, 2010). The data reveals that the innovation and its relation to the previous and

future organizational performance could be observed for positive, negative and non-significant correlation (Bowen, Rostami, & Steel, 2010; Lant & Milliken, 1992). The performance of the firm is linked to the innovation especially among the competitive industry where all organizations are competing for growth through innovation and knowledge. As a result, the following hypothesis can be formulated;

1.8.1.2 Process innovation

Process innovation relates to the way organizations invest in new plant and equipment (Moore, 2004). The main objective behind process innovation can be linked to the need to improve productivity in relation to reliability, quality and material utilization. But this does not limit the role played by process innovation. For instance, a study by Bowen, Rostami and Steel (2010), revealed that process innovation also provides the means by which firms can begin to produce or manufacture new products. The problem with process innovation is that some scholars consider its effectiveness to vary with the size of the firm. For instance, Maede and Islam (2006), argues that process innovation is more effective when adopted in small firms. This implies that process innovation might fail to offer the desired results. moreover, it becomes unclear as to whether process innovation will be able to play a greater role in the telecommunications industry. As a result, this study will therefore seek to determine if the following hypothesis will hold;

1.8.2 Other types of innovation

There are numerous types of innovation that can be observed to take place in an organisation. Geoffrey A. Moore (2004), established that there are so many types of innovations and these include Acquisition, organic, value-migration, integration, value-engineering, experiential, enhancement, line-extension, platform, application and disruptive innovation. All these types of innovation tend to vary with the category under which a service or product is classified as well as the context of the category life cycle. But it is important to note that the performance of the organisation changes with each type of innovation and the more the organisation innovates, the more its performance will improve. This can also be supported by insight drawn from a study by Maede and Islam (2006), which highlighted that there is a positive relationship that exists between innovation and organisational performance.

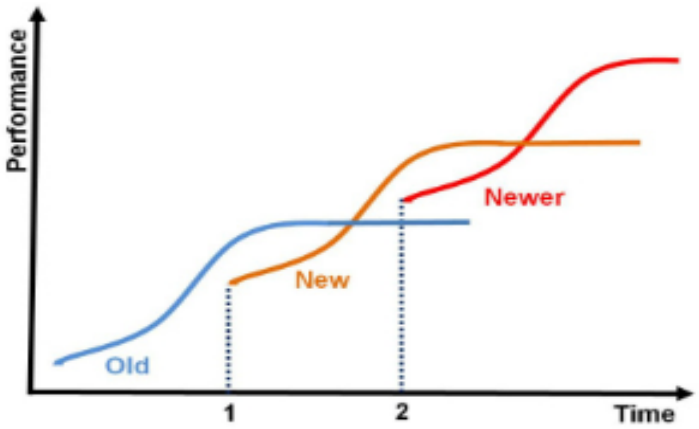

Figure 1.1: The relationship between innovation and firm performance

Source: https://innovation-management.org/types-of-innovation.html

Figure 1.1, denotes that organisation performances improves at each successive innovation adoption stage. However, it can also be seen that the initial adoption stage will be characterized by improvements to performance that is lower than the one contributed by the previous innovation. But all in all, the more and newer the innovation is, the greater the improvements in firm performance. The hypothesis can thus be listed as follows;

1.9 Effect of Innovation Type on the Performance of the Firms

There are different effects of different types of innovation on the performance of the firm. Innovation is not only seen as a production of new product or technology. But it refers to the new products and the new methods of production, different supply sources, new ways of organizing business and the new markets (Schumpeter, 1934). Innovation is also defined as the process that helps equipping with new and improved products and technology with enhanced capabilities and increased effectiveness (Drucker, 1985). Innovation can be classified into the product, process, marketing and organizational. The product and process innovation is related to the same idea of producing a new innovative product or service through the new and innovative process. The production of new product requires the use of new knowledge and new technologies. The production of new technology does not necessarily needs new knowledge and new

technology; it can be based on the innovative ideas of using and combining existing knowledge or technology. This may require the commitment of the firm for its consumers and the interaction between the suppliers for the firm.

In addition, the production of these innovative products through the innovative process is based on the idea that the new process must decrease the cost of production by increasing the efficiency and production. It is also revolving around the idea of not compromising on quality. This also refers to the new and improved methods of production that is equipped with new technology, new software/hardware and new techniques (Akova, Ulusoy, Payzın, & Kaylan, 1998). The advent and innovation of the new technology allow the firms to overcome the existing barriers to the economic outcomes and financial benefits that otherwise a firm could enjoy. Therefore, innovation and new knowledge is a key to the high performance. The firms have been evolving from the adoption of new technology for ecological growth.

The innovation can impact the performance of the firm in four different dimensions: innovative performance, production performance, market performance and financial performance (Barringer & Bluedorn, 1999; Hagedoorn & Cloodt, 2003; Yilmaz, Alpkan, & Ergun, 2005). Consequently, there is a huge literature supporting the positive relationship that outlines with increased innovativeness; there is an increase in the corporate performance; improving the market position of a firm and gaining competitive advantage (Santos & Peffers, 1995; McGrath, Tsai, Venkataraman, & MacMillan, 1996; Hult & Ketchen, 2001). The firms that seek on the technological innovation are more likely to win the competitive advantage over other firms. The improved technological innovation is a key to the advantage of the firm in the market. Organizational and market innovations are less likely to be debated on but they play a significant role in the performance of the organization through the innovativeness.

1.10 Knowledge transfer

Knowledge transfer refers to the sharing of knowledge, exchange of knowledge, interfacing of knowledge and the flow of the knowledge from one place to another (Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015). Knowledge sharing is prominent in the field of business and economics. Knowledge transfer is also essential for the

economic growth as that of the innovation and technology. The world has integrated and the global businesses are seeking for the competitive advantage where every business is focusing on the growth and sustainability of the business. The firms are generating and promoting the transfer of knowledge and innovation to develop and grow in the industry they are operating. The knowledge transfer is also important component for the performance of the firm. The impact of the knowledge transfer is huge and the organizations that are focused on producing more knowledge and are sharing the knowledge through knowledge interfacing and the knowledge flow. But knowledge transfer is a complex phenomenon that is not very simple and easy to accomplish (Bozeman, 2000).

1.11 The Transfer of Knowledge

There have been many studies that reveal the significant relation between the transfer of knowledge, innovativeness and the competitiveness (Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015). The transfer of the knowledge within and among the organizations gives them a competitive advantage and also allows these firms to expand beyond the borders. The international expansion allows these firms to share modern technology and techniques that are significant for expansion and allow them to expand their profit and achieve their strategic goals. However, knowledge management is also very important (Grant, 2002).

The adequate management of knowledge and the appropriate transfer of information allow the firms to perform better and find ways of developing more rapidly. The local and international organizations when work in collaboration can also make new ventures that would be beneficent for the local and the international organizations together (Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015).

The transfer of knowledge within an organization is also very important. This would not only help the firm to develop within the local market but also it will allow the organization to be more competitive. The firms that are focused on management of innovation and transfer adequate knowledge among their employees are more likely to perform better than those that are not focused and that are not among the actual performers (Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015). The firms to develop with sustainability

must be skilled to manage and transfer the innovation and knowledge in a way that they could use the existing products for innovation and try developing new ideas from existing knowledge (Bozeman, 2000).

Employees, management of knowledge and the organization can work collaboratively in a motivating and open environment to develop new ideas and technology by not maximizing the cost and without specifically the new technology. The existing products can be used innovatively to produce the new products that are even innovative (Bozeman, 2000; Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015). Similarly, the existing knowledge could be taken as a base to produce new knowledge. The new knowledge would be more refined and more useful. Also, it will help the employees, stakeholders and, the organization to yield more economic benefits and earn a competitive advantage in the market. The international organizations like the Intel, Microsoft, Cisco and other prominent leaders in the IT industry are operating on the similar principle and their performance is evident. In order to perform smartly and efficiently, the management of knowledge and innovation is very important and the management of knowledge and innovation can lead to the sustainable development among and within the firm.

The internal and external knowledge can be reformed to the competences with the help of adequate policies and processes of knowledge management (Spencer, 2003). These competences can be utilized for the success of the business (Dyer and Nobeoka, 2000). The management of the knowledge can consequently contribute to the innovation process and with the adequate management of knowledge; firms can also enhance their existing status in the local market and also in the international market. It is argued that the knowledge and innovation management is having a direct positive impact over the business competitiveness and the business success (Dyer and Nobeoka, 2000).

It is studied that companies can achieve a unique improvement in the business and financial benefits through the adequate management of knowledge and innovation (Hoopes and Postrel, 1999). Knowledge could be utilized as a strategic asset for the firm and it depends on the firm how it is using this strategic asset for the steady

development and sustainability with consistent progress (Bozeman, 2000; Burns & Stalker, 2011; Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015).

1.12 Knowledge Transfer and the Firm Competitiveness

Consequently, the knowledge transfer in a firm has been evident for the growth and progress (Bozeman, 2000; BarbaraWejnert, 2002; Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015).The transfer of knowledge and innovation can lead to the international opportunities that can widen the scope of the organization and allow the firm to penetrate into the international arena. The firms that are consistent on using and producing new knowledge and innovation are more likely to sustain in the local and international market. The international and successful organizations are an example for the new and developing firms. The management of knowledge and innovation is not hidden as well (BarbaraWejnert, 2002; Benito-Bilbao, Sánchez-Fuente, & Otegi-Olaso, 2015).

A study conducted by including the sample of 167 companies outlined that the inter-organizational knowledge transfers and the high performance is closely related. It depends on the ability of the firm to acquire and transfer knowledge as well in order to enhance the performance and promote development within and outside the organization. Also, the capacity of the firm to create knowledge is very important (Nonaka, 1994). The integration and the adequate use of this knowledge is also vital for the performance and sustainability of the firm (Grant, 1996).

The transfer of the knowledge within an organization and the ability of the firm to transfer knowledge is also fundamental to the firm leadership (Kogut and Zander, 1995). Therefore, there are many factors that promote the creation of new knowledge and the knowledge transfer within an organization that promote the growth and sustainability of the firm. There are many studies that outline not only the process of the knowledge transfer but also the factors or the elements that augment this process of the knowledge transfer (Kogut and Zander, 1995; Zack & Street, 2007; Hutzschenreuter & Horstkotte, 2010). The transfer of the knowledge with authentic and consistent process and their

adoption and inhabitant play an important role in the success of the business and the development of the firms locally and internationally (Kogut and Zander, 1995; Fernandes, Morales, Montes, Molina, & Moreno, 2006; Hutzschenreuter & Horstkotte, 2010; Palacios-Marques, Peris-Ortiz, & Merigo, 2013).

The transfer of the knowledge within and among the firms promotes the organizational knowledge within and among the firms. The organizational knowledge is the base for the performance and the long-term success of the organization. So, keeping in mind the significance of the knowledge and the transfer of the knowledge; it is important for the firm to generate the knowledge through the tacit knowledge of the individuals for the organization. This can be effectively done through the strong and enhanced networking. As the global business are integrated and connected. There are many huge organizations that are working in collaboration with the SMEs and the transnational firms; the transfer of knowledge plays a significance role for the partner company from the center company (Hutzschenreuter & Horstkotte, 2010).

Despite the significance of knowledge, there is a contrasting view that the transfer of knowledge is only useful when it is following to the right direction and to the right other half as in case of the firms (Teece, 2000). The integration and the inter-organizational knowledge transfer is of much significance than that of the independent knowledge management that benefits few individuals in a firm rather than a firm collectively (Hutzschenreuter & Horstkotte, 2010). Also, the way of communicating this knowledge to the partner is significant (Hutzschenreuter & Horstkotte, 2010). The right skills for the integration and the right technology for the transfer of knowledge is very important (Fernandes, Morales, Montes, Molina, & Moreno, 2006; Zack & Street, 2007; Hutzschenreuter & Horstkotte, 2010).

The transfer of the knowledge of all types is important; the individuals in an organization are a huge source for the generation of knowledge and innovation management. The firms in the modern societies are focused on increasing the financial and economic turnovers through capital and resources rather than tactical use of the existing knowledge and the generation of organizational knowledge through the tacit knowledge of the individuals and stakeholders that are part of the organization. The individuals and

their tacit knowledge are to be valued as a rich resource by the organization to perform better and grow rapidly (Hansen *et al.,* 1999; Fernandes, Morales, Montes, Molina, & Moreno, 2006; Palacios-Marques, Peris-Ortiz, & Merigo, 2013; Al-Khouri, 2014).

1.13 The Effects of Knowledge Transfer

The impact of knowledge transfer is evident through many empirical studies. The global business and the knowledge intensive industries are generating knowledge for innovation and development of the people and they are focused on exploring the unknown. Therefore, this is done through competitive management of the existing knowledge for generating the future knowledge. The effect of knowledge transfer over the societies and the organizations is huge and the societies and the organizations have been benefiting from this management of the knowledge in infinite ways (Palacios-Marques, Peris-Ortiz, & Merigo, 2013).

Similarly, the effective use of effective knowledge yields effective and significant results. The effective management of implicit and explicit knowledge is very important as well. There are studies that outline that the performance and the benefits are derived from a specific type of knowledge; implicit or explicit (Argyris, 1999; Shamsie & Mannor, 2013). Therefore, management of both type of knowledge is important for the effective use of implicit and explicit knowledge (Youndt, Subramaniam & Snell, 2004). There are different types of knowledge that require different knowledge management techniques; it is on the behalf of the organization that how it manages, generates and process the type of knowledge for the maximum utility

The implicit and the explicit knowledge are the useful resources for the performance and development of the firm. The case of Emirates identity authority is a good example of how the implicit and explicit knowledge can be used for the development and sustainability of the firm (Palacios-Marques, Peris-Ortiz, & Merigo, 2013; Al-Khouri, 2014). The effect of knowledge management could also be vital in earning a potential advantage for the firm (Kogut and Zander, 1992; Coff et al., 2006). The management of knowledge for innovation is also prominent and evident in many studies. The effect of

knowledge management is playing an important role in the modern business and the industries. They are succeeding by implementing, creating and processing the implicit and explicit knowledge successfully for the development and sustainability (Fernandes, Morales, Montes, Molina, & Moreno, 2006; Palacios-Marques, Peris-Ortiz, & Merigo, 2013).

1.14 Approaches to Knowledge Management

The knowledge management is fundamental to the knowledge transfer. The management of knowledge is equally important to that of the innovation. The knowledge management is necessary to preserve generate and develop more knowledge. There can be different approaches to knowledge management: implicit approach and explicit approach (Sanchez, 2005). The implicit knowledge management approach seeks to identify and transfer the knowledge that the individuals working in an organization have and try to move these people to transfer and generate more knowledge. In comparison to this approach, the explicit knowledge is aimed at promoting the processes for transferring the knowledge that the individuals in a firm have (Sanchez, 2005). The development and transfer of the knowledge requires a systematic process and the articulation of this knowledge must also be organized within an organization for the growth and sustainability (Smith, 2000).

Furthermore, the approaches to knowledge management differ in their nature because of their identification and management techniques for the knowledge transfer. Therefore, they require different practices for their management and transfer. Each approach has its own strength and weaknesses and it depends on the organization that how the knowledge is managed and transfer for growth and sustainability (Goffee & Jones, 2000). There are many studies that suggest the effective management of knowledge through focusing not only on one approach but also utilizing tacit and explicit knowledge management approaches together (Sanchez, 2003).

The tacit and explicit knowledge also play a significant role in the workplace. The knowledge has historically been transferred from one individual to another and the

society has evolved from the historical knowledge and is still evolving. This is a continuous process however managing this process adequately can be more efficient and effective for the organization in yielding high profit and growth (Hansen *et al.,* 1999). Since the evolution of mankind; growing through labor, material and capital is considered as significant for the growth and development but the knowledge and its management is given a least significance when aimed at promoting growth and sustainability for the organization or the business (Sanchez, 2003).

However, it is researched that the human knowledge, intellectual, and inspirations can be turned into a useful asset and or a tool for enhancing the growth and performance for a firm (Goffee & Jones, 2000). The existence of explicit and implicit knowledge can reduce the cost, work load and can affect the employee performance as well. The employees that are not much familiar with an idea of working efficiently in a less time may lack tactics to work efficiently that is a form of explicit knowledge (Smith, 2000). But with an adequate transfer of explicit knowledge; all the workforce can work efficiently and effectively by sharing the techniques an skills with one another that would benefit the organization and the workforce altogether. Therefore, generating/creating, sharing and transferring the explicit knowledge can improve the performance of the employees and it can also boost the growth of an organization when the employees are working well (Smith, 2000).

The organizations that value the human as a worthy resource and consider the knowledge as an effective asset are more likely to generate more knowledge, innovative techniques, experience growth and the process will continue to enhance the use of the knowledge, utilize the resources in a better and useful way, retain more creative and inspirational people and are applying this knowledge effectively are sustained to experience high growth and performance. The efficient combination of tacit and explicit knowledge can do wonders for the firm and can significantly promote its growth. There are many studies that outline the efficiency of tacit and explicit knowledge for the growth and approximately 90 % knowledge is entrenched within the minds of the people which is the tacit knowledge that is yet to be transferred and utilized (Bonner, 2000; Lee, 2000).

The management and the transfer of the knowledge within and among the organizations play a vital role in winning the competitive advantage for the organizations and it is claimed that tacit knowledge is enhancing the overall quality of the knowledge (Goffee and Jones, 2000). It is also important for the performance and the stability of the firm that aimed at transferring and managing the knowledge that what the workforce already know and what do they want to know. This will also help the organization to develop further with high growth. The knowledge will flow better when the employees will be able to capture and apply the knowledge that they already have in minds and implementing that would be intrinsically encouraged for high stability (O'Dell & Grayson, 1998).

1.15 Knowledge Transfer, Entrepreneurship and Economic Growth

The transfer of knowledge, entrepreneurship and the economic growth are interlinked. There are many studies that provide the evidence for the relationship between the transfer of knowledge, entrepreneurship and the economic growth. It has also been linked to the high productivity and sustainability (Hughes, 2003). The case of Netherlands outline that how the use of the knowledge, entrepreneurship and the transfer of knowledge lead to the high technology ventures and devoted to the high productivity and the economic growth of the industry (Hughes, 2003). There are many existing studies on the transfer of type knowledge and the innovation for achieving more sustainable and high technology ventures. The developing countries are continuously working over this concept and are managing the innovation and knowledge in a way to promote growth and sustainability. The existing products add technology can be effectively utilized to generate more economic benefits and add value to the existing products.

The entrepreneurial activities are aimed at promoting the innovation and knowledge to achieve high productivity and growth. The idea of entrepreneurship has gained high reputation and almost all institutes and industries are promoting it. The adequate management of knowledge through the entrepreneurship for economic growth and development is very important (Caree et al., 2002). The firms in the Netherlands experienced significant difference in the economic growth with the entrepreneurial

activities (Hughes, 2003). In a program conducted by OECD in 2003 named comparative international research outlined that, entrepreneurial activities are significant for the high productivity and the economic growth.

Entrepreneurship for economic growth is experienced and practically the countries like the Britain which are also promoting the entrepreneurial ideas are developing more innovation and transferring more knowledge. The countries that are familiar with the significance of the entrepreneurship have formalized the system to promote the innovative ideas that can utilize the existing products and services for generating double profit and growth. The economic benefits will definitely increase the standards of living and will eliminate the poverty and unemployment (Caree et al., 2002).

Tacit knowledge can be a source of individual growth and the economic growth as a whole. Every individual has most of the tacit knowledge that they have not ever shared and for this reason they have not been able to grow and also help others to benefit from their tacit knowledge. According to Wah (1999), 99% of the work that the individuals do in their life is based on the knowledge that these individuals have. The companies like IBM and Xerox Corporations are excellent examples for transforming knowledge from information by maintaining the databases that later can be accessed and shared by a huge number of people to generate more knowledge and transform the existing information into a useful piece of knowledge. This maintenance of databases and from information to knowledge has reduced the proposal writing time of the employees from 200 hours to 30 hours (Smith, 2001).

Thus, the entrepreneurship which is all about the tacit knowledge and individual ideas can be collaborated for the economic growth. Entrepreneurship is an appropriate tool for the development of tacit knowledge that cab be transferred from one individual to another and in this way all the people and or employees can benefit from it. But there are few organizations that are able to manage the tacit and explicit knowledge in an effective and efficient way (Bonner, 2000; Smith, 2001). The organizations that are aimed at managing the tacit and explicit knowledge through promoting the

entrepreneurial ideas and talent are more likely to emerge as a leader of the industry and grow more rapidly (Smith, 20001). However, it is also argued that tacit knowledge is more difficult to be made explicit (Zack & Street, 2007).

The firms can equally benefit by making their tacit knowledge as explicit knowledge to increase the strategic value of the knowledge generated and to enable more and more individual to serve by sharing and transforming their tacit knowledge into the explicit knowledge (Smith, 2001; Zack & Street, 2007). The collection of the knowledge in the form of databases is also an effective tool for the diffusion of knowledge (Lee and Choi, 2003).

It is also suggested that the firms can succeed by generating the organizational knowledge which is a more powerful and hard to replicate knowledge that the firms must create from the individual's tacit knowledge working in a firm (Palacios-Marques, Peris-Ortiz, & Merigo, 2013). It is also claimed that the information and communication technologies (ICT) can be the most suitable and feasible source for the databases that is to generate knowledge from information and the organizational knowledge can be strengthen and transferred adequately firm the tacit knowledge of the individuals working in an organization (Palacios-Marques, Peris-Ortiz, & Merigo, 2013). The information and communication technologies (ICT) have a huge impact on the society and upon the organizations. The information and communication technologies are capable of bridging the communication barriers that can promote the transfer of knowledge especially the tacit knowledge and help firm build on the organizational knowledge (Zack & Street, 2007; Palacios-Marques, Peris-Ortiz, & Merigo, 2013).

The entrepreneurial activities promote the transfer and sharing of tacit knowledge also it promotes the creation of more tacit knowledge. The entrepreneurial activities bring about the social and economic changes and reform the social system in a way that the less resource rich and financially poor countries cam take a step further and take a part in the development process (Hughes, 2003; Palacios-Marques, Peris-Ortiz, & Merigo, 2013). In the same way, the slow and ineffective firms can also generate more effective and efficient ideas for generating high growth and sustainability. Lee and Choi (2003)

suggested that that the new knowledge can be generated by the help of effective information and communication technologies (ICT).

The practical and operative performance of the firms is also dependent on the creation of the new knowledge which can be done through the effective and efficient use of the ICT (Ravichandran & Lertwongsatien, 2005). ICT is evident for performance and productivity. ICT also enables firms to generate more knowledge collection and exchange with storage of huge information that could be used as knowledge in the future (Lee & Choi, 2003; Hughes, 2003; Gururajan and Fink, 2010; Palacios-Marques, Peris-Ortiz, & Merigo, 2013).

1.15.1 Marketing Innovation

In comparison, the organizational and market innovation are less debated but play a vital role. There are studies that outline that the firms are more likely to pay attention to innovation management like the management techniques rather than the marketing innovation and the organizational innovation. Therefore, they can also be a significant indicator of high-performance enhanced sustainability of the firm (Baldwin & Johnson, 1996; Ravichandran, 2000; Hult & Ketchen, 2001). Despite of this, the organizational innovation as compared to technological innovations are more prominent in increasing the performance of a firm. The marketing innovations can significantly increase the product sales and increase the customer loyalty. It can also increase the consumption of the product to yield more profit for the firm (Oke, 2007).

The modern firms are focusing on the technological and product innovation that can earn them huge profits and this is also true; the product innovativeness and the new technology is essential for the organizational growth but the long-term and the sustainable growth of the firm is possible with the combination of the product, technology, organization and marketing innovation strategies. The studies conducted on the Chinese and British firms revealed the product and process innovation are closely linked for the performance of the firm. The researches revealed that the firms focusing on the development of formal processes and are focused on serving the customers better are more likely to have higher level of performance (li, Liu, & Ren, 2007; Oke, 2007).

The most effective and efficient way of sustaining growth and stability in the performance; a firm must be able to upgrade the facilities and activities that are products and services through innovation (Drew, 1997). The innovation and its impact on the firm performance are significantly observed through various studies. There are number of studies that outline the need for the innovation in different forms to grow and maintain high performance. The organizations that are technology focused; telecommunication industry, IT industry, service industry and the other technological producers are constantly doing efforts to sustain their performance by producing new and innovative products with new and innovative processes. Therefore, the competitive advantage the firms are experiencing is a result of product and process innovation. The organizations are expected to experience more growth and enhanced performance through innovating the structure and organizational behavior. The marketing innovation is rarely addressed as significant in increasing the performance of the firms; but there exists a string relationship between the innovative ideas for marketing the new product for increasing the consumption that is because of the changing consumer behavior and it is working for many multinational firms (Chen, 2006; Naidoo, 2010).

However, it is also observed that the effects or the outcomes of the marketing innovation are different as compared to those of the product and process innovation. The marketing innovation brings about the knowledge in understanding the consumer behavior for the development of more cost-effective strategies and productions could also be managed. It can also play an important role in benefiting the consumer of the particular product that the firm is specializing in. the marketing innovation has been studied for yielding sustainable competitive advantage (Ilić, Ostojić, & Damnjanović, 2014; Kanagal, 2015). Thus, it complies that the innovation itself has certainly different directions/dimensions and the organizations also have distinctive structure, processes and behavior for these distinctive innovations. For the successful and positive relation between the innovation and the organizational success sand performance; the adequate follow up with the changing needs and requirements in terms of innovation adoption and implementation is really important and can be deduced as the fundamental for firm performance and growth (Shapiro, 2006; Maciariello, 2009). Thus, the following hypothesis will be formulated;

1.15.2 Organizational Innovation

Among other types of innovation, organizational innovation holds a great significance for the firm performance. The organizational innovation contributes to the technological innovation and the firms that focus on promoting the organizational innovation are more likely to succeed in other types of innovation rather than the firms that only focus on the technology and tools. Marketing innovation and the ability of the firm to transfer the knowledge and develop the process of innovation diffusion play a significant role in the overall firm performance. For this reason, it focuses on values, capacity of learning, interests and power in shaping organizational transformation and technological change. In a general sense, the term 'organizational innovation' refers to the creation or adoption of an idea or behavior new to the organization (Damanpour, 1996). They emphasize the cognitive foundations of organizational innovation which is seen to relate to the learning and organizational knowledge creation process that focus on the patterns of learning and knowledge creation, engendering different types of innovative capabilities Child, 1997).

The relationship between organization and innovation is complex, dynamic and multilevel. The existing literature is voluminous and diverse (Lam, 2004). This is partly due to the great conceptual ambiguity and confusion surrounding the term 'organizational innovation. There is lack of existing literature that could clearly define and elaborate on the term organizational innovation however it is widely debated and there are studies to highlight the significance of the organizational innovation for the firm performance (Damanpour, 1996; Lam, 2004).

Marketing and organizational innovation is a substantial factor that drives the firm performance. There are many businesses that are competing for the growth and service deliver. However, only few are growing rapidly and efficiently developing in the competition due to the innovativeness and strategic planning. The firm to attain high performance has to have the internal and external sustainability that comes from the organizational behaviors, strategy and the customers and market. The distinctive allocation of the funds and the resources are also responsible for effective deliver of service to achieve high customer performance and the sustainability of the firm

(McWilliams & Siegel, 2000). Environmental innovation is also studied empirically as a driver of social innovation that can positively promote the growth and performance of the firm (Salvadó, de Castro, López, & Verde (2012). The environment within which the firms are operating is constantly changing and innovation in that perspective plays a significant role for a firm to get the competitive advantage (Atalaya, Anafarta, & Sarvan, 2013).

Adapting innovation could be risky for a firm but risks can take the performance of the firm to sustainable heights of success (Lumpkin & Dess, 1996). However, identifying the accurate problem and analyzing in depth would enable them to design best and most suitable solution. It is also essential for the firm to achieve high performance through social innovation by focusing on a limited number of markets and expanding their efficiency of product and service (Mavondo, 2000). The performance of the firm includes several determinants that enable the organization to measure their performance in relation to the adopted innovation and strategies. This study therefore seeks to determine if the following hypothesis will hold;

1.16 Conceptual Framework/ Research Model

From the previous research; it is observed that the performance of the firm depends on the marketing innovation and organizational innovation influences the firm performance through diffusion of innovation. This can be illustrated using the following conceptual framework depicted in figure 1.2.

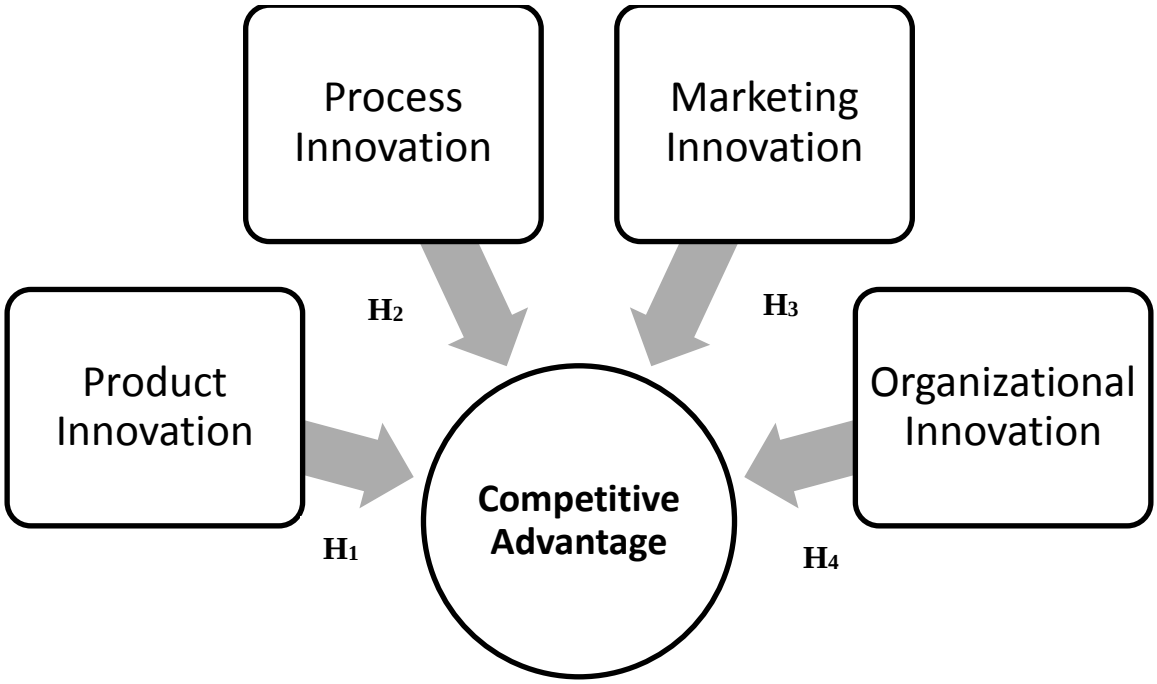

Figure 1.2: Conceptual framework

- **H_1:** Product innovation has a positive impact on competitive advantage.
- **H_2:** Process innovation has a positive impact on competitive advantage.
- **H_3:** Marketing innovation has positive impact on competitive advantage.
- **H_4:** Organisation innovation has positive impact on competitive advantage

CHAPTER 2

METHODOLOGY

2.1 Research Methodology

This chapter will discuss the research methodology followed by this study. The research methodology is fundamental to the study and makes the study reliable and verifiable for the present and future work. The data was collected through the use of a questionnaire survey and analyzed using SPSS (version 22). The researcher analyzed the impact of diffusion of innovation and knowledge transfer in the telecommunication industry. This study will be followed by quantitative design and the data was collected from Korek Company located in North Iraq.

2.2 Research Design

The study is a quantitative research design and this was adopted because a quantitative research design helps in collecting a large amount of data and therefore enables the researcher to collect the opinion of the masses. The quantitative research design helps in gathering the numerical values and the researcher can then analyze the large data by making comparisons and later forming ratios, percentages and statistics. The quantitative research design will help in drawing the more logical and verifiable conclusion that can be valid for the future research in the relevant field. The data used in this study is empirical and first hand collected the researcher (William, 2007).

2.3 Sampling Techniques

The sample used in this study is collected from the Korek Company in North Iraq. The employees, managers and staff of the Korek Company are given questionnaire that tends to investigate the dependent and independent variables of this study. The study followed Simple Random Sampling which is the probability sampling and each individual

has equal probability of being selected; the P=1/N formula for sampling is be used. P is the probability to be part of the sample and N is the population size (Coiro, Knobel, Lankshear & Leu, 2008, p.181). A total of 100 questionnaire were distributed Korek Telecom's employees based on purposive sampling which sole aim is to attain a preselected aim and hence places a limit on the required sample size.

2.4 Data Collection Procedures

The data is collected through the questionnaire survey. The questionnaire is distributed and explained by the researcher to the participants of the study. The researcher has also explained on the context in which these questions are written and also the reason of the study. The researcher seeks to identify the relation between the diffusion of innovation and the knowledge transfer to the firm performs as elaborated in the research model. The questionnaire has a scale of five starting from strongly agree to strongly disagree. The participants were explained everything about the questionnaire so that the responses could be as objective as possible (Martínez-Mesa, González-Chica, Duquia, Bonamigo, & Bastos, 2016).

The data is collected from the following sources for further information as well:

1. Books
2. Journal Articles
3. Internet Source

2.5 Materials

The researcher also took permission from the Korek Company before conducting the survey to be within the ethical limits. The researcher also presented an ethical form to the ethical committee of the Near East University and after the ethical clearance; this survey questionnaire was conducted in the Korek Head office. The researcher has not incorporated any other material that is not mentioned in the material for this study.

2.6 Data Analysis Procedures

The data will be analyzed through the SPSS version 22. The responses of the participants were gathered and inputted into SPSS directly without the interpretation by the researcher. The researcher tends to analyze the impact of the independent variables on the dependent variable (firm performance) and these are:

1. diffusion of innovation
2. knowledge transfer

As discussed in the theoretical framework, the study will analyze the impact of the diffusion of innovation and knowledge transfer on the firm performance. The study investigated the impact of marketing and organizational innovation in particular with knowledge transfer to analyze the firm performance.

The data analysis process involved the use of regression analysis and this is based on the assertion that firm performance is a function of knowledge transfer and diffusion of innovation. This can be stated as follows;

Firm performance = F(knowledge transfer and diffusion of innovation)…… (1)

But it has been established that the innovativeness of knowledge transfer is composed of organisation and marketing innovation while diffusion has been established to be composed of product and process innovation. This can thus be expressed as follows;

Firm performance = F(organisation innovation, marketing innovation, product innovation and process innovation)…… (2)

On the other hand, firm performance was estimated using competitive advantage as a proxy variable. The regression model can thus be estimated as follows;

$CA = \beta_0 + \beta_1 OI + \beta_2 MI + \beta_3 PRI + \beta_4 PCI + \mu$…….. (3).

Where CA is competitive advantage, OI is organisation innovation, MI is marketing innovation, PRI is product innovation and PCI is process innovation while the coefficients and the error term are denoted by β_0 to β_4 and μ respectively.

2.7 Ethical Consideration

The study has been conducted within the ethical limits and after the acceptance of the ethical committee of the Near East University. The researcher has made sure that there is not physical or emotional harm to any participant. The researcher elaborated on the aim of the study to all participants and the written consent form has been signed by the participants of the research. The researcher has not forced any participant to be the part of the study. The researcher allowed them to leave whenever they not comfortable without giving the reason. The researcher has tried to be completely objective and did not include any personal biases and personal opinions that the researcher has on the research model. The researcher has not kept any significant information private from the participants. The questionnaire was distributed and explained by the researcher himself and all the participants were given the equal opportunity to ask individual questions or ambiguities that they had about the questions of the survey questionnaire. Also, the researcher has not misinterpreted or detracted any information that was relevant to the participants and was important for them to know.

CHAPTER 3

DATA ANALYSIS AND PRESENTATION

3.1 Introduction

A total of 100 questionnaires were distributed to employees working for Korek Telcom in North Iraq and data from a total of 74 questionnaires was successfully retrieved. This constituted a response rate of 74%. As result, data analysis and presentation were done based on the obtained 74 questionnaires and the data was analysed using SPSS 22. This chapter therefore looks at the analysis and presentation of the obtained data.

3.2 Demographic analysis of the participants

The exhibited findings in table 4.1, denotes that Korek Telcom has a high number of male employees constituting 55% of the total number of employees who participated in the survey as opposed to 19% of female employees. Such may have implications on knowledge transfer which can in turn influence the competitiveness of the telecommunications company.

It can be noted that a significant number of Korek's employees are young employees with 18.9%, 8.1% and 41.9% being composed of employee Under 18 years, between 18-24 years and 25-34 years respectively. This implies that there is a greater tendency for young employees to seek knowledge through enrolling for academic and professional qualifications and hence increase again possible chances of knowledge transfer and diffusion of innovation.

8.1% of the employees have PhD degrees and this also increases possible chances of possible knowledge transfer and diffusion of innovation in the telecommunications industry. 51.4% of Korek's employees while 23.0%, 9.5%, 6.8% and 9.5% are composed of Syrian, Jordanian, British and other nationalities respectively. This provides evidence of possible knowledge transfer and diffusion of innovation.

Table 3.1: Demographic analysis

Variable	Description	Responses	Percentage
Gender	Male	55	74.3%
	Female	19	25.7%
	Total	**74**	**100%**
Age group	Under 18 years	14	18.9%
	18-24 years	6	8.1%
	25-34 years	31	41.9%
	35-44 years	20	27.0%
	45-54 years	3	4.1%
	Total	**74**	**100%**
Nationality	Kurdish	38	51.4%
	Syrian	17	23.0%
	Jordanian	7	9.5%
	British	5	6.8%
	Other	7	9.5%
	Total	**74**	**100%**
Work experience	5 years or less	21	28.4%
	6-10 years	37	50.0%
	11-15 years	14	18.9%
	16-20 years	1	1.4%
	21-24 years	1	1.4%
	Total	**74**	**100%**
Employment level	Operations personnel	57	77.0%
	Supervisor	9	12.2%
	Manager	8	10.8%
	Total	**74**	**100%**
Educational qualification	High school	6	8.1%
	Diploma	16	21.6%
	Bachelor’s degree	25	33.8%
	Master’s degree	21	28.4%
	PhD	6	8.1%
	Total	**74**	**100%**

This can also be supported by their level of professional experience as 28.4%, 50.0% and 18.9% have 5 years or less, 6-10 years and 11-15 years of experience respectively. Also, 6 employees have High school diplomas, 16 have bachelor's degrees, 25 have master's degrees and 6 have PhD degrees.

3.3 Model summary

Model summary results were obtained from computations conducted using SPSS 22 and the results show that 66.2% changes in Korek Telcom's competitive advantage is explained by organisation innovation, marketing innovation, product innovation and process innovation. This therefore implies that 33.8% changes in Korek Telcom's competitive advantage is explained by variables outside the estimated model.

Table 3.2: Model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.814[a]	.662	.642	.44116

a. Predictors: (Constant), organisation innovation, marketing innovation, product innovation, process innovation

3.4 Regression coefficient analysis

Based on the computed regression analysis results, it can be noted that there is a significant positive association between competitive advantage and marketing innovation of 0.458. this implies that an improvement in the organization's marketing innovation will results in an improvement in competitive advantage by 45.8%. this is supported by findings made by Benito-Bilbao, Sánchez-Fuente and Otegi-Olaso (2015), which outlined that the adequate management of knowledge and the appropriate transfer of information allow the firms to perform better and find ways of developing more rapidly and hence leading to an improvement in competitive advantage.

The results also show that an improvement in product innovation by 1% will result in an insignificant improvement in Korek's competitive advantage by 13.4%. These results concur with findings made by Chaney, Devinney, and Winer (1992), which assert that it is important to come up with innovative products that are able to meet the ever-changing consumers' tastes and preferences.

Furthermore, positive changes in process innovation will result in an increase in Korek's competitive advantage by 21.1% for each successive 1% improvement. This goes along with ideas established from a study by Bowen, Rostami, & Steel, 2010), which outlined that process innovation is necessary as it results in increased efficiency, effectiveness and mass production which are positively associated with improvements in a firm's competitive advantage.

The results however, show that a 1% improvement in Korek's organisational innovativeness will result in adverse change in its competitive advantage by 4.1%. This goes along with ideas established by Bozeman (2000), which suggests that the telecommunications firms are failing to develop within the local market but also it will allow the organization to be more competitive. Such can also be attributed to resistance to change.

Table 3.3: Regression coefficient analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.027	.282		3.645	.001
	marketing innovation	.458	.065	.576	7.079	.000
	product innovation	.134	.103	.139	1.309	.195
	process innovation	.211	.099	.229	2.124	.037
	organisation innovation	-.041	.043	-.067	-.963	.339

a. Dependent Variable: competitive advantage

3.5 Correlation coefficient test

Correlation coefficient test was done using Pearson correlation coefficient test and the results show that organisation innovation is insignificantly and negatively correlated with marketing innovation by 0.020, product innovation and organisation innovation are also insignificantly and negatively correlated with each other by 0.046 while process innovation and organisation innovation, competitive advantage and product innovation are also negatively correlated with each other by 0.041 and 0.095 respectively. This suggests that efforts to improve one of these elements will always see other indicators swinging in the opposite direction and this is a big sign of incompatibility between knowledge transfer, innovation and competitive advantage strategies.

Table 3.4: Correlation coefficient test

Correlations

		marketing innovation	organisation innovation	product innovation	process innovation	competitive advantage
marketing innovation	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	74				
organisation innovation	Pearson Correlation	-.020	1			
	Sig. (2-tailed)	.867				
	N	74	74			
product innovation	Pearson Correlation	.456**	-.046	1		
	Sig. (2-tailed)	.000	.699			
	N	74	74	74		
process innovation	Pearson Correlation	.491**	-.041	.742**	1	
	Sig. (2-tailed)	.000	.730	.000		
	N	74	74	74	74	
competitive advantage	Pearson Correlation	.753**	-.095	.575**	.618**	1
	Sig. (2-tailed)	.000	.423	.000	.000	
	N	74	74	74	74	74

**. Correlation is significant at the 0.01 level (2-tailed).

On the other hand, it can be observed that product innovation and marketing innovation; process innovation and marketing innovation; process innovation and product innovation; competitive advantage and marketing innovation; competitive advantage and product innovation; and competitive advantage and process innovation by 0.456, 0.491, 0.742, 0.753, 0.575 and 0.618 respectively. But it can also be noted that the correlations between process innovation and marketing innovation; process innovation and product innovation, competitive advantage and marketing innovation; competitive advantage and product innovation; and competitive advantage and process innovation are significantly correlated with each other at 1%. This therefore means that an improvement in any of these strategic indicators will result in an improvement in the other.

3.6 Analysis of Variance (ANOVA)

ANOVA provides an indication of the specification of the estimated model and the idea is to accept that the model is correctly specified when the obtained p-value is significant at 1%. Using the obtained results, it can thus be concluded that the model is correctly specified since the p-value is significant at 1%.

Table 3.5: Analysis of Variance (ANOVA)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.286	4	6.572	33.765	.000[b]
	Residual	13.429	69	.195		
	Total	39.715	73			

a. Dependent Variable: competitive advantage

b. Predictors: (Constant), organisation innovation, marketing innovation, product innovation, process innovation

3.7 Reliability tests

The main goal of reliability tests is to determine the internal consistency of the variables to see if they will be in a position to warrant reliable estimates and the basic idea is that Cronbach's alpha values that are at least 70% will offer reliable estimates. Based on table 3.6, it can thus be concluded that the variables are in a very strong position to offer extremely reliable estimates since their alpha values are beyond 87%.

Table 3.6: Reliability tests for organisational innovation

Model variable	**Variable elements**	**Individual Alpha values**	**Overall alpha value**
Organisational innovation (Independent variable)	Renewing the organization structure to facilitate teamwork	0.892	**0.911** Number of items = 6
	Renewing the production and quality management systems	0.878	
	Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing	0.949	
	Renewing the routines, procedures and processes employed	0.872	
	Renewing the human resources management system	0.886	
	Renewing the supply chain management system	0.872	

The reliability results show that both elements of marketing and diffusion of product innovation have a strong capacity to offer reliable estimates since all the alpha values are beyond the 0.70 benchmark.

Table 3.7: Reliability tests for marketing innovation

Model variable	Variable elements	Individual Alpha values	Overall alpha value
Marketing innovation (Independent variable)	Renewing the product promotion techniques employed for the promotion of the current and/or new products.	0.780	**0.792** Number of items = 4
	Renewing the distribution channels without changing the logistics processes related to the delivery of the product	0.759	
	Renewing the product pricing techniques employed for the pricing of the current and/or new products	0.702	
	Renewing general marketing management activities	0.722	

Table 3.8: Reliability tests for product innovation

Model variable	Variable elements	Individual Alpha values	Overall alpha value
Diffusion of product innovation (Independent variable)	Developing new products with technical specifications and functionalities totally differing from the current ones	0.738	**0.911** Number of items = 6
	Used knowledge management to widen the array (line/range) of products without increasing costs	0.756	
	Increasing manufacturing quality in components and materials of products	0.744	
	Decreasing manufacturing cost in components and materials of current products.	0.731	
	Developing newness for current products leading to improved ease of use for customers and to improved Customer satisfaction.	0.707	
	Developing new products with components and materials totally differing from the current ones	0.735	

Using the results shown in table 3.8, it can be concluded that the variable competitive advantage is highly reliable to explain the changes in firm performance since its combined alpha value is above 70%. The same applies to its sub elements whose alpha values are also above the 70% bench mark.

Table 3.9: Reliability tests for competitive advantage

Model variable	Variable elements	Individual Alpha values	Overall alpha value
Competitive advantage (dependent variable)	Offering low prices for your products than competitors	0.860	**0.856** Number of items = 10
	Value and protects knowledge embedded in individuals through employee retention systems.	0.840	
	Products (smartphones and modem) would be difficult and expensive for rivals to duplicate.	0.831	
	Has extensive policies and procedures for protecting trade secrets	0.839	
	Used knowledge transfer to widen the array (line/range) of products without increasing costs	0.839	
	Use research and development system to maintain market share.	0.835	
	Use niche marketing as a marketing strategy for penetrating in the untapped markets	0.848	
	Market position can create strong barriers to entry for other firms	0.834	
	Is able to apply knowledge to changing competitive conditions.	0.833	
	Is good at filtering and replacing outdated knowledge in a competitive market.	0.864	

3.8 Hypothesis tests

Hypothesis results were derived from correlation coefficient estimates and the first hypothesis which contends that product innovation is positively significantly correlated with competitive advantage can accept at 5%. This suggests that in the short run innovative changes in the organisation are being met with resistance from members of the organisation and this affects the firm's performance which in turn reduces its competitive advantage. Moreover, a period of organisational innovation often brings a lot of changes some of which are costly both in terms of time, resources and money and if this is not properly addressed both performance and competitive advantage will be negatively affected.

Table 3.10: Hypothesis test

	Hypothesis (H_O)	**p-value**	**Decision**
H_1	Product innovation has a positive impact on competitive advantage.	0.000	Rejected
H_2	Process innovation has a positive impact on competitive advantage.	0.000	Accepted
H_3	Marketing innovation has a positive impact on competitive advantage.	0.000	Accepted
H_4	Organisation innovation has a positive impact on advantage.	0.423	Rejected

However, it can be accepted from the point that improvements in marketing, product and process innovation have positively significant correlations with competitive advantage. Which such implications, one can thus contend that the firm's approach towards marketing, product and process innovation is positively contributing towards improving the telecommunications industry's competitive advantage.

3.9 Findings and Discussion

It can be deduced from the given results that changes in diffusion innovation have significant implications on the telecommunications industry as they are accounting for huge changes in competitive advantage. This signifies how important knowledge transfer and diffusion innovation are to the telecommunications industry.

As noted, changes in diffusion innovation have different implications on the telecommunications industry's competitive advantage. This is because knowledge transfer through marketing innovation is favoring improvements in the telecommunications industry's competitive advantage whereas marketing innovation is causing an adverse effect on the telecommunications industry's competitive advantage.

3.9.1 Marketing innovation

According to Santos, & Peffers, (1995), marketing innovation and creativity is the key success for organizations in business environment, particularly in strategic planning for future growth and for developing new products and services. It is also stated that marketing innovation reflects the firm ability to improve products/services continuously, which lead to achieve huge and new benefits to its clients and satisfy their needs in a unique way. This in return, may result in creating a competitive advantage for the firm in question through identifying needs and translating them into technical specifications and distinguishing the firm from its competitors by making the firm presence remarkable. However, the ability to develop new products, as a response to changes in customer needs, is not sufficient enough for a firm to have a competitive advantage (Chen, 2006).

This suggests that diffusion innovation is possibly resulting in better marketing strategies and thus exposing the telecommunications products and services to a wide number of customers. In addition, diffusion innovation through marketing innovations can be said to be resulting in a huge flow of information about the telecommunications industry’s products and services and hence resulting in an increased acknowledgement and use of their importance. However, most of the previous studies have examined the concept of innovation from a western perspective and little attention has been paid to the investigation of such concept in the Arab world

Moreover, while a large body of literature exists on the innovation of goods. The innovation of services, especially financial ones, has been given far less attention. Specifically, as far as the current researchers' knowledge is concerned, no previous studies were found that focus on evaluating the impact of the innovation process on financial institutions in eastern countries particularly in Jordan. Therefore, the primary purpose of this paper is to evaluate the extent to which marketing innovation may help firms on creating a sustainable competitive advantage (Kanagal, 2015).

It is found that pharmaceutical firms pay a significant attention regarding the introduction of new products and developing existing products, however, these firms did not pay much attention to the ideas that was considered strange for the first glance. The authors also found that there was a significant relationship between firm size and its use to the innovation and creativity. The management support, independency and low organizational barriers had a significant positive effect on increasing firm ability to innovate. The authors recommended that for firms to be innovative, they had to improve their working environment and delegate their employees more authorities. The degree of innovation in the study sample was below the average. However, the author also concluded that the performance of the firm is highly affected by its marketing innovation and creativity. Furthermore, the results of the study also showed that innovation, in both selling and distributing, was the main factor influenced firm's performance compared to other marketing activities (Ilić, Ostojić, & Damnjanović, 2014).

It is believed the innovation and learning have a direct effect on organizational presence and the ability of creating a sustainable competitive advantage. Rosenbusch, Brinckmann, and Bausch (2011) stated that, leaders in learning organizations are responsible for building organizations where people are continually expanding their capabilities to shape their future-that is, leaders are responsible for learning. The employees who had trust in their management were performing, cooperating and dedicating their full efforts to the assigned task. Accordingly, the employee-perceived support by top management for organizational learning and innovation is associated with trust in management and affective commitment to the organization, as mediated by supervisor support for employee empowerment and development (Naidoo, 2010).

The employee-perceived support by top management for organizational learning and innovation is associated with employee-perceived service quality and client adherence to their service plan, as mediated by supervisor support for employee empowerment and development, trust in management and affective commitment to the organization. It is reported that manager's attitudes towards employee involvement were related to unit manager attitudes and to employee attitudes. Therefore, the top management supports a work climate in which employees may innovate and learn from one another, supervisors will then feel freer to provide greater latitude for employees to make appropriate decisions as well as grow and develop (Maciariello, 2009).

3.9.2 Organizational innovation

However, the opposite can be said about the diffusion innovation through organisation innovation which has been noted to be causing negative effects on the telecommunications industry's competitive advantage. This as noted is possibly as a result of resistance to change as telecommunications industry employees will be more comfortable with their old working styles, culture, management and strategies and will be reluctant to undergo a series of changes. This is also because diffusion innovation by innovate their organisation risks the employees of their job security as it is often surrounded by a lot of uncertainties (Damanpour, 1996).

Under this new atmosphere that features the external and internal company's environment, it becomes necessary for company to fit itself in these changes in order to maintain its market place, and to face the aggressive competition in such an open world market. Under such a situation, companies are imposed (compiled) to carry out research and development in all fields through innovation and creativity regarding their methods that include: management process, product, marketing…etc, in order to find out new innovation ideas which distinguish the company from others and give it an efficient competitiveness. Indeed, there are many types of innovation such as: Product innovation, Process innovation, Marketing innovation, Organizational innovation, Paradigm innovation…etc. All these types and others allow companies to realize a competitive advantage and economic benefits. We focus through this paper on product innovation for the reason that the product (whether goods or services) is the basic of a company establishment and the direct link with consumers who are considered as the most important objective of the companies (Bowen, Rostami, & Steel, 2010).

3.9.3 Product innovation

Product innovation is the development of new products, making changes in the current product design or using new techniques and means in the current production methods, in other words, it focuses on existing markets for existing products, differentiating through features and functions that current offers do not have. We can look at the product innovation from two sides; internal side where it depends on knowledge, capacities, resources and the technologies used in the company, however; from the external side product innovation focuses on the consumers' needs and the owner's expectation.

Looking at the terms used in product innovation field one can conclude that there has been a change of meanings over time. Although "design" originates from the "making of a drawing" it is obvious that the meaning of "design" has been enriched over time. In parallel to "design" the term" product development" has evolved describing the generation of products, processes or services. In the last couple of years the term innovation was used in a variety of meanings although the original meaning refers to a more or less radical introduction of change (Akova, Ulusoy, Payzın, & Kaylan, 1998).

Product innovation is not a new phenomenon which suddenly emerged as part of the space age. It has been around and shaped our life for thousands of years. Today's companies gain their competitive advantage and economic benefits largely from innovation. Further, we can state product innovation advantages both to the company and to industry as the following: Product innovation's contribution to company output can be measured by sales and profits contributed by new products/ services, change in market share etc., also product innovation may increase companies' knowledge stock; Product innovation contributes in reducing production costs and time of production process and that leads to an increase in investment returns and production efficiency, It contributes also in improving products quality and makes products more competitive in home and external markets; Realize customers' needs with new characteristics through creating new product pattern with determined measures and features which are not found and realizing the continuance of customer's fidelity; Providing solutions to the

production problems and creating new opportunities to use the new resources; Product innovation is an important driver of economic growth and productivity. In this relationship the innovation output of one company becomes part of the innovation input to another. An example of this powerful dynamic is the high rate of innovation in semiconductors (Gunday, Ulusoy, Kilic, & Alpkan, 2011).

3.9.4 Process innovation

Hence, process innovation can be said to be associated with mass production, economies of scale, productive and allocative efficiency which are the core factors of improving a firm’s competitive advantage. Desired Product Features and Design, Size, Usability, Quality, Time, Price ,Cost savings/ Incremental Revenues… in other words is the implementation of new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. Regarding user innovation, a great deal of innovation is done by those actually implementing and using technologies and products as part of their normal activities. Sometimes user-innovators may become entrepreneurs, selling their product, they may choose to trade their innovation in exchange for other innovations, or they may be adopted by their suppliers (Silva Oliveira, & Moraes, 2016).

Nowadays, they may also choose to freely reveal their innovations, using methods like open source. In such networks of innovation the users or communities of users can further develop technologies and reinvent their social meaning. The continuance and the persistence of any company depends on its capacities to maintain its market place and face the competition which spreads rapidly and aggressively with the globalization and the expansion of the new technologies, and while product reflects the company's image its whole success depends also on the product success through realizing (compliance) consumers desires and needs, and developing new products. But changes in process innovation make it easy and less costly for the telecommunications

industry to produce its products and offer services in a less costly way (Gilbert & Cordey-Hayes, 1996).

Process innovation is the adoption of new or significantly improved production methods. These methods may involve changes in equipment or production organization or both. The methods may be intended to produce new or improved products which cannot be produced using conventional plants or production methods, or essentially to increase the production efficiency of existing products. There is a link between the two terms innovation and creativity, in other words they are two faces to one coin, while creativity means the creation of new ideas which does not exist before in order to solve problems (that doesn't relate to the technical side only which includes products development and process, but also the machines, production methods, management process. that lead to increase productivity, innovation is the implementation of these new ideas. We find also the term “invention" which nearly has the same meaning of creativity as distinguished between invention and innovation. He argues that “invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice (Tohidi & Jabbari, 2012).

The innovation process as the continuous improvements of the organizational learning process and conducting new and modern marketing activities and practices which are superior compared to the traditional ones. Therefore, it is concluded that the innovation process requires proficiency in all organizational functions. Therefore, the innovation process is influenced by the following inter correlated parts: (1) firm’s organizational structure and processes, (2) suppliers’ organizational structure and processes and (3) structure and processes of buyer-supplier interfaces (Li, Liu, & Ren, 2007).

Meanwhile, diffusion innovation can be said to be playing an important role in the telecommunications industry. This is because improvements in diffusion innovation through process and product innovating are resulting in improvements in the telecommunications industry's competitive advantage. This suggests that new and innovative telecommunications products are constantly being introduced so as to meet the ever-changing consumers' tastes and preferences. This increases their demand and improves the telecommunications industry's competitive advantage. In addition, product innovation can also suggest a strong ability to produce products that are solving consumer's problems and are making it easy for consumers to perform their desired obligations. Such ability plays an important role towards improving the telecommunications industry's competitive advantage as it is often associated with both customer and brand loyalty.

It can thus be concluded that organisation innovation has negative insignificant implications on the telecommunications industry's competitive advantage while marketing innovation have significant positive effects on the telecommunications industry's competitive advantage. It can also be concluded that both aspects of diffusion innovation are favoring improvements in the telecommunications industry's competitive advantage.

CHAPTER 4

CONCLUSIONS, RECOMMEDNDATIONS, IMPLICATIONS OF THE STUDY AND RESEARCH FOR FUTURE STUDIES

The previous chapter presented findings and discussions based on the data relative to the literature review. This chapter focuses on the conclusion, implications, and recommendation for future research.

4.1 Conclusions

Based on the established results, conclusions can therefore be made that having a relatively high number of young employees is of huge importance towards promoting diffusion of innovation. This is mainly based on the idea that young aged employees have a greater tendency to seek knowledge through enrolling for academic and professional qualifications and thus causing possible improvements in knowledge transfer and diffusion of innovation. It can also be concluded that Korek's high employee educational background provides a conducive environment upon which knowledge transfer and diffusion of innovation can be heightened to greater levels. This is coupled by the diversity of employees from different national backgrounds and it is safe to conclude that having a mixed workforce from different national backgrounds increases chances of having better and significant diffusion of innovation. Conclusions can also be made based on the estimated model that a significant change in the competitive advantage of telecommunications firms is explained by organisation innovation, marketing innovation, product innovation and process innovation. Improvements in diffusion innovation can be said to be positively contributing towards improving the effectiveness of marketing strategies and thereby helping to expose the telecommunications products and services to a wide number of customers. This idea has been based on the perspective that marketing innovation results in a huge flow of information about the telecommunications industry's products and services hence

resulting in an increased acknowledgement and use of their importance. However, improvements in diffusion innovation through organisation innovation have negative effects on the telecommunications industry's competitive advantage and employees are often reluctant to have organizational changes that will affect their old working styles, culture, management, strategies or threaten their job security. The other notable deduction that ability of the telecommunications industry to come up with new and innovative telecommunications products that meet the ever-changing consumers' tastes and preferences will work together towards improving in the telecommunications industry's competitive advantage. Lastly, it is also worthy to note improvements in process innovation are highly associated with mass production, economies of scale, productive and allocative efficiency which are the core factors of improving a firm's competitive advantage.

4.2 Recommendations of the Study

In line with the obtained findings, the following implications can be made;

- There is a greater need for the telecommunication industry to ensure that there it continues to draw employees from different national backgrounds so as to promote improvement in knowledge transfer and the diffusion of innovation.
- Telecommunication firms are also highly encouraged to offer training programs to their employees so as to improve their knowledge and understanding of innovation.
- Efforts must be placed towards improving the role played by marketing innovation either by coming up with new and innovative ways of distributing information in relation to the 4Ps of marketing.
- Efforts must also be placed towards continuously investing in methods and technology that will result in improvements in process and product innovation.
- Organizations must also come up with organizational strategies that can facilitate the diffusion of innovation and this includes coming up with strategies that deal with challenges that undermine diffusion of innovation.

4.3 Implications for Practitioners

Organizations can improve proposed strategies for improving competitive advantage and high performance. This model is also helpful for other businesses like banking sector because telecommunications and banking sectors are very huge.

4.3 Research for future studies

The study based its findings from analysis of one of the biggest telecommunications firms in North Iraq. Other studies can possibly undertake a panel examination of two or more firms in the telecommunications industry or possibly the banking sector which relies heavily on competitive advantage as a source of success.

REFERENCES

Akova, B., Ulusoy, G., Payzın, E., & Kaylan, A. R. (1998). New Product Development Capabilities of the Turkish Electronics Industry. *Fifth International Product Development Management Conference*, (pp. 1-9). Como, Italy.

Al-Khouri, A. M. (2014). Fusing knowledge management into the public sector: A review of the field and the case of the emirates identity authority. *Journal of Knowledge Managament, Economics adn Information Technology, 4*(3), 1-25.

Aragón-Sánchez, A., & Sánchez-Marín, G. (2005). Strategic orientation, management characteristics, and performance: A study of Spanish SMEs. *Journal of Small Business Management*, *43*(3), 1-15.

Audretsch, D. B. (1995). Innovation, Growth and Survival. *International Journal of Industrial Organization, 13*(4), 1-13.

Baldwin, J. R., & Johnson, J. (1996). Business Strategies in More- and Less-Innovative Firms in Canada. *Research Policy, 25*, 1-12.

BarbaraWejnert. (2002). Integrating Models of Diffusion of Innovations: A Conceptual Framework. *Annual Review of Sociology, 28*, 1-27.

Barringer, B. R., & Bluedorn, A. C. (1999). The Relationship between Corporate Entrepreneurship and Strategic MAnagement. *Strategic Management Journal, 20*, 1-18.

Benito-Bilbao, J., Sánchez-Fuente, F., & Otegi-Olaso, J. R. (2015). Mapping the Connection between Knowledge Transfer and Firm Competitiveness: An Empirical Research in the Basque Country. *Journal of Technology Management and Innovation, 10*(4), 1-10.

Blaikie, N. (2003). *Analyzing Quantitative Data: From Description to Explanation.* Sage.

Bowen, F. E., Rostami, M., & Steel, P. (2010). Timing is Everything: A Meta-Analysis of the Relationships between Organizational Performance and Innovation. *Journal of Business Research, 63*, 1-6.

Bozeman, B. (2000). Technology transfer and public policy: a review of research and theory. *Research Policy, 29*(4), 1-22.

Burns, T. E., & Stalker, G. M. (2011). Mechanistic and Organic Systems of Management. In M. Godwyn, & J. H. Gittell, *Sociology of Organizations: Structures and Relationships*. Sage.

Chen, Y. (2006). Marketing Innovation. *Journal of Economics & Management Strategy, 15*(1), 1-20.

Cohen, J. E., & Lemley, M. A. (20011). Patent Scope and Innovation in the Software Industry. *CAl. L. Rev., 89*, 1-5.

Cohen, W. M., & Levinthal, D. A. (2000). Absorptive Capacity: A New Perspective on Learning and Innovation. In R. L. Cross, & S. Israelit, *Strategic Learning in a Knowledge Economy*. Routledge.

Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2008). *Handbook of Research on New Literacies.* Routledge.

Damanpour, F. (1996). Organizational Complexity and Innovation. *Management Science, 42*(5), 1-22.

Darroch, J. (2005). Knowledge Management, Innovation and Firm Performance. *Journal of Knowledge Management, 9*(3), 1-14.

Donaldson, L. (1996). *For Positive Organization Theory.* London: Sage.

Donaldson, L. (1999). *Performance DrivenOrganizational Change.* London : Sage.

Drew, S. A. (1997). From Knowledge to Action: The Impact of Benchmarking on Organizational Performance. *Long Range Planning, 30*(3), 1-12.

Drucker, P. F. (1985). *Innovation and Entrepreneurship.* Oxford: Butterworth-Heinemann.

Fernandes, L. M., Morales, V. G., Montes, F. L., Molina, V. B., & Moreno, A. R. (2006). Interorganizational Knowledge Transfer and Performance. Knowledge Transferability and Internal Knowledge Transfers as .... *OLKC Conference at the University of Warwick*.

Frenkel, A., Maital, S., & Grupp, H. (2000). Measuring Dynamic Technical Change: A Technometric Approach. *International Journal of Technology Management, 20*, 1-14.

Gawer, A., & Cusumano, M. A. (2002). *Platform Leadership How Intel, Microsoft, and Cisco Drive Industry Innovation.* Boston: HBSP.

Gërguri-Rashiti, S., Ramadani, V., Abazi-Alili, H., Dana, L.-P., & Ratten, V. (2015). ICT, Innovation and Firm Perfromane: The Transition Economies Context. *Thunderbird International Business Review, 59*(1), 1-9.

Gilbert, M., & Cordey-Hayes, M. (1996). Understanding the Process of Knowledge Transfer to Achieve Successful Technological Innovation. *Technovation, 16*(6), 1-9.

Goodling, R. Z., Goel, S., & Wiseman, R. M. (1996). Fixed versus Variable Points in the Risk-Return Relationship. *Journal of Economic Behavior Organization, 29*, 1-15.

Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of Innovation Types on Firm Performance. *International Journal of Production Economics, 133*, 1-10.

Guzzo, R. A., Jackson, S. E., & Katzell, R. A. (1987). Meta-Analysis Analysis. In L. L. Cummins, & B. M. Staw, *Research in Organizational Behavior*. Greenwich: JAI Press.

Hagedoorn, J., & Cloodt, M. (2003). Measuring Innovative Performance: Is There an Advantage in Using Multiple Indicators? *Research Policy, 32*, 1-10.

Hashi, I., & Stojčić, N. (2013). The impact of innovation activities on firm performance using a multi-stage model: Evidence from the Community Innovation Survey 4. *Research Policy, 42*(2), 1-10.

Heydebreck, P., Klofsten, M., & Maier, J. (2000). Innovation Support for New Technology-Based Firms: The Swedish Teknopol Approach. *R & D Management, 30*(1), 1-8.

Hughes, A. (2003). *Knowledge Transfer, Entrepreneurship adn Economic Growth: Some Reflections and Implications for the Policy in the Netherlands.* CBR Research Program 3 on Enterprise and SMEs.

Hult, G. T., & Ketchen, D. J. (2001). Does Market Orientation Matter? A Test of the Relationship Between Positional Advantage and Performance. *Strategic Management Journal, 22*, 1-7.

Hutzschenreuter, T., & Horstkotte, J. (2010). Knowledge Transfer to Partners: A Firm Level Perspective. *Journal of Knowledge Management, 14*(3), 1-15.

Ilić, D., Ostojić, S., & Damnjanović, N. (2014). The Importance of Marketing Innovation in New Economy. *Singidunum Journal of Applied Sciences, 11*(1), 1-8.

Jónsson, B. (2007). Does the size matter? The relationship between size and profitability of Icelandic firms. *Bifröst Journal of Social Science*, *1*, 1-8.

Kanagal, N. B. (2015). Innovation and Product Innovation in Marketing Strategy. *Journal of Management and Marketing Research, 18*, 1-20.

Kempe, D., Kleinberg, J., & Tardos, E. (2003). MAximizing the Spread of Influence through a Social Network. *Proceedings of the ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*. ACM.

Kinkel, S., Lay, G., & Wengel, J. (2005). Innovation: More than Research and Development. Growth Opportunities on Different Innovation Paths. *Bulletins of the Manufacturing Survey*(33), 1-10.

Leidner, D. E., & Kayworth, T. (2006). Review: a review of culture in information systems research: toward a theory of information technology culture conflict. *MIS Quarterly, 30*(2), 1-25.

Letwin, A. S. (2011). Technological Change at Work: The Impact of Employee Involvement on the Effectiveness of Health Information Technology. *ILR Review, 64*(5), 1-23.

Li, H., & Atuahene-Gima, K. (2001). Product Innovation Strategy and the Performance of New Technology Ventures in China. *Academy of Management Journal, 44*(6), 1-9.

Li, Y., Liu, Y., & Ren, F. (2007). Product Innovation and Process Innovation in SOEs: Evidence from the Chinese Transition. *Journal of Technology Transfer, 32*, 1-17.

Maciariello, J. (2009). 'Marketing and IInnovation in the Drucker Management System. *Journal of the Academy of Marketing Science, 37*, 1-10.

Maede, N., & Islam, T. (2006). Modelling and Forecasting the Diffusion of Innovation-A 25-year Review. *International Journal of Forecasting, 22*(3), 1-17.

Martínez-Mesa, J., González-Chica, D. A., Duquia, R. P., Bonamigo, R. R., & Bastos, J. L. (2016). Sampling: how to select participants in my research study? *Sociedade Brasileira de Dermatologia, 91*(3), 1-3.

McGrath, R. G., Tsai, M. H., Venkataraman, S., & MacMillan, I. C. (1996). Innovation, Competitive Advantage and Rent: A Model and Test. *Management Science, 42*, 1-10.

Moore, G. A. (2004). Darwin and the demon: Innovating within established enterprises. Harvard business review, 82(7-8), 86-92.

Naidoo, V. (2010). Firm Survival through a Crisis: The Influence of Market Orientation, Marketing Innovation and Business Strategy. *Industrial MArketing Management, 39*(8), 1-8.

Oke, A. (2007). Innovation Types and Innovation Management Practices in Service Companies. *International Journal of Operations and Production Management, 27*(6), 1-20.

Palacios-Marques, D., Peris-Ortiz, M., & Merigo, J. M. (2013). The effect of knowledge transfer on firm performance: An empirical study in knowledge-intensive industries. *Management Decision, 51*(5), 1-13.

Pervan, M., & Višić, J. (2012). Influence of Firm Size on its Business Success. *Croatian Operational Research Review, 3*, 1-9.

Pianta, M., & Vivarelli, M. (2003). *The Employment Impact of Innovation: Evidence and Policy.* Routledge.

Porter, M. E., & Ketels, C. H. (2003). UK Competitiveness: Moving to the Next Stage. *DTI Economics Paper no. 3* (pp. 1-40). Harvard Business School.

Prajogo, D. I. (2016). The Strategic Fit Between Innovation Strategies and Business Environment in Delivering Business Performance. *International Journal of Production Economics, 171*, 1-6.

Pratali, P. (2003). Strategic management of technological innovations in the small to medium enterprise. *European Journal of Innovation Management*, *6*(1), 1-9.

Premkumar, G., Ramamurthy, K., & Nilakanta, S. (1994). Implementation of Electronic Data Interchange: An Innovation Diffusion Perspective. *Journal of Management Information Systems, 11*(2), 1-20.

Ramadani, V., Gërguri, S., Rexhepi, G., & Abduli, S. (2013). Innovation and economic development: The case of FYR of Macedonia. *Journal of Balkan and Near Eastern Studies*, *15*(3), 1-20.

Ratten, V. (2015). International consumer attitudes toward cloud computing: A social cognitive theory and technology acceptance model perspective. *Thunderbird International Business Review*, *57*(3), 1-9.

Ravichandran, T. (2000). Swiftness and Intensity of Administrative Innovation Adoption: An Empirical Study of TQM in Information Systems. *Decision Science, 31*(3), 1-18.

Rivard, H. (2000). A survey on the impact of information technology on the Canadian architecture, engineering and construction industry. *Electronic journal of information technology in construction*, *5*, 1-16.

Rogers, E. M. (2010). *Diffusion of Innovation.* New York: Simon & Schuster Inc. .

Rong, X., & Mei, Q. (2013). Diffusion of Innovations Revisited: From Social Network to Innovation Network. *Proceedings of the 22nd ACM International Conference on Information & Knowledge Management*. ACM.

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A Meta-Analysis of the Relationship between Innovation and Performance in SMEs. *Journal of Business Venturing, 26*(4), 1-13.

Sanchez, R. (2005). Tacit knowledge versus explicit knowledge: approaches to knowledge management practice. *TEAM LinG*, 1-4.

Santos, B. L., & Peffers, K. (1995). Rewards to Investors in Innovative Information Technology Applications: First Movers and Early Followers in ATMs. *Organization Science, 6*, 1-15.

Schumpeter, J. A. (1934). *The Theory of Economic Development. An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle.* Cambridge: Harvard University Press.

Shapiro, A. R. (2006). Measuring Innovation: Beyond Revenue from New Products. *Research- Technology Management, 49*, 1-3.

Shoemaker, F. F., & Rogers, E. M. (1971). *Communication of Innovation,.* ERIC.

Silva, F. M., Oliveira, E. A., & Moraes, M. B. (2016). Innovation Development Process in Small and Medium Technology-Based Companies. *RAI Revista de Administração e Inovação, 13*(3), 1-9.

Tohidi, H., & Jabbari, M. M. (2012). Different Stages of Innovation Process. *Procedia Technology, 1*, 1-4.

Tse, T., Esposito, M., & Soufani, K. (2016). Fast-Expanding Markets: The Revolution of the Microeconomy. *Thunderbird International Business Review*, *58*(1), 1-5.

Verspagen, B. (2005). Innovation and Economic Growth. *The Oxford Handbook of Innovation*, 1-25.

Williams, C. (2007). Research Methods. *Journal of Business & Economic Research, 5*(1), 1-7.

Wind, J., & Mahajan, V. (1997). Issues and Opportunities in New Product Development: An Introduction to the Special Issue. *Journal of Marketing Research, 34*, 1-9.

Woo, J., & Magee, C. L. (2017). Exploring the Relationship Between Technological Improvement and Innovation Diffusion: An Empirical Test. *Quantitative Finance-Economics*, 1-8.

Yilmaz, C., Alpkan, L., & Ergun, E. (2005). Cultural Determinants of Customer-and Learning-Oriented Value Systems and Their Joint Effects on Firm Performance. *Journal of Business Research, 38*, 1-8.

Zack, M. H., & Street, C. (2007). A Framework for Assessing the Impact of Knowledge on Firm Performance. *Learning Fusion* (pp. 1-10). OLKC.

Zeitun, R., & Tian, G. G. (2007). Does ownership affect a firm's performance and default risk in Jordan? *Corporate Governance: The International Journal of Business in Society, 7*(1), 1-19.

LIST OF APPENDICES

APPENDIX 1: RESEARCH QUESTIONNAIRE

Near East University
Yakın Doğu Üniversitesi, Lefkoşa KKTC

Innovation and Knowledge Management

Dear Respondent

RE: ACADEMIC RESEARCH QUESTIONNAIRE

I am a Master Student, studying Innovation and knowledge Management, Near East University, North Cyprus. I am conducting a research entitled "DIFFUSION OF INNOVATION AND KNOWLEDGE TRANSFER IN THE TELECOMMUNICATIONS INDUSTRY: CASE OF KOREK TELECOM". The attached questionnaire is an important survey designed to assess your opinions about general issues related to diffusion of innovation, knowledge transfer and competitive advantage. I would really appreciate if you answer all the questions carefully. All information you provide will be strictly confidential and will be used for academic purposes.

Thank you for your time and cooperation

Goran

Section A: Demographic details

1. Please indicate your gender; □ Male □ Female

2. Please indicate your age;

Under 18	18-24	25-34	35-44	45-54	55 or above

3. Please indicate your nationality

Kurdistan	Syria	Jordan	United Kingdom	Iran	Other

4. How long have you been working for Korek Telecom

5 or less	6-10	11-15	16-20	21-24	25-29	30 or more

5. Please indicate your level of Education

High School	Diploma	Degree	Masters	PhD

6. Please indicate your employment position

Operation personnel	Supervisor	Manager

<u>Section B: Diffusion of Innovation, Knowledge Transfer, and Competitive Advantage:</u> This section seeks to assess your views on the aspect of Organization innovation, marketing innovation, product innovation and process innovation:

Please indicate to what extent you agree with the statement given by circling or striking through as per the following scale:

(1) To a small extent (2) to some extent (3) No extent (4) to a large extent (5) to a very large extent

	Questions: Knowledge Transfer Organizational Innovation: My Company	1	2	3	4	5
7	Renewing the organization structure to facilitate teamwork					
8	Renewing the production and quality management systems					
9	Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing					
10	Renewing the routines, procedures and processes employed					
11	Renewing the human resources management system					
12	Renewing the supply chain management system					

(1) To a small extent (2) to some extent (3) No extent (4) to a large extent (5) to a very large extent

	Questions: Knowledge Transfer Marketing Innovations: My Company	1	2	3	4	5
13	Renewing the product promotion techniques employed for the promotion of the current and/or new products.					
14	Renewing the distribution channels without changing the logistics processes related to the delivery of the product					
15	Renewing the product pricing techniques employed for the pricing of the current and/or new products					
16	Renewing general marketing management activities					

(1) To a small extent (2) to some extent (3) No extent (4) to a large extent (5) to a very large extent

	Questions: Diffusion of Innovation; Processes My company					
		1	2	3	4	5
17	Determining and eliminating non value adding activities in delivery system					
18	Decreasing variable cost and/or increasing delivery speed in delivery logistics.					
19	Determining and eliminating non value adding activities in production system					
20	Has focusing on a particular buyer group, product line or geographic line or geographic market					
21	Has mission statement specifically mention creativity and/or innovation					
22	Has actual performance which contributes in making innovation					
23	Has formal programs for innovation					
24	Has quantified goals for innovation and its impact on future performance					

	Questions: Diffusion of Innovation : Products My Company					
		1	2	3	4	5
25	Developing new products with technical specifications and functionalities totally differing from the current ones					
26	Used knowledge management to widen the array (line/range) of products without increasing costs					
27	Increasing manufacturing quality in components and materials of products					
28	Decreasing manufacturing cost in components and materials of current products.					
29	Developing newness for current products leading to improved ease of use for customers and to improved Customer satisfaction.					
30	Developing new products with components and materials totally differing from the current ones					

(1) To a small extent (2) to some extent (3) No extent (4) to a large extent (5) to a very large extent

	Questions: Competitive advantage **My company**					
		1	2	3	4	5
32	Offering low prices for your products than competitors					
33	Value and protects knowledge embedded in individuals through employee retention systems.					
34	Products (smartphones and modem) would be difficult and expensive for rivals to duplicate.					
35	Has extensive policies and procedures for protecting trade secrets					
36	Used knowledge transfer to widen the array (line/range) of products without increasing costs					
37	Use research and development system to maintain market share.					
38	Use niche marketing as a marketing strategy for penetrating in the untapped markets					
39	Market position can create strong barriers to entry for other firms					
40	Is able to apply knowledge to changing competitive conditions.					
41	Is good at filtering and replacing outdated knowledge in a competitive market.					

Comments……..……..
…….....

ETHICAL APPROVAL REPORT

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

15.05.2018

Sayın Prof. Dr. Mustafa Sağsan

Bilimsel Araştırmalar Etik Kurulu'na yapmış olduğunuz YDÜ/SB/2018/178 proje numaralı ve **"The Relation Between Diffusion Of İnnovation And Competitive Advantage: The Case Of Korek Telecom"** başlıklı proje önerisi kurulumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur. Bu yazı ile birlikte, başvuru formunuzda belirttiğiniz bilgilerin dışına çıkmamak suretiyle araştırmaya başlayabilirsiniz.

Doçent Doktor Direnç Kanol

Bilimsel Araştırmalar Etik Kurulu Raportörü

Direnc Kanol

Not: Eğer bir kuruma resmi bir kabul yazısı sunmak istiyorsanız, Yakın Doğu Üniversitesi Bilimsel Araştırmalar Etik Kurulu'na bu yazı ile başvurup, kurulun başkanının imzasını taşıyan resmi bir yazı temin edebilirsiniz.

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

15.05.2018

Dear Prof. Dr. Mustafa Sağsan

Your application titled **"The Relation Between Diffusion Of İnnovation And Competitive Advantage: The Case Of Korek Telecom"** with the application number YDÜ/SB/2018/178 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

PLAGIARISM REPORT

diffusion of innovation and knowledge transfer in the telecommunication industry: case of korak telecom

ORIGINALITY REPORT

7%	5%	6%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES