An-Najah National University
Faculty of Graduate Studies

The development of Risk Management Model for Palestinian Mobile Communication companies, (Jawwal & Wataniya case study)

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Dedication

To both of my parents, may God give them health and strength.

To my wife (Sara), and my children (Osama, Osaid & Aws) for their endurance.

To my brothers (Mohammad, Mahmoud, Abdulraheim, Ali, Abdullah, Asma).

To my Qashoo family.

To my lovely country, Palestine.

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In The Name Of Allah, Most Compassionate, Most Merciful,

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Thanks to all who, directly or indirectly helped me to finish my mission successfully.

إقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

The development of Risk Management Model for Palestinian Mobile Communication companies, (Jawwal & Wataniya case study)

تطوير ادارة المخاطر للشركات الاتصالات الخلوية في فلسطين "دراسة خاصة لجوال و وطنية"

اقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء مـــا تمـــت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل أية درجة علمية أو بحث علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

In the under assigned work provided in this thesis, unless otherwise referenced, the researcher declares that the work is her own, and has not been submitted elsewhere for any other degree or qualification.

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Table of Contents

Subject	Page
Defense Committee decision	II
Dedication	III
Acknowledgements	IV
Declaration	V
Table of contents	VI
List of Tables	X
List of Figures	IX
List of Abbreviations	XI
Abstract	XII
Chapter One: Introduction	1
1.1 Overview	2
1.2 Theoretical Background	4
1.3 Problem Statements	6
1.4 Research Question	7
1.5 Research Goal	7
1.6 Research Objectives	7
1.7 Research Outcomes	8
1.8 Research Methodology	9
1.9 Thesis Structures	10
Chapter Two: Risk Management	12
2.0 Overview	13
2.1 What Is Risk?	13
2.2 Types of Risk	14
2.3 Possible Ways to Deal with Risk	16
2.4 What Is Risk Management?	17
2.5 Risk Management Process and activities	22
2.6 Risk Management Techniques	45
2.6.1 What If Technique	45
2.6.2 Next Accident Assessment	46
2.7 Risk Management outcomes	47
2.8 Risk Management Goals	48
2.9 Risk Management Benefits	49
2.10 Risk Management Models	51
2.10.1 Analysis of Existing Risk Management Models	52
2.10.2 Problem Solving Methodology to Support Risk Management	56
2.11 Risk Management Structure and Responsibilities	59
2.12 Risk Management Time Frame	61
2.13 Risk Management Deliverables	62
2.14 Summary	62

Chapter Three: Risk Factors in Mobile Communication	64
3.0 Overview	65
3.1 Background	66
3.2 Customer loyalty	68
3.2.1 Loyalty in Services Industries	71
3.2.2 Factors affecting customer loyalty	71
3.2.3 E-Loyalty	74
3.3 Customer Satisfaction	76
3.4 Customer Switching	79
3.4.1 The switching barrier	82
3.5 Customer Retention	84
3.6 Perceived Service Quality	88
3.7 Customer relationship with Technology	91
3.8 Environmental Risk	95
3.9 Managerial consideration and Customer relation management (CRM)	98
3.10 Summary	101
Chapter Four: Research Methodology	104
4.0 Overview	105
4.1 Research Approach	107
4.2 Data Collection	111
4.2.1 Empirical Survey	112
4.2.1.1 Interviews	113
4.2.1.2 Structured Questionnaire	116
4.2.1.3 Design of the Questionnaire	117
4.2.1.4 Access Strategies	119
4.2.2 Population	119
4.2.3 Sampling	119
4.2.3.1 Sample size	120
4.2.3.2 Sampling techniques	122
4.3 Data analysis	122
4.4 Research Plan	124
4.5 Research Credibility	25
4.6 Time Horizon	127
4.7 Ethical Considerations	128
4.8 Research Perspectives	129
Chapter Five: Data Collection and Analysis	130
5.0 Overview	131
5.1 Current Risk Management Practices (Interviews)	131
5.1.1 Identification of Risk Management	135
5.1.2 Risk Management Strategies	137
5.1.3 Risk Management Activities	140
5.1.4 Success factors in Risk Management	141

5.1.5 Customers' Relationships	143
5.1.6 Risk Management Tools and Indicators	147
5.1.7 Obstacles of Risk Management	149
5.2 Customers' Perception Analysis (Questionnaire)	153
5.2.1 Statistical Method	153
5.2.2 Response Rate	154
5.2.3 Analysis of questionnaire	154
5.2.3.1 Respondents' Characteristics (demographic)	155
5.2.3.2 Questionnaire Statements Analysis	157
5.3 Summary	162
Chapter Six: Data Discussion	163
6.0 Overview	164
6.1 Interviews' Results Discussion	164
6.1.1 Risk Management Identification	165
6.1.2 Risk Management Strategies	166
6.1.3 Risk Management Activities	167
6.1.4 Success factors in Risk Management	169
6.1.5 Customers' Relationships	170
6.1.6 Risk Management Tools and Indicators	173
6.1.7 Obstacles of Risk Management	175
6.2 Questionnaires' Results Discussion	176
6.2.1 Respondents' characteristics Discussion	177
6.2.2 Questionnaires' statements Discussion	177
6.3 Proposed Risk Management Process	180
6.4 Proposed Risk Management Model	183
6.5 Proposed Model Validity	186
Chapter Seven: Conclusions and Recommendations	187
7.0 Overview	188
7.1 Research Conclusions	190
7.2 Research Implications and Recommendations	192
7.3 Theoretical Contributions	194
7.4 Research Limitations	195
7. 5 Directions for Future Research	197
References	200
Appendices	245
|	ب

List of Figures

Fig. N0.	Title	Page
Figure (1)	Thesis Outline	11
Figure (2)	Frame work for developing Organization Risk Management Process [12]	19
Figure (3)	The role of the Risk Management function [8]	24
Figure (4)	Involved steps in managing risk [13]	25
Figure (5)	Risk Matrix [19]	27
Figure (6)	Desired outcomes of the Organization's Risk Management [12]	48
Figure (7)	Risk Management Model (Valsamakis, Vivian & du Toit) [32]	53
Figure (8)	Risk Management Model (Burke) [33]	54
Figure (9)	The Risk Management Model (Gray & Larson) [34]	55
Figure (10)	Decision-making Process – Problem-solving Model [35]	57
Figure (11)	Deductive and Inductive Approaches [249, 255]	109
Figure (12)	Research Plan	124
Figure (13)	Summary of Research Perspective	129
Figure (14)	Customers' voice rank	160
Figure (15)	Proposed Risk Management Model for Palestinian Wireless Operators	185

List of Tables

Table N0.	Title	Page
Table (1)	Four possible ways to deal with risk [15.	16
Table (2)	Risk analysis Methods [13]	29
Table (3)	Advantages and disadvantages associated with research approaches	111
Table (4)	Managerial position of each expert	133
Table (5)	Generated Codes and Final Themes	134
Table (6)	Respondents' Gender	155
Table (7)	Ages of Respondents	156
Table (8)	Respondents' Education	156
Table (9)	Respondents' Length of Usage	156
Table (10)	Customer care	157
Table (11)	Customers' Requirement Understanding	158
Table (12)	Customers' feedback	158
Table (13)	Customers' Expectations	159
Table (14)	Customers' voice rank	159
Table (15)	Customers Switching	161
Table (16)	Customers' satisfaction levels	161

List of Abbreviations and Definition of Terms

3G	Third Generation mobile network.
CL	Customer Loyalty.
IT	Information Technology
USB	Universal Serial Bus
ICT	Information and Communication Technologies
HSDC	High Speed Data Communication
SMS	Short Message Services
MMS	Multimedia Services
CRM	Customer Relation Management
EV	Earned Value
KPI	Key Performance Indicator
TPM	Technical Performance Measurement
RAP	Risk Assessment Process
RMP	Risk Management Plan
RMB	Risk Management Board
Probability	The likelihood of a specific outcome, measured by the ratio of specific outcomes to the total number of possible outcomes.
Risk Analysis	A systematic use of available information to determine how often specified events may occur and their likely consequences.
Risk Assessment	An evaluation of system assets and their vulnerabilities to threats, including potential losses that may result from threats.
Risk Avoidance	Not becoming involved in a risk situation by ceasing the activity or process
Risk Control	The provision of appropriate policies, procedures and standards of protection to avoid or minimise identified risks.
Risk Identification	The process of determining possible outcomes or occurrences associated with an activity, why these might occur and how.
Risk Management	The systematic application of policies and practices to the tasks of identifying, analysing, assessing, treating and monitoring risk.
Risk Retention	Retaining the responsibility for loss.
Risk Transfer	Shifting the responsibility for loss to another party.
Risk Treatment	Selection and implementation of appropriate management options for dealing with identified risk.

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Abstract

Risk management is becoming increasingly under the spot light in most businesses in the world. The good reputation of any organization or company is an important factor for success not only with customers but also with investors, business partners, and employees. Any business will exposure to a diverse range and different kinds of risks.

In this study, the researcher had explored related topics to risk and risk management. At the same time, the corresponding literature about that had been reviewed. After that, the researcher studied various types of Risks that affect Palestinian mobile communication companies and also, the world practices that manage the risk. Based on what the researcher had got from his study, he started practically to recognize the existing risk management strategies and procedures used in mobile communication companies in Palestine. The problem statement of this study was how to develop a model to control and manage associated risks within Palestinian wireless communication companies especially in a strong and dynamic competitive environment under Israeli occupation.

The study includes a mixed approach of research; semi structured interviews and questionnaires to study current risk management practice in Palestinian wireless operators. Interviews with experts in wireless communication field from Palestine were to understand and know from their experience about current activities that followed in managing risks; while questionnaires were to understand customers' requirements and their satisfaction level.

After analyzing the data, the researcher found that Palestinian wireless companies have in-house risk management activities. However, these activities are still immature. The benefit from all of previous issues is the development of a comprehensive model for risk management that suits the environment of Palestinian mobile communication companies. This outcome was the researcher's main goal. In this research, Jawwal and Wataniya were considered as a case study. This research is the first study of its kind in the wireless communication companies in Palestine and it highlighted the importance of risk management's process reviewing and periodically updating, database with professional documentation, effective customer feedback and applying related training courses for their employees. This Model will sustain competitive advantages and growth for these companies.

Chapter One

Introduction

1.0 Overview

1.2 Theoretical Background

1.3 Problem Statements

1.4 Research Question

1.5 Research Goal

1.6 Research Objectives

1.7 Research Outcomes

1.8 Research Methodology

1.9 Thesis Structures

Chapter One

Introduction

1.0 Overview:

The growth of mobile communications field during the past 15 years has been tremendous. Nowadays, in many parts of the world, practically everyone has a mobile phone. This development has come about thanks to the continuous improvement and enhancement for mobile products, networks and services, which all of them increased the number of people using mobiles to have an easy life and to benefit from wireless voice and data communications anywhere and anytime. However, as many other new and rapidly growing technologies, studying risk management represents an important issue when developing a business basement of mobile communication [1]. In this research, various types of the risk that may face wireless communication field had been studied by the researcher who explored the existing and available theories that define the risk and identify different types of risk that may affect this business. Also, risk management and the world practices that manage the risk will be explored. Many reasons encouraged the researcher to deal with this topic. One of these main reasons is the difficult environment that people live in Palestine which is known as an unstable one.

Palestine is an unstable region since a long time ago and witnessed many crises and wars during its history. The cumulative results of these

crises established an unstable environment that affected all aspects of life including economy as one of the main affected aspects. Economy in the Palestinian territories is going through crucial and difficult experiences that need to be treated directly by official ways. Thus, some strategic, short term plans and policies are required to be formed and some of correction actions are to be taken [2]. The Palestinian private sector was the only player in economic development during the absence of a national economic regulator. The main role of the Palestinian private sector has been established and formed by the private initiatives and investments that were responding to the local market requirements. This relationship between local market requirements and private sector investment created the core of a national economy. But with the absence of a national regulator, the Palestinian economy has been formed and grown without efficient efforts. Thus as a result, there are some oversaturated areas while others depend on imports to compensate for the shortage [3].

Although, Palestinian National Authority has many efforts to develop the national economy after its establishment in 1994; The Palestinian economy is still facing many problems and risk factors such as a difficult and an unstable environment and hard competition with Israeli and foreign suppliers [2]. Continuous evolution of threat, challenges and opportunities facing mobile operators worldwide are driving ongoing change in the business's risk strategies. So, they must ensure that their

understanding and management of risk keep pace during developing and implementing their strategies to sustain and create their value [1].

In Palestine, and due to difficult economical and political environments, risk associated with the investment is amplified. During the last decade, the Palestinian economy faced a wide business closure, due to the circumstances resulted during the second uprising "Intifada". However, the exceptional and difficult circumstances are not the only reason or driver of business Risk. There are many other reasons of risk such as managerial, economical, and financial factors…etc whose effect is inflated by the exceptional environment in Palestine. The mobile operators are considered as one of the main field of private sectors which affect the local market and national economy [2]. The ability of any company to capitalize its opportunities depends critically on its ability to understand and manage risk. Without effective risk management, no growth strategy will be truly sustainable [4].

1.2 Theoretical Background:

It is known very well nowadays that communication field is changed rapidly and changes of the market have increased types of service offered in the mobile market, in which the customer satisfaction issue is critical. Customer retention and attracting new customers have become urgent and timely concerns in wireless communication market because technology and mobile network penetration have both increased worldwide [5]. The service

which is offered must be produced with a high quality service because the quality factor is regarded as one of the few factors of service differentiation and competitive advantage which attracts new customers and contributes to the market share and that it is an important issue for customer retention [6].

It has been argued that service excellence enhances customers' inclination to buy more and again, to buy other services, to become less price sensitive, and to tell others about their positive experiences [7].

Mobile operators should focus more on satisfying current customers to prevent them from switching or being attracted by other operators for two main reasons. First, it costs operators a huge amount of money, time, and efforts to attract customers. For example, wireless operators need to advertise mobile offerings to target customers and stimulate them to be involved in a relationship with the mobile operator. Second, in general, mobile operators do good business and generate relatively high revenue through selling different products and services to both current customers and new ones [5]. Based on what has been discussed, it is realized that those wireless operators must deal with the risk and all factors that may act as a main risk in mobile communication field. Risk Management is required in many disciplines. Risk can be summarized as the combination of the probability of an event and its consequences. At any business, there is a potential for activities and outcomes that represent opportunities for benefit or threats to success [8]. Risk Management is increasingly recognized as being concerned with both aspects of the risk (positively and

negatively). Risk management is considered as an important topic during strategic management process of any organization. It is the process whereby top management identifies associated risks to their activities with the goal of achieving required benefit from each activity and integrated benefits from all business's activities [9].

1.3 Problem Statements:

Mobile communication services are changed rapidly and this fact enforces most of operators to grow up and to match these services to finally satisfy customer's need and to keep their standing up among crowd. Being less responsive to these rapid changes would probably be a main reason of customers' losing and detrimental to the company's market share [5, 10].

In Palestine, we have two-operators (Jawwal and Wataniya) that share Palestinian market. After the second operator (Wataniya) had started to provide its services, customer retention became the main goal for the two companies to maintain their market share.

If they don't consider good strategies to achieve that, they will be under the pressure of customers' losing risk. Because of that, effective Risk Management is a vital issue for both of them especially for Jawwal that has lost some of its customers due to the second operator's competition.

The result of customers' losing or switching could be a harmful matter on revenues and service continuity. Therefore, to control this risk

especially in a strong and dynamic competitive environment, service providers respond to consumers' switching cost by developing some related strategies. More importantly, time is found to be a kernel factor that influences customers' switching costs and lock-in [11]. They must do the best to gain the customers especially in very difficult environmental conditions. This can be achieved by an effective development of the risk management approach which will be the main result of this research.

1.4 Research Question:

How to manage effectively risks in Palestinian wireless communication companies?

1.5 Research Goal:

The main goal of this research is to develop a risk management model for the Mobile Communications in Palestine, when viewed from a business perspective.

1.6 Research Objectives:

The researcher's main aim from his study is to build up a comprehensive risk management model for mobile communication companies in Palestine, where many companies are still failing to focus sufficient attention and action on this topic of risk management [3]. To achieve this main goal, the following objectives will be achieved:

- To explore relevant existing theories and approaches related to risk and risk management and control, as they affect mobile businesses in general.
- To study and analyze the main risks that face the mobile companies in Palestine involving some of the following:

  - Immaturity of Customer's loyalty.

  - Constraints of New technology providing.

  - Difficult Environment conditions.

- To study and then assess the existing risk management practices in Palestinian communication companies. In this research Jawwal and Wataniya have been considered as a case study.

1.7 Research Outcomes:

The main expected outcomes of this research are:

- Defining the main types of risks that face the Palestinian mobile communication business.
- Recognizing the risk management practices related to the mobile communication business.
- Understanding current risk management approach in Palestinian mobile communication companies.
- Enhancing risk management practice in Palestinian mobile communication companies based on research outcomes.

- Realizing the main goal of the research which is providing an effective and a comprehensive risk management model that suits Palestinian wireless operators.

So, the importance of this research is the application of valuable outcome that mobile communication companies will gain from this research which is a comprehensive and developed model for risk management in mobile communication companies in Palestine.

1.8 Research Methodology:

Methodology of any research describes how the research will be conducted in terms of data collection and the ensuing analysis and then how the outcomes and results will be presented and communicated.

The researcher has conducted his research based on the following methodology.

The main sources to collect data will be a literature review, semi structured interviews and empirical survey. The main aim of literature review is to establish what previous researches have been conducted concerning the risk associated with mobile communication, to examine existing risk management models and to find out what authors have written about this topic of risk and risk management.

Qualitative and quantitative approaches will be applied in this research. The empirical survey will be addressed under the following

headings: Survey's objectives, design of questionnaire, survey and analytical methods. The objective of the survey and semi structured interviews is to extract from the respondents the information we need to build the research's results based on it.

1.9 Thesis Structures:

This thesis contains seven chapters including this introduction Chapter. Chapter two contains basic information about risk and risk management. Moreover, it explores many types of risks with some models for managing them. It will build the ground work for the remaining chapters. After understanding general and fundamental concepts of risk and risk management, chapter three, will provide some of main risk's factors which may affect mobile communication companies like immaturity in the customer's loyalty, technology constrains and an unstable environment conditions especially in Palestine. The methodology of this research will be explained in chapter four beside the tools that will be used during the data collection. Data design and structure will be prepared based on what have been reviewed in the literature and existing theories.

At chapters five and six; the collected data will be analysed and discussed. Results and conclusions with the recommendations will be provided at the final chapter which is number seven. The main outcome from all of that will be the development model of the risk management for mobile communication in Palestine. Thus the discussion of the future work

and possible additional consideration for this research will also be given together with the conclusion and recommendations at the end of this research in chapter seven. The outline of the thesis has summarised its structure and the way in which the research's problem has been investigated and identified. Thesis structures can be shown in figure 1.

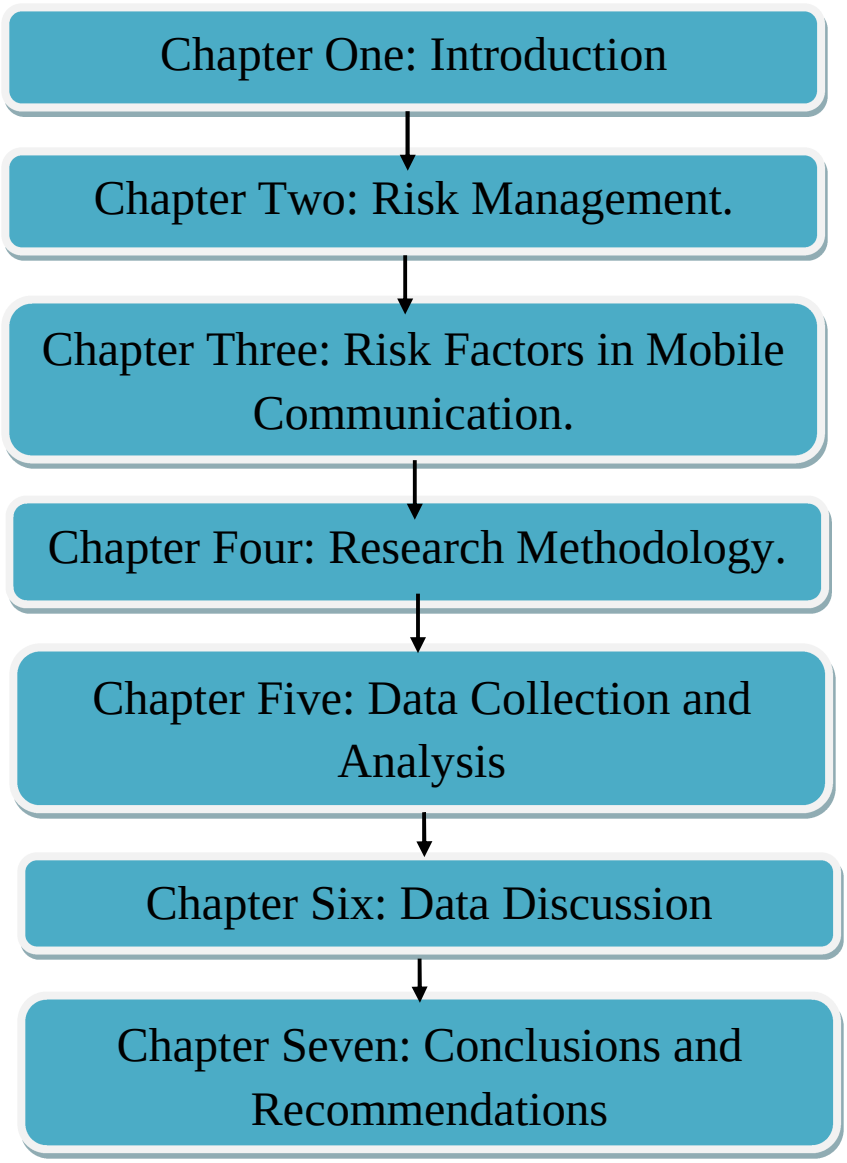


Figure (1): Thesis Outline.

Chapter Two

Risk Management

2.0 Overview:

2.1 What Is Risk?

2.2 Types of Risk:

2.3 Possible Ways to Deal with Risk:

2.4 What Is Risk Management?

2.5 Risk Management Process and activities:

2.6 Risk Management Techniques:

2.7 Risk Management outcomes:

2.8 Risk Management Goals:

2.9 Risk Management Benefits

2.10 Risk Management Models:

2.11 Risk Management Structure and Responsibilities

2.12 Risk Management Time Frame:

2.13 Risk Management Deliverables:

2.14 Summary

Chapter Two

Risk Management

2.0 Overview:

Risk Management is required in many disciplines. There is no specific risk management model dedicated to either industry or business. Rather each of them must adopt its own model. In this chapter, risk and risk management will be defined. Initial planning requires that the risk should be identified. Once identified, a risk level is applied. After that the process and activities of risk management will be explained. Moreover, many models for risk management will be presented in details. Types of risks and ways to deal with them will be addressed in this chapter.

2.1 What Is Risk?

Risk can be defined as the combination of the likelihood and consequences of an event. At any project or task, there is the potential for opportunities for benefit or threats to success [8]. However, risk is inherent in everything the organisation does. In many of the activities that the organisation does, it is something that we currently manage and control in different ways [12]. Risk is defined by Australia/New Zealand Standard for Risk Management (AS/NZS 4360:2004) as the possible impact of something happens on the objectives. Risk can be considered as a chance to either make a loss or a gain [13].

Other researchers describe risk as an assessment of the likelihood of some adverse event happening and the likely consequences of this event. Risk is integrated in the process and activities of the organisation and its service providers. The consequences of an adverse event may include an inability to match customer and stakeholder requirements, financial loss, political barriers, legal problems, operational disruption, and so on, it is important that management procedures, policies and practices are in place to minimize the organization’s exposure to risk [14].

The researcher agrees with the above comprehensive and complete definition of the risk. Simply, Risk is the possibility of incurring a loss. Some authors considered the business's mission when they provided their definition of the risk, so they defined it to be virtually anything that threatens or limits the ability of the business to achieve its mission.

Thus, risk can be defined as unexpected or unpredictable events such as loss of money through theft. Risk has the potential to damage the business, make it to pay cost, or in a worst case or scenario, cause it to be closed [15].

2.2 Types of Risk:

Generally, any business or company has exposure to a diverse range and to different types of risks. All of these types of risks can be classified in the following categories: [15]

- Economic and non-economic risks.
  - Economic risk which can result in financial loss.
  - Non-economic risk as Personal risk which can result in personal losses such as the health and personal well-being.
- Pure and speculative risks
  - Pure risk is a risk that presents the chance of loss but no opportunity for gain. A very bad Weather is an example about that.
  - Speculative risk offers the chance either to gain or to lose such as investing in a new business or stock market.
- Controllable and uncontrollable risks
  - A controllable risk is the risk that you can reduce or eliminate by your actions, like protecting yourself from theft by adding security systems.
  - Uncontrollable risk is the risk that cannot be reduced by your actions such as Hailstorm.
- Insurable and uninsurable risks.

Any business may have exposure to a diverse range of risks. This exposure includes professional risks, risks to our customers, stakeholders

and community services, political and legal risks, commercial risks, and risks associated with competition [12].

2.3 Possible Ways to Deal with Risk:

To face the risk in any business, companies can deal with it by one of the following four possible ways: [15]

- Avoid the risk.
- Transfer the risk.
- Mitigate the risk.
- Assume the risk.

Some explanations about each of them are shown in table 1:

Table (1): Four possible ways to deal with risk [15]

Method	Activity
Avoid	Choose not to be in the risky activity.
Transfer	Find another business to finish and complete the activity.
Mitigate	Take responsibility to eliminate the source of risk.
Assume	Complete the activity with full responsibility.

However, there is no integrated, formalised, and visible process to identify risk exposures across all actions or process and to provide an assurance that these exposures are controlled efficiently and any gaps are

rectified. The aim is to achieve best practice in controlling all risks to which the organisation is exposed. That can be achieved by identifying priority exposures, integrating appropriate risk management process and strategies into the business, monitoring and reviewing ongoing risk to account for changes in operations process and to enable us to provide very good decisions on risk controls [16]. More details about risk handling strategies will be explained in section 2.5.

2.4 What Is Risk Management?

Risk management is increasingly recognized as being concerned with both positive and negative aspects of the risk. Risk management is considered as a main issue during strategic management process of any organization. It is the process whereby organizations methodically address the risks associated to their activities with the goal of achieving sustained benefit within each activity and integrated benefit from all business's activities. The focus of good risk management is the identification and treatment of these risks. Its objective is to add maximum sustainable value to all the activities of the organization. It must be integrated into the culture among all staff in the organization with an effective policy and to be led by the most senior management. The strategy of risk management must be translated into tactical and operational objectives, and to give responsibility throughout the organization with each manager and employee responsible for the management of risk as part of their job description [8]. Other researchers define the risk management as the

discipline or system required to minimize the impact and cost to the organization, in dealing with risks to which we are exposed, in a manner consistent with gaining our business goals [15]. The organization's risk management policy statement sets out objectives for, and attitude to, managing risk. It is the reference paper by which all decisions in the handling of risk will be tested. While "Risk Management Plan" sets out how the organization’s risk management policy will be achieved. The development of framework for risk management in the organization is summarized in Figure 2. This risk management approach and process are based on what is outlined by the Australian Standard for risk management, AS/NZS 4360:1999 [12].

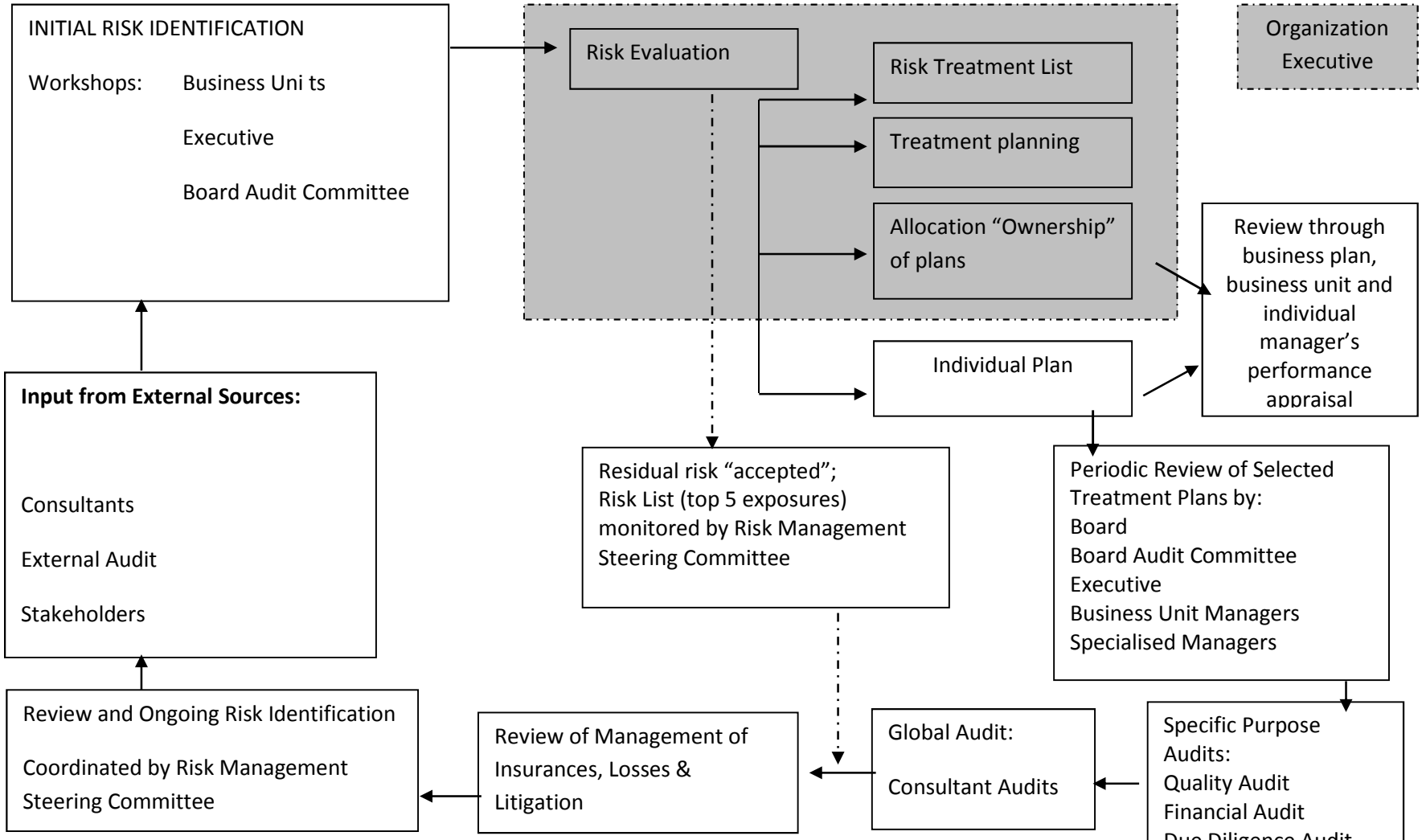


Figure (2): Frame work for developing Organization Risk Management Process [12]

Based on the previous figure; the researcher concludes that, risk management includes activities of systematic thinking about all possible risks, problems or disasters before they occur, and to set up procedures that will avoid the risk, or reduce its effects, or cope with its impact. It is basically to have a process where you can identify the risk with setting up a strategy to control or deal with it. It is also about making a realistic evaluation of the true level of risk [15]. Thus, Risk management is the process of applying suitable management controls to minimize the impacts of risk to an acceptable level. The principles of risk management can be directed both to control adverse outcomes with limiting them and achieving desirable ones. The process involves identifying, analyzing, evaluating, treating and monitoring risk in all levels and sections of the business [17]. Risk management is a main part of improving the business and services to be a leading one. It is a continuous process requiring awareness and proactive process from all the Organization's employees and outsourced service providers to limit and reduce the possibility and impact of accidents and losses, whether caused by the Organization or externally [12]. Also, Risk Management as other writers said about its activities, that involves adopting and applying a systematic process to identify, analyse, evaluate, control and monitor risk; Thus it will be reduced and maintained within an acceptable level. Risk Management is a business tool and a part of good management and good planning processes [7].

The main goal is to get best practice in controlling all the risks to which a company is exposed. To succeed in this goal, risk management standards must be created, maintained and improved in continuous basis. This will involve risk identification and risk assessment linked to practical and cost-effective risk control measures commensurate with the business [16]. An important and valid point to be taken into consideration, which is; The outcome of future events, whose exact outcome is unknown, must be concerned within risk management activities and to plan how to deal with these uncertainties. In general, outcomes are categorized as desirable or undesirable, and risk management is the art and science of planning, identifying, analyzing, treating, and monitoring future events to ensure desirable outcomes [14]. Thus, a good risk management process is proactive in nature and is not like crisis management process or problem solving, which is reactive [15].

Based on previous discussion, the researcher can summarize the definition of the risk management to be the act or practice of dealing with risk. It involves issues of risk identifying, analyzing, developing process of risk handling options and monitoring, to determine if and how risks have changed. Documenting risk management process is an important issue that will be explained in the next section. However, there is no way that we can eliminate all of the risks entirely, so we have to accept some levels of risk and learn to manage it.

2.5 Risk Management Process and activities:

Risk management is a core responsibility for all managers in all different sections in any business. Risk management can be considered as a process of identifying potential risk events and quantifying these in terms of probability of occurrence and its effects on business. Therefore, risk management activities cover risk evaluation, risk reaction development and risk strategy or control with risk identification [8]. Mature risk management activities will be properly integrated into the business planning process, operations and the management of your contractors and service providers. The scope of these activities will encompass: [12]

- Risk management training for all employees in different levels.
- Developing risk management standards.
- Cooperating in surveys for identifying and reducing risks.
- Improving risk control scheduling and helping to prioritise it in each of the Organisation's units.
- Reporting to the top management in the organisation on risk improvement and its compliance.

The effective management of risk enables you to maximize opportunities and achieve your objectives and outputs. Managing risk helps your organization to achieve its potential with the least interference from a

risk eventuating [13]. Thus, effective risk management requires a good reporting and review structure to ensure that risks are properly identified and assessed and that suitable controls and responses are in place. Depending on the size of the organization, the risk management function may vary in range from a single risk champion, a part time risk manager, to a full scale risk management directorate.

Roles of the risk management function include the following: [8]

- Having policy and strategy for risk management.
- Key person response for risk management at both of strategic and operational level.
- Building a culture within the company by appropriate education about risk management.
- Having and developing internal risk strategy and structures for all business levels.
- Establishing and assessing processes for risk management.
- Coordinating the multi different functional activities which advise on risk management issues in the company.
- Updating risk response processes, with contingency plans.
- Preparing reports on risk for the company's executive.

The above steps are summarized in figure 3 below.



Figure (3): The role of the Risk Management function [8]

Other researchers set the following steps to be involved in managing risk as in figure 4 below.



Figure (4): Involved steps in managing risk [13]

The steps involved in managing risk are explained in details as in the following points: [13]

A- Establish Goals and Context

Top management must understand the context in which the company or business operates to gain the effective risk management that will help to define the parameters within which the risks to outputs need to be monitored and then controlled [13]. The risk management context involves

and defines goals and objectives of the organization to which the risk management process is to be applied [18].

B- Identify risks

Identify the risks that most likely to impact the business outputs, together with their sources and impacts. It is important to identify carefully sources and impacts because the risk treatment strategies will be directed to impacts as a reactive action and to sources as a preventive action [13].

Criteria for setting risk management priorities are shown as follows [12].

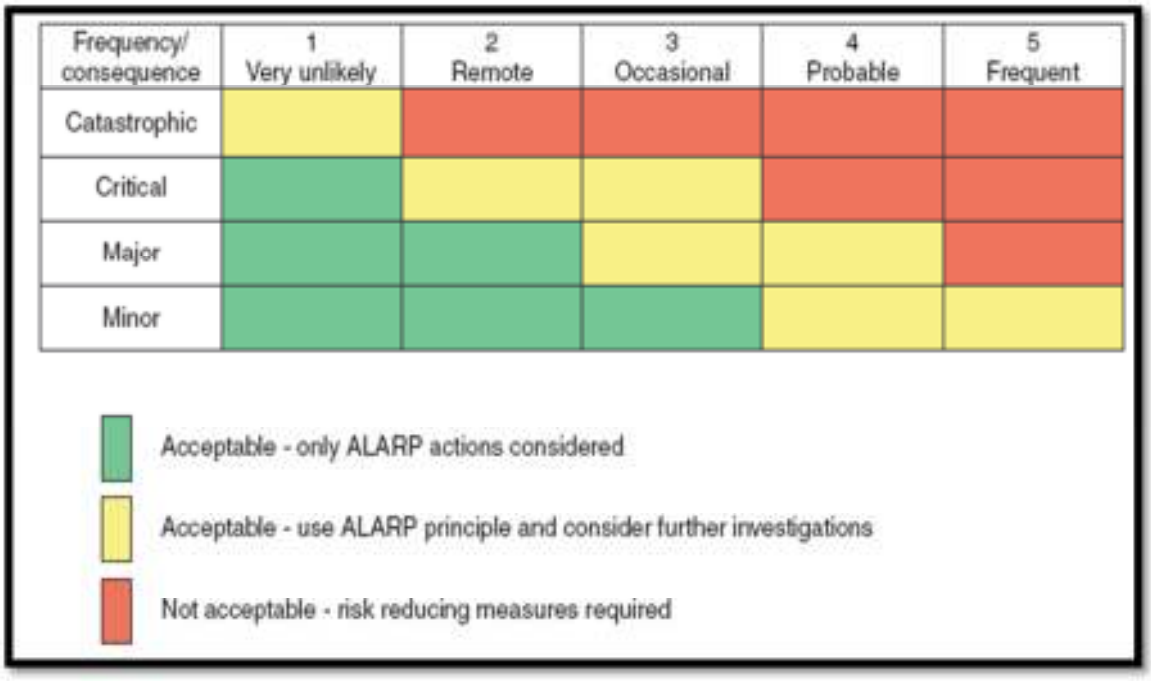
- Risks affecting the quality of performance or company's reputation.
- Risks affecting business relationships, its regulatory framework and service delivery obligations.
- Risks affecting the performance of the company against strategic priorities.
- Risks affecting the integrity of the company in general.
- Risks affecting the security, safety and health of the company's visitors to its buildings or offices.

C- Analyze risks

Define and list the existing controls that currently deal with the identified risks and evaluate their effectiveness. Based on this evaluation, analyze the risks in terms of probability and consequence [13].

Risk matrix can be used to assist in determining the level of probability and consequence related to the risk and the current risk level. By a risk matrix, the risk related to the various failure modes can be often presented. Associated risk to failure mode is a function of the frequency of the failure mode and the potential end severity of the failure mode [19].

The risk may be illustrated in a so-called risk matrix as in figure 5 below:



- **ALARP Means: As Low As Reasonably Practicable**

Figure (5): Risk Matrix [19]

Probability of a risk occurring can be broken into five different categories:

Frequent- Experienced continuously during the operation, occurs often.

Probable- Experienced often, occurs several times during the operation.

Occasional- Experienced sometimes, occurs sometimes.

Remote- Possibly experienced, occurrence is remote.

Unlikely- Improbable, not expected to occur

We break risk severity into four outcome categories:

Catastrophic- Death or permanent disability, major equipment damage.

Critical- Permanent partial disability, significant equipment damage.

Major- Minor injury lost workday, minor equipment damage.

Minor- First aid, little equipment damage.

There are various methods for determining the level of risk. It may be evaluated and ranked using qualitative, semi-quantitative or quantitative methods [13].

Table (2): Risk analysis Methods [13]

Method	Process
Qualitative	Involves using specific descriptive metrics to determine the extent of the consequences and the probability of an event.
Semi-quantitative	Involves assigning numbers to qualitative scales or metrics to determine the extent of the consequences and the probability of an event.
Quantitative	Involves using numerical values to determine the consequences and probability of events.

Usually, qualitative analysis is used when initiating a risk assessment process to establish an indicator to the level of risk present. However these measures should be adjusted to be suitable for the requirements of the risk assessment that have currently been conducted [13].

D- Evaluate risks

At this stage, risk will be determined whether its impact level is accepted or not. A person with the appropriate authority will take this decision. Monitoring and periodically reviewing the risk that determined as acceptable is a main issue to ensure it remains under control and accepted level. An unacceptable risk should be treated. However, documenting reasons of risk and its assessment is a useful activity to provide a record of the thinking that led to the decisions. Future risk assessment will be helped by this useful documentation.

E- Determine treatments for risks

Risk handling and treatment strategies involve:

- Stopping the activity that generates risk (avoiding).
- Reducing the risk occurrence probability.
- Mitigating the risk.
- Transferring the risk, and
- Sharing the risk.

Costs and effective factors must be taken into account when we select the preferred treatment options [13].

F- Monitor and report on the effectiveness of risk treatments

Monitoring the effectiveness of risk treatment options is required from the relevant manager and he has the responsibility to identify new risks as they arise and how to treat them accordingly [13]. Business risk registers must be formally reviewed and updated annually as a part of the planning process in the corporate. Although, in accordance with any significant changes to activities or appointments; more regular reviews and updates by Business, contract, project and program managers are encouraged. These formal reviews will be concurrent with, and part of, the business and budget planning process because of the complementary between these two processes. These formal annual reviews will include: [12]

- Identifying all “high” and “medium” level risks across the business as a whole through a summary ranking of risks by overall rating level. The purpose of that is to ensure that all are accounted for in the business broader planning and reviewing processes of its operations and services.

- A statement of the business’s risk performance during the last year showing the cost of risk, reduction in risk and the improvements made in risk controls based on the risk treatment options that have been done in accordance with the action Plans.

All of these processes (monitoring, review and updating of risk's list and action plans) will be coordinated and managed by the business’s risk management steering committee, in conjunction with internal audit, in line with their responsibilities under this plan.

Another writer argues in his book that risk management process must follow steps as below [16].

1. Risk Planning

Risk planning is the detailed statement of all actions for managing the risk. It is the process to develop, improve and document a comprehensive and interactive risk management strategy; determine ways which by risk management strategy will be executed; and plan for required resources. Risk planning is a continuous process that includes all risk

management process, with activities to identify, analyze, control, monitor and document the associated risk; the result will be the Risk Management Plan (RMP).

Planning begins by providing risk management strategies with documenting them. Early actions will be made to establish the objective and assign responsibilities for some areas, describe the evaluation process and procedures to follow up the controls options. RMP is considered as a road map that tells the staff how to get from where the business is today to where they want the business to be in the future. Providing the necessary information is the key to writing a good RMP. By this information, the business team will know the goals of the risk management activities. Because RMP is a road map, it may be specific in some areas, such as the assignment of responsibilities for special managers, and general in other areas to allow each one of users to adopt their suitable way to proceed.

2. Risk Assessment

In this step, risk will be identified and analyzed to be then controlled. Risk identification is the issue by which, managers can examine the business functions in general and each critical technical process to identify and document the associated risk. Risk analysis is a technical and systematic process to examine the already identified risks, filter and isolate their causes, determine the relationship between risks, and express the impact in terms of probability and consequence of occurrence or failure.

Risk assessment is an early step of risk management. It identifies, analyzes and quantifies potential business hazard in terms of likelihood and consequences, and possibly other considerations like time to impact. All that is a key input to many subsequent risk management actions. Risk assessment process is often considered as a difficult and time-consuming part of the risk management process.

Because there are no quick answers or shortcuts to assist evaluators in assessing risk; many tools are available to be used but none are totally suitable for any business risk and are often meaning nothing if the user does not understand how to apply them or interpret the results. Even risk assessment is a complex process but it is one of the most important steps of the risk management process because the caliber and quality of assessments can largely affect on business outcomes. Risk identification begins by synthesizing and understanding the business's risk issues. Manager should examine and identify business issues by reducing them to a level of detail that helps an evaluator to understand the significance of any risk and identify its causes. This is a practical way of addressing many of potential risks that often occur and face us when acquisition business.

Risk ratings are an indication to the level of the potential impact of risks on a business. These ratings include a measure of the likelihood of an event or action occurring and the consequences of that event and are often expressed as low, moderate, and high. Frequency of occurrence, time

sensitivity, and interdependence between risk issues, can also be noted and used either directly or indirectly in the rating process. Based on a structured risk rating approach with relevant expert opinion and experience, risks can be prioritized. Risk ratings help to identify issues requiring priority management and to identify the areas that should be reported inside and outside the business. Thus, it is important that the ratings should be described and shaped as accurately as possible.

3. Risk Handling:

It is called also risk management strategies. Strategy can be defined as process by which the organization can link the business management with its external relationships. These relationships involve suppliers, customers and other competitors with taken in consideration the economic and social environment in which the business operates [20]. Risk handling means all the process of identification, evaluation, selection, and options of implementation in order to set risk at acceptable levels based on business's objectives. This includes in specific on what, when, who is responsible about the issue be done; and what are its cost and schedule. The evaluators who assess risk should begin the process to identify and develop handling options and approaches to report to the business manager, who will select the appropriate one(s) for implementation.

The risk handling phase must be compatible with the RMP and any additional guidance. The business manager provides the important part of

risk handling involves reviewing, refining and selecting the most suitable handling options and specific approaches for selected risk issues (often those with medium or higher risk levels).

Evaluators who assess selected risk handling options may use the following criteria as a starting point for this task [16]:

- Does it meet the user's needs? And can be feasibly implemented.
- Does it effectively reduce business risk to an acceptable level?
- Is the option affordable in term of required resources?
- Does it affect the overall business schedule? And is time available to implement the selected option?
- What is the impact on the business's technical performance due to implementing this risk option?

Risk handling strategies include: assumption, avoidance, control, and transfer. Often the control option is called mitigation and it is commonly used in aerospace and business, it should not automatically be chosen. All four options should be evaluated to choose the best one for each risk issue.

3.1 Risk Assumption (Accept):

In some circumstances, the option would be to accept the risk as a part of business. Therefore, Risk assumption (Accept) is an acknowledgment that a particular risk is existing and to know the decision to accept the associated level of risk, without having any special efforts to control it. However, various risk assumption decisions may cause some of the side effects and unexpected problems as a result of them; so, a general cost and schedule reserve may be set aside to deal with any of these problems. This risk handling option recognizes that not all identified risks warrant special handling; as such, it is suitable for the low risk situations.

The key to achieve risk assumption successfully is twofold [18]:

- Identify the required resources to overcome a risk, with some of specific management actions (as example, retesting) that may considered.
- Ensure that important administrative process is taken to identify a management reserve to accomplish those management actions, thus when we decide to accept the risk, we need normally to develop in advance a contingency plan to reduce effects of the risk. At the same time, the contingency budget that will include allowances for resources, money and time must be established and developed to cater for the occurrence as either a known or even as an unknown risk.

The following cases must be presented when any company decides to accept the risk [21]:

- When the risk be unspecified one.
- When the risk be actively desired.
- When its effects are not a major.
- The consequences of avoiding the risk are not accepted.
- The avoidance is meaningless.

3.2 Risk Avoidance:

Risk avoidance means some changes to be taken in the consideration to reduce risk to an acceptable level. These changes involve a change in the concept, requirements, specifications, and/or practices related to the business. According to other writers, risk can be avoided by changing the plan to eliminate the risk or condition that causes the potential risk [22]. Simply stated, it eliminates the sources of high or medium risk and replaces them with a lower risk solution. Risk avoidance may also be used in the development phase when results of the test indicate that some requirements cannot be met, or when we face some of over budget state [16].

3.3 Risk Control (Mitigation):

This option does not attempt to eliminate the source of the risk but to find out how to reduce or mitigate the risk. Risk can be mitigated or treated by: reducing the likelihood and/or the consequence of its occurrence in the business [22]. The selected approach must give an optimal mix among the candidate approaches of risk reduction, schedule impact, and cost effectiveness. A summary of some common risk control approaches is shown below: [16]

- **Alternative design** which is a backup design option to use a lower risk approach.
- **Demonstration events** are pointers or indicators in the business or a company that inform us if risks are being successfully reduced.
- **Design of experiments** is an engineering tool that identifies the design with its sensitive and critical factors, therefore they are considered potentially as a medium or higher risk, to achieve a particular user need.
- **Early prototyping** is used to build and test prototypes early in the development stage of the system.
- **Incremental development** is to build and initiate the design with the intent of upgrading parts in the future.

- **Process proofing** is to select manufacturing and support processes that are critical to achieve system requirements and outcomes.
- **Test-analyze-and-fix (TAAF)** is to have a period of dedicated testing to identify deficiencies in a design and then to have the correction action.

3.4 Risk Transfer:

Risk transfer may reallocate risk from one part of the system to another during the concept of development and design processes, thereby reducing the overall system risk, or redistributing risks between all parties (the government, the prime contractor and government agencies) or between members themselves in the contractor team. Risk transfer is a form of risk sharing and not risk elimination, and it may affect cost objectives [16].

When you consider sharing the risk, this means that portions of the risk are allocated to different parties, for example, to partners or associates. Risk sharing differs somewhat from risk transfer in that not all of the risk is transferred to a third party, but still part of the cost of the risk is retained by the organization itself [22].

Other authors suggest that, risk should be transferred from the operator to others and to consider that as a key method to be used in the management of risk. They further state that the transferring of risks to

insurance companies is regarded as the main method in managing the risk in operation at present [23]. In some cases risk transfer may concentrate risk activities in one field of the design. This allows the risk's manager s to focus the attention and resources on that area. An example of risk transfer includes the use of warranties, insurance, and similar agreements [16].

4. Resource Allocation:

Risk handling and implementing strategies have broad cost implications. The magnitude of these costs depends on the environment the company operates in. Risk Management Board (RMB) should give the approval on funding of handling options and the agreement on specific approaches. Also, it must be a part of the process that establishes activities cost, performance, and schedule objectives in the business. The selected handling option and approach for each selected risk issue should be involved in the business's acquisition strategy. Thus, the cost and schedule impacts can be identified and included in the plan of the business and integrated master schedule, respectively.

5. Risk Monitoring:

Risk monitoring is the process that systematically tracks and evaluates the performance of risk handling activities against established metrics throughout the required process. It provides inputs to update risk handling strategies. Additional risk handling options and approaches may be developed based on monitoring results. These results may also help in

updating the existing risk handling approaches, and reanalyzing known risks. In some cases monitoring results may also be used to define new risks and revise some aspects of risk planning in organization. The key to the risk monitoring process is to establish a performance, cost and schedule management indicators which help in evaluating the business status by managers and other key personnel. Indicators should be designed to provide early alarming of potential problems to allow fast management actions. Risk monitoring is not a problem-solving technique, but rather; it is a proactive technique to have main and real information on the progress to date in reducing risks to acceptable levels. Some techniques for risk monitoring that can be used in a business are included in the following [16]:

- Earned value (EV) which uses standard cost/schedule formula to assess a business's cost performance and give a pointer to the schedule performance. Thus, organization can by that determine if risk handling actions are achieving their planned results.

- Technical performance measurement (TPM) is a product design evaluation, which evaluates the values of important and primary performance parameters of the existing design as affected by risk handling process. That evaluation occurs through engineering analysis and tests.

Finally, to get an effective monitoring for the performance of selected risk handling approaches and developing new risk assessments, organization needs to have a good-defined test and evaluation process. This is often considered a key factor in risk monitoring process.

6. Risk Management Documentation and Communication:

Risk documentation is recording, keeping, and reporting all of evaluations. Also, it is to handle analysis and plans, and at the same time monitoring the results. It includes all plans and reports to the managers and decision authorities in the organization. Accurate reporting procedures that properly communicate data, plans, results, and other relevant information are an important factor for successful risk management activities. At the stage of risk management strategy planning and before contract award, organization normally, defines procedures for documentation and reporting; but these procedures may be added or updated during contract execution and that will be accepted if and only if the efforts remain within the objective of the contract or are previously approved as part of a contract change agreement.

Some important reasons for having sound risk management documentation include the following: [16]

- It helps in the business risk assessments because the documentation is a good baseline for that.

- It tends to ensure a more comprehensive risk evaluation than using less formal documentation.
- It represents a reference for monitoring risk handling activities and ensuring the results.
- It is considered as a management tool to be used during the execution of the activities in the business, including permitting a more objective assessment of how the extra funds or potential budget cuts should be allocated.
- It is good background material for new employee in this field.

It is a meaningless value to do risk management functions if you cannot be properly shared the generated information with participants both outside and within the business. As stated by the National Research Council: "Risk communication is an interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management. Successful risk communication does not guarantee that risk management decisions will maximize general welfare; it only ensures that decision makers will understand what is known about the implementations for welfare and the available options" [14].

The researcher agrees with some authors who said that, fraud and integrity risks are to be considered as part of the overall risk management process and activities as they form a subset of each agency's business risks. Organization should follow the same methodology used to evaluate any other kind of risk. Fraud risks should also be considered in the risk management plans that are already prepared for some specific actions, procurements, programs and contracts [13]. The important concept in risk management is the awareness and continuous study with good knowledge of wide risk areas. Organization must stay aware of changes in all circumstances which include economy, competitors' actions, and technology with keeping continuous collection and reviewing customer information which may include complaints and requests [15]. After applying suitable risk management actions, organization can categorize risks that affect the business into 3-main groups based on its state after these actions [12]:

- **Residual Risk** = the level of risk that remains after all risk treatment measures have been taken.
- **Under Action** = a plan in place showing Action to be done, Action officer, Resource needs and cost with Timing targets.
- **Controlled** = reasonable confirmation that existing risk controls satisfy the achievement of the Organization’s risk management goals and will continue to keep the risk at an accepted level.

However, the way in which each business implements its risk management activities or process is up to the business manager. As a guide, it is suggested that at any business, it is a must to establish a risk management committee with keeping their meetings at least quarterly, with formal agenda and minutes. Satisfactory risk management is achieved when good training has been completed properly by all relevant personnel, when risk evaluation for all important issues and risk exposures has been concluded, and when assurance reports have been delivered from all Business Unit operations and key contractors [12].

2.6 Risk Management Techniques:

Many techniques may be used by the key person like a manager during managing the risk. Generally, each business adopts its suitable techniques based on its operation process and activities. Some of these techniques are described below.

2.6.1 What If Technique:

It is one of six risk analysis options from Occupational Safety and Health Administration (OSHA)'s Process Safety Standard [24]. Key person of risk management starts with a specific segment or part of the system and ask a 'what if ' type of question. It is very good to use a map or draw the operation process on paper for all participants to view it when discussing these processes [24, 25]. For example, during a wheeled vehicle convoy operation the segments may be as below:

1. Storing Area (Starting point).
2. Movement process.
3. Refuel/Maintain during the motion activity.
4. Arrival to the Destination.

In each of these segments, questions could be:

- What if elements have been attacked?
- What if a vehicle had an accident?
- What if a vehicle didn’t start?

By obtaining all the available input from those concerned questions in this operation, Key person can develop countermeasures to the risks and do some of the contingency plans [24].

2.6.2 Next Accident Assessment:

It is a tool that can be used to identify personnel who are at an increased risk of doing or causing an accident. The system can be used at any time before or during a major process. It doesn't require much or high training level.

Before any activity, ask the team who will do that activity about the individual who is most likely to cause the next problem or accident?

Explain the reason of your question that you are seeking for causes of problems which normally occur as a result of the human element.

This is the time to be frank with your employees as you informally discuss the upcoming process or activity. "OK; who is going to cause the next accident and why?" [26, 27].

2.7 Risk Management outcomes:

Any business or Organization is committed to the management of risk to continue in protecting and keeping its [12]:

- Consumers or users who represent its market share.
- Environment situation.
- Employees' skills.
- Competitive advantages and good quality of service.
- Intellectual property and assets.
- Contractual and legal obligations.
- Organization's reputation and image among citizens in the society.

The final objective of risk management is to provide a report about risk status and risk control's activities with an assessment/assurance report of major risks in the organization to be sent to the top management. Figure 6 below illustrates that.



Figure (6): Desired outcomes of the Organization's Risk Management [12]

Challenge on the long term is to infuse risk management approach into culture, daily organization's operations and those of contractors and organization partners.

Involvement of everyone and their support is important to effective outcomes. The goal of the risk management is to set out plans to confirm that risk management is considered and included in the organization and its operations, and to produce guidelines for the implementation [7, 28].

2.8 Risk Management Goals:

The goals behind considering and integrating the risk management into the business are threefold [12]:

- To provide a confirmation that the business has identified its potential-risk exposures and has taken actions to properly manage them.

- To ensure that areas where risk management is needed are included in the business planning processes.

- To integrate the various risks control measures that the business already has by establishing a process across the business for that issue.

2.9 Risk Management Benefits:

Risk Management will assist all involved staff to achieve the business's objectives by [12]:

- Integrating all measures for risk control that the business currently has and uses into one holistic view of what the business is doing to reduce its risk exposures. By that single view, priorities and any gaps that need to be addressed will be shown.

- Implementing a formalised, visible and consistent process for managing the risk. Thus, supporting continuous improvement in the business which will produce more effective results.

- Incorporating risk management strategies into planning and administrative processes which will help in more structured and effective planning and management.
- Building on current risk management strategies such as administrative, operational and quality management actions.
- Encouraging all employees and their managers to think about risk and its management in their daily work and in the forward planning process.

Risk management must be applied to all activities in the organization and also to the delivered activities by external service providers; because that will help the organization to [12, 29]:

- Ensure a very high standard of the quality and reliability of services and other business outputs.
- Ensure that services will be delivered within cost and time; and also meet customers' requirements.
- Protect staff, information and all other business's assets.
- Comply with all legal issues in relation to fields of risk.

2.10 Risk Management Models:

It is important to define the risks associated with related business and to select appropriate methods to manage these risks. Anyway, before developing any kind of a model for risk management, it is important that the differences and/or the combination of strategies, processes and models are known. There are different versions of the definition of these aspects of model derivative. They include the following [30]:

- Processes which are a series of actions or natural occurrences that directed at a specific aim to produce change or development.
- Strategy that may defined as a carefully plan of action to achieve the objective. The art of developing or carrying out a plan.
- Model which is described as a term used throughout business and it is defined as a representation of a system that has been constructed to have an opportunity to understand and study the different aspects of that system or even the system itself.

The difference between models and theories is that models are representations whereas theories are explanations. "*A model is not an explanation; it is only the structure and/or function of a second object or process. A model is a result of taking the structure or function of one object or process and using that as a model for the second. When the substance,*

either physical or conceptual, of the second object or process has been projected on to the first, a model has been constructed" [30].

Some authors refer to the models as processes. So, they define a process as a series of actions linked together or interact with one another as the strategy unfolds against the environment. This can then be depicted in a model.

Here, the term model will be used to refer to a process used to depict the existing situation and could be expected to react to the hazards threatening the situation or the system. Therefore, it can be concluded that a risk management model is a representation of the process that is used in managing the risk [31].

2.10.1 Analysis of Existing Risk Management Models:

Many models are used in business to manage the risk, particularly in the project management environment. The models used to manage the risk in the project management environment tend to be more general and thus, they are applicable to a variety of circumstances depending on the type of business. These models are not specific for special kind of business. Therefore they appear to be more adaptable and can easily be changed to be suitable for what business wants in mobile communication field. As will be seen, these models do not differ significantly from one another, but some of them have limitations that others do not and may not be suitable for the mobile communication field. A brief discussion of some of the models that

the researcher study and explore in the literature will be shown below in an attempt to establish their suitability for use in the mobile communication field.

A. Valsamakis, Vivian & du Toit

They consider that risk management is an ongoing process, not to be seen in isolation or as a single event. Figure 7 demonstrates that these process start with the identification of the risk and evaluation being the important feature to identify for risk control, before finally providing financially for the risk consequences. To manage a risk and before any type of risk management process can be considered and put into action, risk must first be recognized and/or identified. This part of the process is the most important function of the risk management activities and should be approached in a structured, systematic and well-managed manner [32].

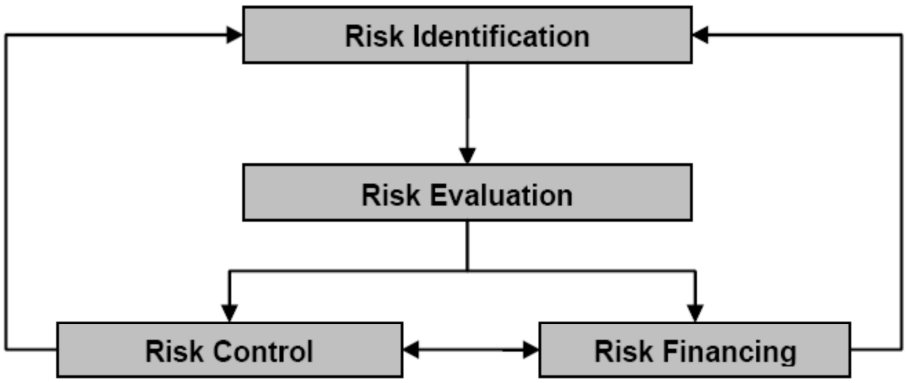


Figure (7): Risk Management Model (Valsamakis, Vivian & du Toit) [32]

This model may be suitable for managing risks that cause to financial losses. This model doesn't consider the two important steps of implementation, and of evaluation with review for all process.

B. Burke's Model

This model shows logically as in figure 8, the sequence of the outlined process and how each part integrates with the whole. Objectives will define what business is prepared to accept - or not - in terms of risk impact. Together with risk monitoring and control, risk identification, quantification and response, establish and form the plan for risk management which will be formal documents with details that are containing how the business will manage and respond to identified risk [33].

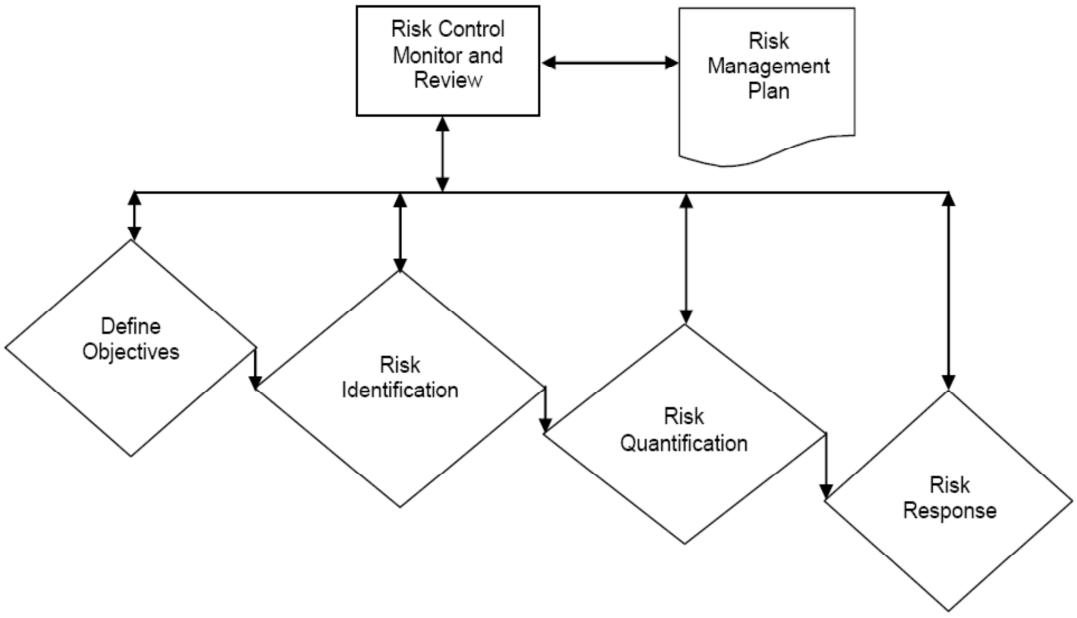


Figure (8): Risk Management Model (Burke) [33]

C. The Gray & Larson Model

This model describes a process similar to that of Burke's model. This is shown in Figure 9. Although this model has again four steps in the process, each is a little different to those of Burke's model.

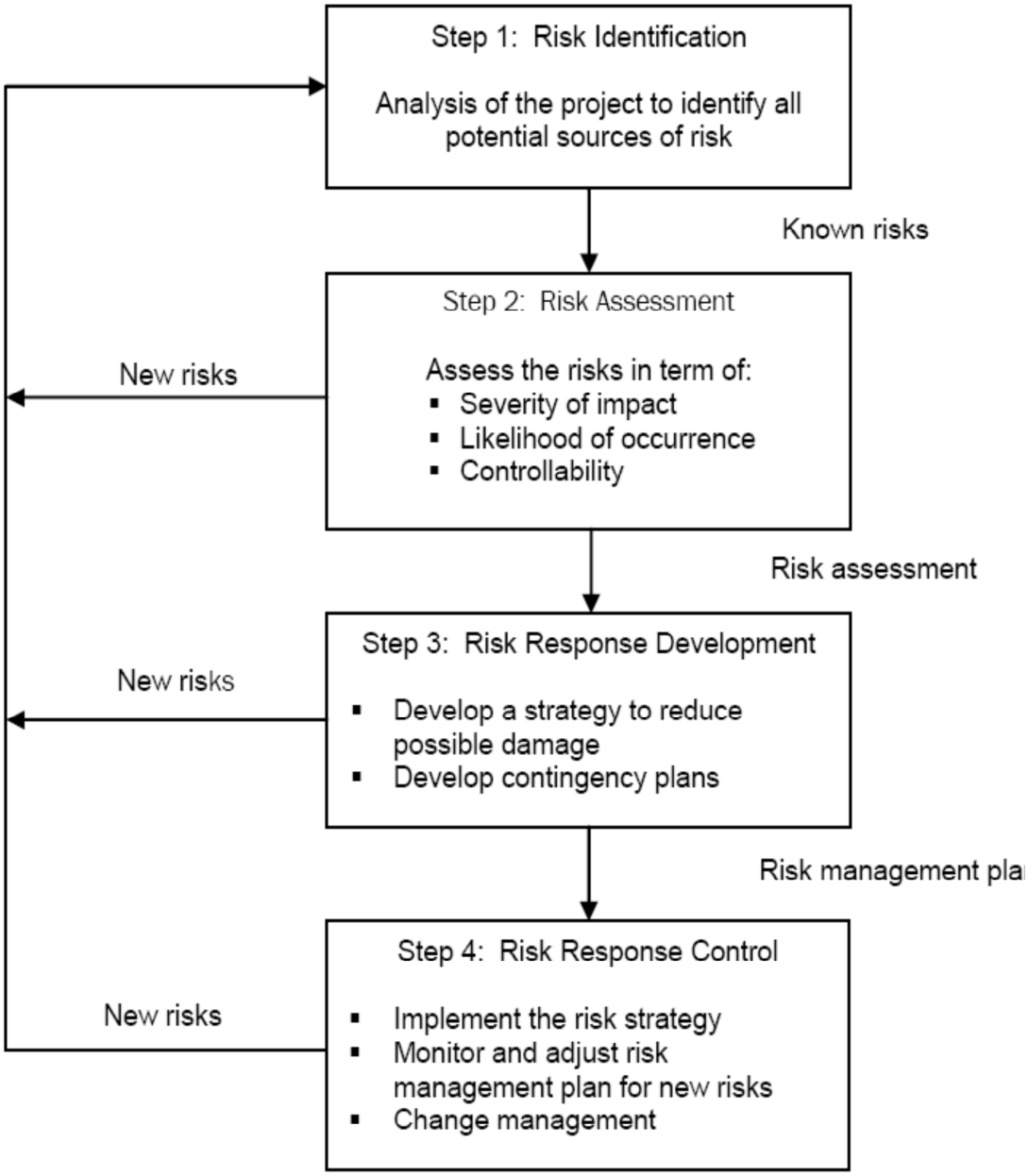


Figure (9): The Risk Management Model (Gray & Larson) [34]

The main difference between this model and Burke's model is the missing of setting of an objective in this model. So, the outcome benefits from risk management will be unknown. A further important difference between the two models is that the risk control is applied together with the first step in Burke's model but it is in the last step and just a part of the implementation of risk responses in the Gray & Larson model. This model explains what needs to take place at each step of the process [34].

2.10.2 Problem Solving Methodology to Support Risk Management:

The risk management process described in the previous models in section 2.10.1 can be supported by the decision-making or problem-solving processes.

Successful decisions will be taken based on a well-constructed process, which includes situation analysis and planning. Decision making can be described as a systematic and logical approach for identifying the problem, developing alternative situations and then selecting the most appropriate solution for that.

The decision-making or problem-solving model is shown in Figure 10. However, these steps will not guarantee good decisions, but will help and increase the opportunity to have a successful decision making [35].

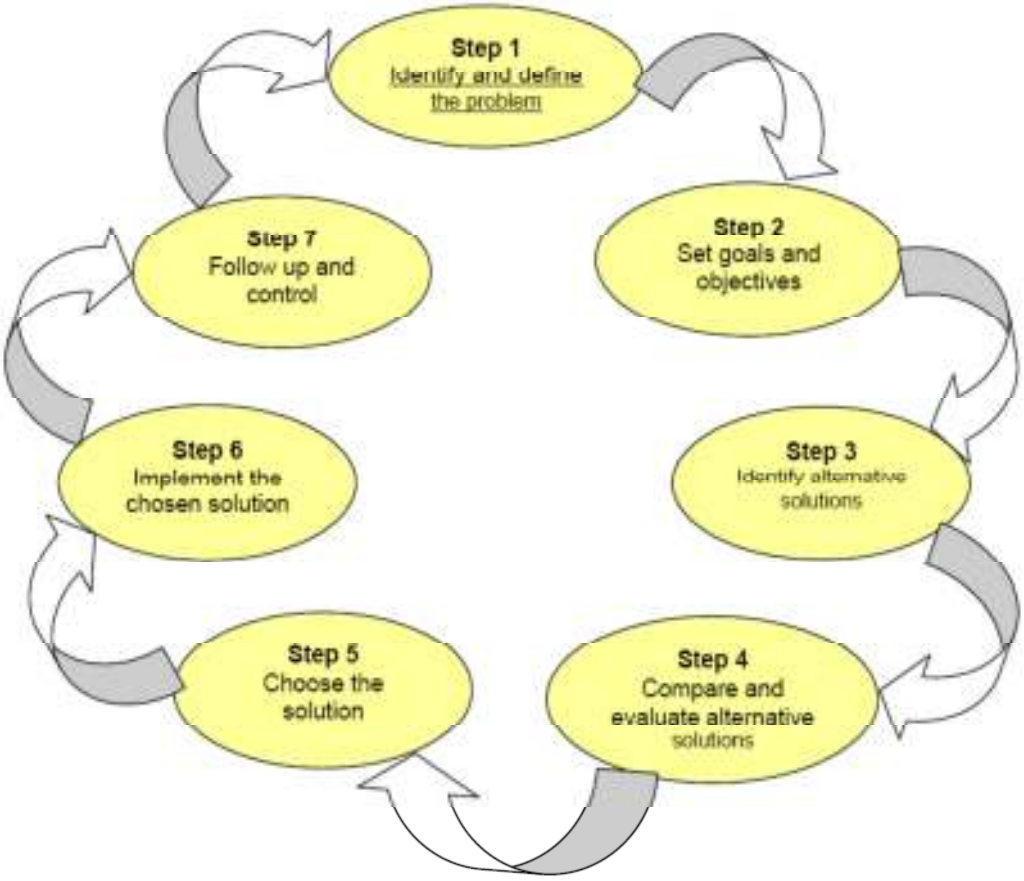


Figure (10): Decision-making Process – Problem-solving Model [35]

Step 1. Define and Diagnose the Problem

This step contains three steps. Firstly, internal and external environmental forces must be analyzed and a decision made as to which of these forces contribute to the problem(s). Secondly, the real reasons of the problem then required to be established to avoid confusing them with the symptoms. Finally, the diagnosis must be related back to the existing or to the wanted objectives.

Step 2. Set Goals and Objectives

Once the problem has been listed and defined, some specific goals for controlling and reducing the problem must be set. These must include the selection of ideal results and outcomes, including who will do what, and when that must be done. Timeframe of implementation is a vital issue in this topic.

Step 3. Search for Alternative Solutions

Generally, at any process, alternative ways must be discussed to achieve the desired objectives. One creative process which could be used to find alternative solutions is a brainstorming.

Step 4. Compare and Evaluate Alternative Solutions

The advantages and disadvantages of each of the alternatives must be considered during evaluating and comparing these alternatives. Quality, feasibility, acceptability, ethical impacts and costs are the criteria to consider when comparing the alternatives.

Step 5. Choose from Among Alternative Solutions

At this step, the least attractive solution must be eliminated and then continuing the process, until the most favorable solution is retained. During this selection process, the impact of the solution on the total system must be considered and not only on the problem area.

Step 6. Implement the Solution Selected

The chosen solution is the best solution among alternatives, but this doesn't mean that the chosen one will be successful. To assist with successful implementation of the selected solution, it must be planned very well and those affected should be consulted to ensure and confirm the acceptance and co-operation.

Step 7. Follow-up and Control (Monitor)

It is an important issue for managing all of the previous steps to continuously monitoring the activities of the implementation, evaluating the results and, preparing, if needed, the corrective actions.

2.11 Risk Management Structure and Responsibilities:

Every member in the staff at any level in the company or business must understand and feel his responsibility for risk management within his span of control, for promoting the application of risk management by contractors, and helping in the identification of risks that could affect the organisation as a whole [14, 36]. Business unit managers are accountable for ensuring that risks with a "high" overall rating are managed properly through management process in the unit. Risks with a "medium" or lower level overall rating may be included in the unit risk management plan if appropriate, or, alternatively, managed as an operational issue through the relevant unit. The business unit manager is responsible also for monitoring

the risk management process and giving the approval on risk mitigation strategies and action plans as outlined in the risk control action plan for each unit in the business [9].

Each business unit will assign an officer to work as a central point for coordination and communication of risk identification, evaluation and awareness training and risk management assurance [37].

The organisation establishes a risk management steering committee which is responsible for [12, 38]:

- Co-ordinating the regular formal updating of organization risk treatment action plans.
- Maintaining data about organization risk and risk controls.
- Confirming and ensuring that all relevant risk sectors are taken in the consideration with including what emanate from the services of external providers and contractors;
- Analysis and reporting to the top management.
- Ensuring very good and proper linkages to the organisation's planning and budget processes.

This steering committee is approved from the organisation's business units to comprise representatives. The committee will nominate an officer to guide and encourage risk management throughout the business's

activities. The risk management function is the activity and issue directed by the organisation's board, facilitated by the risk management steering committee in the organization and followed up by all managers in all organization's departments as a core and main activity. The identification and review of potential risk sectors and regions within the organisation and the implementation of the organisation's risk management strategy will also be applied by internal audit with the approval and oversight of the board audit committee because it is also a subject of internal audit protocols [16, 14].

2.12 Risk Management Time Frame:

Firstly, all managers will receive a copy of the risk management plan including organisation’s policy and guidelines on risk management implementation and the organisation’s risk management action plan. Secondly, managers will take the time to discuss all of what they received about risk management plan with their staff to ensure that they are aware of the risk management process and to get their commitment for the risk management activities. Finally, the timeframe for further development and implementation of risk management within the business must be stated in a suitable way and then send it in detailed report to board for approval [12, 16 and 14].

2.13 Risk Management Deliverables:

At business, the risk management process involves two deliverables: [12, 39]

- A risk list that tabulates and summarises the potential risk exposures within the business operations, which are identified as significant or critical to service capability and overall objectives for the organization. This list of risk includes only risk exposures that classified more than "moderate" or "high" risk rating; and would have an impact on the organisation in general.
- A risk treatment action plan which contains the current status of risk controls in the business, and produces an action plan for the additional controls and risk handling options which are needed.

2.14 Summary:

Risk management is increasingly becoming a vital issue in most of the businesses nowadays. The aim of this chapter was, primarily, to re-visit the definitions of risk and risk management and to discuss these in some detail to provide a better understanding of the concepts. Also, the researcher explored and discussed various strategies to manage the risk. It was appropriate to explore a number of risk management models and processes and to determine their suitability for use. These aims were achieved by means of reviewing available literature sources relevant to the

research topic. Thus, based on what has been discussed and reviewed, Palestinian wireless operators should realize that they must deal with the risk and its factors, which may affect significantly the organization's objectives, to keep the successful progress in their activities and to maintain the good reputation for their companies.

Chapter Three

Risk Factors in Mobile Communication

3.0 Overview

3.1 Background

3.2 Customer loyalty

3.3 Customer Satisfaction

3.4 Customer Switching

3.5 Customer Retention

3.6 Perceived Service Quality

3.7 Customer relationship with Technology

3.8 Environmental Risk

3.9 Managerial consideration and Customer relation management (CRM)

3.10 Summary

Chapter Three

Risk Factors in Mobile Communication

3.0 Overview:

In Chapter one, it was explained that risk management involves risk identification, risk evaluation and risk control or strategy. This chapter enlarges this concept of risk management by identifying the related risks that face a mobile communication business and identifying the relevant measures that can be considered in preparation for the risk. Bad events generally have a negative impact on all businesses, and therefore on the mobile communication field too. These risks have to be identified and analyzed carefully [40].

This chapter will investigate relevant risks that face the mobile communication business under their respective headings and will discuss each of these risks with the intention of effects on the business. The research will investigate risks under the following headings: customer dissatisfaction (Low loyalty risk), nature (environmental risks) and in addition, technological risks. All of them will be discussed in separate sections in this chapter. Moreover this chapter aims to define factors that cause customers to switch their service provider. The results from some researches revealed that customer dissatisfaction plays the most important role in switching the service provider followed by perceived service quality while advertisement efforts plays the least important role [41].

Based on findings from literature review, it is concluded that the mobile providers concentrate on increasing the customer retention by satisfying them [40].

3.1 Background:

Undeniably, the wireless communication is changing radically. Today, communication is considered the nerve of the life. In today's changeable and competitive market place, mobile phone services are gaining popularity and importance all around the world. Mobile phone marketers are developing new strategies to take advantage of the potential customers while mobile usage is growing rapidly [42]. Communication companies, as others, are putting more intention for customer relationship management to increase customer loyalty and satisfaction [43].

Theoretically speaking, customers start to switch their service provider when they are not loyal and satisfied. Thus, forming a main risk for the service provider .The mobile phone service providers have to create new models and applications that would attract and retain consumers to remain competitive in the market place [44, 45]. Customer loyalty (CL) and satisfaction (CS) are important goals for mobile network operators on their way to superior economic success in the market [46].

Customer lost is a serious setback for any firm in terms of its present and future profits. In addition, the firm needs to invest resources in attracting new customers to replace the lost ones. The cost of acquiring new

customers is equal to five times than retaining an old one. Consequently, retaining the existing customers' base is much more attractive than searching for new ones [47]. Mobile business is very important and has increased since it has now entered all aspects of life, including health, education, business, and entertainment. Mobile phones devices can be described as "those telephones that are fully portable and not attached to a base unit operating on dedicated mobile phone networks, where revenue is generated by all voice and data transmissions originating from such mobile phones" [48] .

Over the last decade, the mobile field has passed through a wave of critically rapid changes in its structure, strategies, competition, techniques, and technological environment. All of that were a result of liberalization, globalization, and technological developments that are the main factors affecting economies in general and the mobile phone field in particular. These challenges reduce the ability of businesses to retain their customers [49]. The wireless communication sector has both "high customer turnover and high customer acquisition cost" [50]. Recently, this field has experienced growth in competition, which indicates the importance of retaining current customers [51]. After previous statements, customer concept definition is important to be understood.

The term customer is generally used to refer to the end-users of a product. Customers are a generic term referring to any person who gets a

service or product from some other person or company. Broadly, there are external and internal customers, where internal customers are the staff or employees and external customers are stakeholders of the company. Within the customer group, there are many of customer categories: clients, consumers, compliers, and constituents [52].

It is very important to identify the category of customer surveyed when reporting the result of customer satisfaction and loyalty. In this study the target customers are the individual consumers or users who subscribe to the services of any mobile communication networks in Palestine. In the following sections, customer loyalty, satisfaction and other related concepts will be explored to understand their main effect and associated risk on service providers.

3.2 Customer loyalty:

Customer relations have evolved since 1960s to be nowadays a customer relations department after it was previously regarded only as a customer complaints management section [53, 54]. Customer loyalty expresses the intended behavior related to the firm or its service which includes the possibility of future renewal of service contracts, how likely the customer is to give positive word-of-mouth, or the possibility to provide his voice [55]. So as cited; loyalty can be defined as "the degree to which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider,

and considers using only this provider when a need for this service arises"[56]. Thus, Loyalty is a desire to keep and maintain a valuable and important relationship with the customer [57].

However, some of the debates are centered round what customer loyalty actually is, as some authors' states, "Customer loyalty is a complex and multidimensional concept" [58]. Its complexity is reflected in the wide range of definitions among academic fields. Based on attitudes of the customer, the loyalty can be defined as a high level of commitment to re buy preferred products and services consistently in the future, regardless potential reasons that cause switching behavior [59]. In addition, it was reported that "complaint satisfaction has a strong effect on customer loyalty" and proposed that successful handling of a customer's complaint is a significant key for customer loyalty [60]. Therefore, a company must reduce the desire for customer defection by ensuring their loyalty born from effective complaint handling procedures [61]. Loyalty is perceived generally as having both of the following dimensions; behavioral and attitudinal.

Loyalty level is often measured by customer behaviors such as applying word-of mouth or purchasing frequently [62, 63]. Customer who attached to a brand and who will, when positively reinforced, buy that brand more often is viewed as a loyal customer based on attitudinal approach [62, 64]. It is assumed that customers who are behaviorally loyal

to their service provider show more favorable attitudes towards that provider, compared with its competitors. Anyway, in some cases, behavioral loyalty does not always reflect attitudinal loyalty, because there might be other factors (like, availability) which prevent customer switching cases [65, 66, and 67].

A study about the factors that affect customer loyalty set the focus on satisfaction of the customer and the switching barrier [63]. Customer satisfaction is positively influencing customer loyalty but according to some research, it is not always enough. Hence, these researchers recommend analyzing other potentially influential factors like the switching barrier [68]. In other words, the level of the customer loyalty can vary if the level of customer satisfaction is identical, depending on the magnitude of the switching barrier [68, 69, and 70]. Customer judgment is affected by his perception which finally results in his loyalty towards the product or services [70, 71]. The significance of customer loyalty is that it strongly relates to the company's strong future growth and continued survival [72].

So trying to retain and keep the current customers by increasing their value and loyalty should be framed in such a way to be the marketing strategy of the companies [72]. As a result, Customer loyalty has a positive effect on the repeat purchasing [59, 73, and 74].

3.2.1 Loyalty in Services Industries:

Some authors noted that loyalty is considered as a more important factor for services than for products [75]. Services loyalty is expressed as commitment behavior related to a service or company [76]. Loyalty in the services industries which include the mobile communication companies is defined as the assurance of a consistent and superior quality of their service [77]. Since services are heterogeneous and intangible, then most of customers perceive a higher risk in buying services than goods [75]. Developing and keeping customer loyalty, or establishing long-term relationships with consumers, is considered as the key to a company's growth and survival, particularly for services companies [78].

3.2.2 Factors affecting customer loyalty:

1. Satisfaction:

Several studies have confirmed the direct relation between satisfaction and loyalty; dissatisfied customers will switch to another vendor and satisfied customers become loyal [79].

2. Trustworthiness

In business studies, it has been found that trust is important for creating and keeping long-term relationships [80, 81]. Other authors argue that trust is a confidence in the face of risk. Trust does not predict only the quality of the provided service or talk about other features of that service

but it can also remove the uncertainty involved in purchasing certain product or service. So trust can build confidence among the consumers [82]. It is an important issue to look for the variables that can ensure the long-term customer commitment to their provider. One of these variables is trust [83]. Trust is found as one of the main factors for building relationship commitment and customer loyalty [57, 84, and 85].

Trust will reduce the perceived risk of using a service, it can also be considered as the consequence of positive evaluations of services that leads to the customer loyalty [86]. When a consumer trusts a firm, he or she will expect to increase satisfaction and loyalty towards that firm [87].

In general, if a customer does not trust his service provider based on some of past experience, he or she will be dissatisfied with that provider. Trust can reduce the risk facing a customer during the process of creating exchange relationships [84]. When customers trust the provider, they will use the service continually and also will recommend this service to others. Researchers found that trust will influence positively customer attitude or behavior intention in mobile communication companies [88, 89].

3. Image

According to the Belk's theory of extended self, persons define themselves by the possessions which they have, create or manage [90]. Image is defined as the perceptions of a company reflected in the associations held in customer mind [91].

In the literature of the service marketing, image is considered as a key factor in the overall evaluation of the service and the company [92, 93, and 94]. In another words, firm image is shown as the overall impression made in the memory of the people about a firm [95]. Thus, a company has to anticipate the consumer's cognition in different ways to get its company image [96].

In some research, it is found that customers may be loyal to a brand because it has a good image among other customers [97]. Thus to increase customer loyalty, company image is considered as a key factor and it is also found that the image has a direct and positive impact on customer loyalty [98]. Image of the Corporate depends on the behavioral and physical attributes of the corporate, such as its name of products/services, and the communication skills of the employees [99].Even though consumers have no information about the firm but they can have this information from other sources like advertisements or the word of mouth which will finally influence the process of forming the image about the corporate.

The brand image is very important for a company as much as a service itself. So a company must develop its brand image to attract more and new customers. This marketing strategy should be directed to improve the image of that company and the image of its services. While customer loyalty is considered as an important factor for generating a reliable and

strong customer base; these customers must be profitable for long-term success of the company [100]. Previous research on loyalty has supported that if customer loyalty is achieved, profits will follow [101, 102].

Other cited advantages of customer loyalty as follow: [102, 103]

- Costs to serve the loyal customers are lower than others;
- Loyal customers will pay higher costs for a set of products; and
- They will act as marketing agents for the company by their word of mouth.

To measure loyalty; two factors are used: switching probability and positive word-of-mouth [104]. Based on that, customers will be asked if they say good things about their service provider, and if they have any tendency to switch the operator?

3.2.3 E-Loyalty:

The impact of supporting the customer on his/her loyalty is widely discussed in the scientific community. But the effect of online customer service to build E-loyalty is not clarified, although, many positive results are found in this topic [105]. Some authors state that supporting the customer will not give high or any impact on customer loyalty [106]. Other researchers argue that the delivery of high customer values as service and dealing with complaints or exceed his/her expectations by what is more

important to him\her are the key to loyal customer [107, 108]. Satisfying customer with the website depends on the quality of the website [109]. Skills of the Internet are up to the experience of customers and familiarity of the websites is important [110]. Fulfilling the customer's requirements (satisfaction, joy, and value) to build the loyalty and prevent the switching behavior by understanding the switching risks; must be managed to create loyalty in e-commerce.

The term e-loyalty is defined as "the customer’s favorable attitude toward an electronic business resulting in repeat buying behavior" [111]. Serving and supporting customers is what makes the difference because competing products are often very similar to each other [112]. The computerization of answering questions, providing service, selling additional products and solving problems in electronic commerce should be always connected to the website [113]. Satisfied customers by the website without any perceived problems will recommend the e-commerce site they are satisfied with [114]. When consumers complain about the service, they give the firm a chance to confirm its trustworthiness and thus influence the loyalty of the customer [115]. The problem is that, some of dissatisfied consumers defect rather they complain [116]. Based on that Complaints in the web site or online environment can be seen as a market feedback instrument, which help to understand and know the causes for dissatisfaction [117, 118].

3.3 Customer Satisfaction:

Generally, customer satisfaction means customer feeling based on the state of fulfillment, and customer judgment of that state [59]. Loyalty concept is crucial to business growth [119] because the cost of attracting new customers is more expensive than keeping old customers [120]. Therefore, business should try to increase their share of the market by maximizing customer retention [121].

Many of the studies have been conducted to understand customer satisfaction and loyalty in mobile services companies [46, 72, 122, 123, and 124]. Most of them emphasize that customer loyalty and its factors are important for the success of mobile services companies. Perceived customer value and service quality are supported as drivers of customer satisfaction [125]. Satisfaction is always considered as a main input for customer loyalty. However, satisfied users may switch to another firm in low switching costs cases [126]. Degree of the commitment is relatively tied to the level of fulfillment of provided mobile service options by previous or current offers. Thus, fulfilled services affect customer satisfaction which as a result affects the commitment and the loyalty [127]. So, loyalty and commitment are related concepts [128]. Non-loyal customer is much more influenced by negative information about the services or products [129]. Therefore, customer loyalty must be controlled and considered during risk management process to keep the organization's

main goals because losing customers is considered as a big risk that may face the mobile operators [130].

Others researchers defined and described satisfaction based on quality term as "post consumption experience which compares perceived quality with expected quality" [131]. Satisfaction is also defined as "An evaluation of an emotion, reflecting the degree to which the customer believes the service provider evokes positive feelings" [132]. A considerable number of operators in the mobile phone field are losing their current customers bases at rates more than 30% [133]. Thus, satisfaction occurs with the enhancement of the feeling by the customers when they compare their perception of the performance of products and services in relation to their expectations and desires [134].

Many benefits exist for any company from satisfying the customer. It increases customer loyalty, prevents customer switching, lowers sensitivity of customers' price, reduces the costs of failed marketing and of new customer attracting, reduces operating costs due to increasing number of customers, and enhances reputation of the company [135].

Service quality has been measured in earlier studies on mobile telecommunication services, by call quality, mobile devices, pricing structure, and value-added services, simplicity of procedures, and customer complaint handling and support [46, 136, and 137]. Some researchers have previously supported that satisfaction is the core factor of long-term

customer behavior. Thus, ongoing satisfaction is required for companies over time in order to keep the current customer [138]. The probability of repeat purchases and contract renewal is high when the level of fulfillment exceeds the level of expectations. As an example, when a subscriber wants to renew his or her mobile contract, he or she usually decides based on satisfaction to differentiate between current and other competitive mobile operators [63]. Many researchers pointed out that, in order to gain a subscriber's loyalty in the mobile field, the operator needs to increase the satisfaction by improving the service quality [139]. Perceived value, quality and trust are found to have a significant positive impact on the loyalty of the customers [140]. Managers in any company must take in their consideration both of the overall customers' satisfaction and the competitiveness of the company's services and products. All of that are to maintain the competitive advantages of the company [141]. Moreover, "It is widely acknowledged that customer satisfaction is a function of the relationship between customer expectations and experience, that it is dependent upon value and that it is formed continuously" [142]. Dissatisfied customer will either simply switch their provider, or, they will voice their issues first. For those customers who first voice their concerns, "the likelihood of the relationship ending falls" [143]. If customers are not satisfied with their current company and they still with that company due to negative barriers such as high switching costs, then, they may engage in "company-focused sabotage such as negative word-of-mouth". Conversely,

positive barriers like good relationships with the company's staff can act as a more effective barrier to defection. So, the company must be careful because a High-staff turnover or losing key employees could result in customer defection if the relation to those employees is stronger than to the company itself.

The question which becomes important is, what companies can do to reduce customer defections? Companies should take a holistic approach [143]. Management should understand "the whole picture of an ending process to realize and to decide which actions are necessary to keep customers or regain lost customers" [143].

According to many authors, customer loyalty is the ultimate goal of customer satisfaction measurement [131]. Customer satisfaction acts as an antecedent of customer loyalty. It prevents customer churn and strengthens retention, thereby forming an important cause of customer loyalty [71]. The relationship between customer satisfaction and customer loyalty is not always a linear one, although it forms a positive relationship [135, 144].

3.4 Customer Switching:

Switching is a customer behavior which differs based on the consumers' satisfactory level with the providers or companies. Switching behavior can be defined as the process of being loyal to one service provider and switching to another one, due to dissatisfaction or any other problems. There are many factors which affect the customers in switching

their service from one provider to another. The cost which the customer pay during the switching process is called switching cost [145].

Switching cost is the cost that is incurred by buyers for vanishing transaction relationships and starting a new relation. As other writer defined switching cost as a onetime cost that a customer facing when switching from one service provider to another [146]. In the telecommunication field, there are a lot of critical costs that must be taken in the consideration when switching. These involves the costs of informing friends and business associates of the change, the cost of the new lines, cost associated with stopping long standing relationships with the old service provider, cost of understanding any new process and procedures in dealing with the new provider and cost of finding new provider with comparable or higher value than the old provider. Also, as a part from these, there is a psychological and time effort to face an uncertainty from the new service provider [63, 147].

Other researchers, however, had a different discussion. There is an argument in the literature of the advantages of switching cost which prevents customers from switching their service provider [148, 149]. The result of customers' switching could be significant on profits and service continuity. Therefore, to control and reduce the level of consumers switching to another brand in a dynamic competitive environment, companies develop strategies to react with customers' switching cost [150,

151]. Trust is also found to increase the commitment of customer which makes their probability to switch weaker [84].

Switching costs in some cases, serve suppliers in many aspects. Switching costs are increasingly considered as a means of keeping customers in relationships regardless of the customers' satisfaction [152, 153]. Thus, companies must increase the awareness of customers regarding different utilitarian punishment-related factors like switching cost. The reason of that is to keep them into a relationship [154]. Dealing with and solving the customers' complaint is important in the mobile phone sector. Service in mobile phone is considered as a personal service where customers choose, evaluate, and seek feedback from others carefully [155]. When a customer receives negative feedback from others regarding a mobile phone service, switching behavior may occur. Operators should deal carefully and directly with consumers' complaints to reduce the chances of the negative behavior that may occur accordingly, such as bad-mouthing, complaints to others, and switching to the competitors [156, 157].

In this research, Jawwal and Wataniya operators will be asked about their responsibility and strategies to handle the complaints from the customer and if they develop their ways and process to follow and achieve this topic. One of the researchers argues that switching cost is a factor of many factors that affect the relationship between customer satisfaction and

customer loyalty [135]. In another research, it is noted that high switching costs and barriers or lack of good alternatives might keep the customers loyal [55]. Within a direct effect on customer loyalty, switching cost gives many advantages for service providers. As an example, it minimizes customers' sensitivity to price and increases his or her satisfaction of the product brand [135]. Increasing a customer's perceptions of the risks in switching to rival brands, and the difficulty in using the alternative service, will increase the likelihood that the customer keeps the relationship with the current service provider [139, 158].

A study investigates factors that cause mobile phone customers to change from being loyal to switching, such as price, service quality, switching costs, etc. Among those factors, price is the most important factor which affects the customers to switch loyalties to another provider [88, 159]. The effect of losing customers or their switching could be detriment on revenues and service continuity. Therefore, to control and overcome this risk in a high dynamic competitive environment, service providers should develop many strategies to respond to consumers' switching cost [11]. Losing ownership of the customer was ranked as the number one risk in 2009 and retains its top ranking in 2010 [160].

3.4.1 The switching barrier:

The switching barrier involves the difficulty that a dissatisfied customer faces during switching to another provider, or the social, financial

and psychological burden felt by a consumer when switching to another brand [135]. Therefore, the higher the switching barrier, the more customers are forced to remain with their current provider. Switching cost includes time, money and psychological cost, and is defined as a perceived risk [63]. If a firm offers differentiated services that are not easy for competitors to imitate or to provide with equivalents, customers tend to remain with the existing company [161]. When customers switch their service provider, they will perceive the burden of risks which becomes a barrier of switching that influences customer loyalty. Many researchers and authors believe that customer retention is a more effective business strategy that a company must to have than continuously trying to attract new customers in order to compensate the defecting customers [162]. Switching costs could be considered to predict consumers' behavior in the mobile communication field. Customer satisfaction has positive effects on the customer retention. Thus, top management may need to emphasize total satisfaction program in an attempt to keep customers' loyalty in the competitive communication market. Managers therefore, should significantly consider dimensions of customer satisfaction and switching barriers when they are making plans or applying efforts in customer retention [163].

3.5 Customer Retention:

Customer retention is essential for companies in the service field and will subsequently receive a great deal of attention in the coming future [164]. Customer retention is concerned with maintaining the established relationship in a business between a customer and a supplier. That can be achieved in two ways. The first is by extending the contract with the supplier by the customer over a specified period of time or by subsequent purchases. The second is by customer intention to make future purchases from the provider [165, 166].

Customers are considered a real asset to companies [167]. In the mobile phone sector, Customer retention becomes an essential phenomenon because this sector has a noticeable change, growth, and competition both domestically and globally. A considerable number of operators in the mobile phone field are losing their current customer bases at rates more than 30% despite having different relationship strategies to retain current customers [168, 169, and 133]. The findings of many scholars, who studied the effect of service quality on customer retention, reveal that there is a direct correlation between both of service quality and customer retention [170]. Mobile operators cannot allow losing customers; because this loss would lead to lose the profit, and ultimately the failure of businesses which considered as a critical risk factor faces mobile communication sector [171, 172]. As a result of increased competition, changing and shifting business

strategies and scopes from attracting new customers to retain current customers is the key strategy for the success [173]. A relationship is established not just to solve specific problems between two parties but to encompass activities which have a continual concern for the long term by taking advantage of short-term perspectives [174], while such relationship is available, it is not necessarily always long-term [175]. Therefore, the customer retention concept has emerged in order to increase the profit of the firm and to minimize both costs and customer switching in the long run which will lead to reduce the risk associated to this field [176]. So firms must have an extra effort to improve customer retention rates, especially in highly challenging and changeable markets such as mobile phone sectors that reached high levels of market penetration recently within a short time [177]. So, based on that, customer retention is considered as an important issue in Palestine, which witnessed a critical environment and a difficult economy state. Retaining customers in highly competitive and difficult environments is crucial for any firm's survival because losing customers will represent more than the loss of the next sale. Also, keeping current customers causes the cost of selling to him lower than the cost of selling to new ones [139]. The main finding from studying the maintenance of customer relationships highlighted that customers' willingness to recommend the brand to their relatives or friends is the main goal of customer commitment to the organization [178].

Main risks that face mobile operators in this high competitive business environment are how to attract new subscribers and keeping the existing ones, especially young subscribers [179]. Based on that, the researcher will ask both operators Jawwal and Wataniya in Palestine the following question during the interview with them; while they are facing like this risk which is a major loss of current customers, do they have good business strategies to overcome this risk and to generate good cash flow or profits? Mobile operators should concentrate more on satisfying existing customers to prevent their switching or being attracted by others for two main reasons. First, attracting customers costs operators a lot of money, time, and efforts. Second, mobile operators in general, do good business and have high revenue through selling different services and products to both of existing and new customers [5]. Based on the previous explanation, mobile operators are in a race to acquire new customers and retain their current ones by providing new mobile accessories, products, technology, data and services continuously. Thus, to keep customers, operators need a continuous monitoring because keeping customers leads to more cash flow and less operational and advertising costs.

A large number of wireless field studies especially in mobile service providers, indicate that most operators are still losing customers at a significant rate [137, 180]. At the same time, some authors illustrated that trust, satisfaction, and service quality are factors which enhance quality relationship generally and customer retention specifically [47, 132,

181,182, and 183]. In this research about mobile risk management, it is noted that; as mobile network penetration and technology have both increased, attracting new consumers and maximizing customer retention have become a very important issue for mobile operators [72, 179].

Some scholars have used "Loyalty", to explain customer's behavior, as a parallel concept to mean retained customers; firms always aim to keep satisfying customers in the long term [184]. Service companies have recognized that customer retention and loyalty are the end goals. They have to continue the businesses on the basis of sustainable long relationships with their customers.

Many authors reported that committed consumers and clients have a strong intention to stay in a long relationship with a company, which, in turn, affects the subscribers' intention to cancel or extend the contractual relationship with their mobile phone supplier [46]. Satisfying customers is a direct determining factor in customer loyalty, which, in turn, is a main determinant factor in customer retention [185], while others discussed that customer satisfaction is a main factor for the customer retention but it is not enough [186]. Because, switching barriers have a direct effect on the customer retention based on many existing evidences [137, 187]. Therefore, the switching barrier with the interaction with the customer satisfaction can have an influence on customer retention.

The main challenges that may face mobile operators in today's competitive and dynamic business are how to attract new clients and keep current ones, especially young customers or users [179].

3.6 Perceived Service Quality:

Service is defined as an intangible benefit or activity that can be offered from one party to another without resulting in the ownership between them [188]. Service quality described as "the extent of discrepancy between the customers' expectations and perceptions" [76]. The service which offered from any provider must be a high quality service because the quality is regarded as a key factor for service differentiation and competitive advantage which attracts new consumers and increases to the market share. The quality of the provided service is an important means for customer retention [189]. Mobile providers must create customer commitment by providing service to their customers with high good quality [137].

In a world where more products and services are becoming alike, there is a question to ask which is, how do your products or services stand out from the crowd? Differentiation is the only answer. It has been discussed that service excellence enhances consumer's behavior to buy again, and more, to buy other services, to become less price sensitive, and to finally tell others about his or her positive experiences. Empirically several studies have supported this assumption and those consistently find a

positive relation between service quality and customers' behavioral intentions [189, 190, 191, and 192]. All of that lead us to this fact; nowadays dynamic and high competitive business, the innovation strategies, ideas and approaches are critical. Firms at the leading edge of innovation are likely to succeed and gain potential market share in the long run. Many of researches and studies describe how consumers changed from being passive recipients of product or service development in the 1970s and 1980s towards demanding to play a more active role nowadays. Recently, consumers are co-creators of values because they are considered as a source of competence.

A six-sigma strategy recognizes that each customer is unique and each one today wants exactly what he or she wants, where he or she wants it, when he or she wants it, at the price he or she wants [193]. Building strong relationships with consumers is essential to companies' survival. This requires enhancing the relationship quality, which involves trust, satisfaction, and commitment [183, 194]. Service providers must provide a high level of service quality to compete with other competitors [195, 196, and 197].

An article investigated the relationship between emotional satisfaction with the key concepts of service quality and customer loyalty. Results revealed that service quality is positively associated with emotional satisfaction, which is as a result positively associated with the customer

loyalty. The findings of many scholars, who studied the effect of service quality on customer retention, reveal that there is a direct correlation between both of service quality and customer retention [170, 183, 198, 199, and 200]. Several researchers have highlighted how it is important to manage the service quality; because a firm could by that differentiate its service offerings to deliver the best quality among its competitors [201, 202, and 203]. This would give firms competitive advantages which cause more sales and profits by encouraging current customers to purchase again in order to achieve long-term success and survival. As a conclusion, many researchers agree on the significant correlation between service quality and customer retention. So, understanding customers' expectations is the starting process of managing service quality, because it is a perception related concept. This means that companies need to measure their quality service that meets and exceeds customers' expectations by asking them directly.

In this research, customers will be asked about the quality of the service provided by Jawwal and Wataniya and if that quality encourages them to keep or switch based on its level. The literature on the relationship between service quality and customer satisfaction is ambiguous [204]. It is found that, three competing theories about the relationship between customer satisfaction and service quality: satisfaction is a necessity and a result of service quality, service quality is the predictor of satisfaction, and both of constructs are interchangeable [87]. Moreover, it found that service

quality is strongly and significantly related to customer satisfaction [205]. Many of empirical studies revealed that a higher level of service quality was related to a higher customer satisfaction level [206, 207, 208, and 209]. High service quality may retain existing customers, and attract new customers, and even pull customers away from competitors whose service quality is perceived to be lower [210].

For this research and during the survey, customers will also be asked if the quality level will affect their satisfaction, retention and even their switching to another operator.

3.7 Customer relationship with Technology:

Technology is a body of knowledge that is applied practically to solve problems that deal with industries and commerce and to create tools, build up skills and extract or collect materials. New services, products, and processes are themselves the output of developing technology [211].

Customers nowadays are very familiar with mobile communication since it was introduced in 1996. So, they acquire a good knowledge of mobile phone suppliers' characteristics and the offers which affect their decision-making; making proper suitable choices will encourage those customers to become involved in a long-term relationship. In addition, mobile users understand very well the different services provided by operators, such as multimedia messaging service and roaming, and suppliers' product offerings such as Universal Serial Bus (USB), and

personal mobile devices [212]. Also, providing different kinds of mobile services with suitable levels of the mobile technology are considered the highest challenge for mobile operators. That is because serving users in the long term means producing high-quality services, which is seen as a key factor and approach for success in today's competitive business environment [76].

Interesting in new technologies like internet services on the mobile phone is a noticeable behavior of the people. Besides, mobile companies always add new technologies in their services and as a result, more and more customers are buying mobile phones [130]. The hasty growth and development in information technology (I.T) and mobile devices has made the service markets of mobile phone more and more competitive. In order to sustain the present growth rate in the telecom sector, Jawwal and Wataniya need to take significant steps not only to retain their customers but also to attract new ones [213].

As a result of high growth and development of information and communication technologies (ICT) due to high demand from consumers, mobile communication services is now shifting from voice to a combination of high-speed data communication (HSDC) and multimedia. At saturation point of number of customers, creating and securing new customers are difficult and costly in terms of marketing. So, the best marketing strategy for the future is to try to keep existing customers by

increasing customer loyalty and his or her value. Earlier studies proposed that customer loyalty is the main reason of a company's sustained competitive edge, and is a crucial factor in companies' growth and performance [70, 71].

Innovation is considered as the lifeblood of the mobile field. In fact, mobile phones became the dominant internet access device in 2013. Thus, there were around 1.82 billion smart phones and browser-equipped devices, besides 1.78 billion PCs. [72]. Mobile operators need to apply a massive investment in higher-capacity infrastructure, investing effectively in networks remains as a big challenge and significant risk area. It is a necessity to have the right infrastructure to keep customers and increasing the market share. The risks associated by the new and constantly evolving technology will affect network technology choices.

The time of technology usage decisions is also challenging, and brings both opportunities and risks [160]. It is an important and beneficial that mobile operators remain up-to-date with the latest technological systems and services specially that related to the internet and to data services.

Business is rapidly changing the method of its process. The internet provides many opportunities for new businesses. It is a cost effective way for attracting new customers and having new markets. Based on that, Firm can use the concept of E- commerce that can minimize the time in setting

up a business, with no need for offices or business premises. Because simply, firm can design a website, and host it by an Internet service provider. Thus business has existence even it has no physical location and offices [214].

However, technology has its own list of risks. Some researcher pointed out that risks exist in any business and also there is generally a possibility that some things will not work out as they are supposed to and planned. It is a wide knowledge that risks must be considered in business's activities [215].

It is an important and a significant issue for management, relative to operating security systems; they often underestimate the need for database security.

Researchers revealed that, database must be secured and need high privileges to be access to ovoid the associated risks as an example: damaging or corrupting the database by wrong usage [216] .The area of specialized expertise for a company is considered a core competency for it. It is a collective learning of a company, especially on how to coordinate the production skills and integrate many types of technologies [217]. Core competence concept describes how the firm can gain competitive advantages; thus, it is a valuable resource that a company must own, it needs constant and continuous development and improving to be difficult

for rivals to imitate [218]. Innovation opens up the organization to more opportunities and to wider markets [219, 220].

The key benefit of used technology in services is the possibility to personalize and customize [109]. This will make customers have a feeling of being special and thus, he or she will be targeted directly by a company. The advantages of technology use regarding loyalty for a company is that huge amount of data about the behavior of the customer are collected on the fly (click stream, purchasing behavior). Data offers the opportunity to know a good information about the customers in general and use this knowledge for building customer long time relationship with the loyalty and thus avoiding the risk that may come from this factor [221]. Technological changes have moved competition from price or core service to value-added services [222].

Recently, customers can go shopping with more choices, knowledge, and value that may be brought by new technology to customers' daily life. Usage of mobile phones has extended now from voice communications to the internet. In addition to voice and short message services (SMS), Mobile operators also offer email, internet browsing, multimedia services (MMS), video calls and rings tones [223, 224].

3.8 Environmental Risk:

Environmental risks involve social, competitive, cultural, economical conditions and natural disasters that influence the life [225].

Palestine is a country that does not have dangerous natural disasters such as heavily snow-capped mountains, volcanoes, glaciers or severe tornadoes, but at the same time it has a main disaster called "ENTEFADA". Palestine is an unstable region since a long time ago and has witnessed many crises and wars during its history. The cumulative results of those crises established an unstable environment that affected all fields of life including economy as one of the main affected fields. Economy in the Palestinian territories is going through crucial and difficult experiences that need to be treated directly by official ways. Thus, some strategic, short term plans and policies are required to be formed and some of correction actions to be taken [2].

Even that all efforts from the Palestinian National Authority to develop the national economy after its establishment in 1994; The Palestinian economy is still facing many problems and risk factors such as difficult and an unstable environment and hard competition with Israeli and foreign suppliers [3]. Also in Palestine, we have two operators (Jawwal and Wataniya) that share the market and they must do the best to gain the customers especially in a very difficult environment conditions. This can be achieved by effective development of the risk management approach which will be the main result from this research.

After the second operator (Wataniya) had started to apply its services, customer retention became the main goal for the two companies

we study (Jawwal and Wataniya) to maintain their market share. If they don't consider good strategies to achieve that, they will be under the pressure of the risk. Because of that, effective risk management is a vital issue for both of them especially for Jawwal that has lost some of its customers due to the second operator's competition.

Environmental risk can also be defined as arising when significant changes occur in the fundamental assumptions that drive a company’s overall objectives and strategies due to any external forces [226]. When there are more competitors then it is likely that one or more will minimize prices to obtain a larger market share.

This is a common action when the competitors in the field are of a similar size and there is no clear market [227]. Businesses frequently do not consider the reality of the competitions; they believe that the marketplace contains no close substitutes, or that their success and growth will not attract other competitors [228]. On other hand, core competence differentiates the firm from its competitors through its capability, competencies, and resource and therefore producing its competitive advantage [229]. Companies compete for profit, customers, and market share with their products and services that satisfy customers' needs. Core competencies are professional combination of knowledge, proprietary technologies, special skills, information and unique operating methods that give the product or service which customers want to buy [230]. Risk is a

key factor when it touches economic forecasts. Formal economic forecasting depends on how the economy works. When businesses establish an economic forecast, it is important that realistic assumptions are made, as these will give an effect on the future of the business.

Moreover, during studying environmental risks, political risk must be considered as a part of them. Political risk can be defined as the probability that political factors will cause significant changes in a business environment that negatively affect the profit and other objectives of that business [231]. Countries containing more than one ethnic nationality have a higher level of political risk. Unfortunately, many national leaders either do not understand, or ignore the fact that political serenity, not cultural attractions, forms the first and central requirement of business [232]. To ensure the performance of the company, it must monitor its plans and strategies against changing circumstances and update its plans accordingly [233]. The competitive environment has further intensified because of the entry of new competitors into the market [130].

3.9 Managerial consideration and Customer relation management (CRM)

Discussion below aims to provide recommendations for managers to implement. This section outlines concepts and theories that managers can consider in context with the company.

CRM initiatives have become popular in the business field. Some authors define CRM as the, "holistic process of identifying, attracting, differentiating, and retaining customers" [234]. In addition, CRM focuses on strengthening business relationships with the belief that long-term relationships with customers yield better results than short-term one [235]. Customer relationship management (CRM) is a new concept inserted in the businesses and it has increased its importance during the last few years [43, 224]. It becomes a leading strategy for business in highly competitive environment [236].

CRM helps management to implement effectively relationship marketing on a company. It is considered as a tool and process that allows a company to identify, understand and serve customers in the best way [237]. Companies are becoming increasingly aware of many potential benefits achieved by CRM. Some of these benefits from CRM, namely; increasing customer loyalty, improving customer service and support, more effective marketing, and increasing efficiency and cost reduction [238]. After arising of internet and new technology, CRM has been called E-CRM which is a combination of software, hardware, applications, process, and top management commitment to improve customer service and keeping customer relationship [239]. To get repeat purchase behavior, a company must understand really what is important to the customers [240] and to understand that, data analysis becomes increasingly very important. This data analysis can be relatively simple in field and no need for expensive

CRM software [241]. Furthermore, it is noted that firms with the required customer information in place produce superior performance [242]. A company cannot reject serving the low value customers, because they still produce some revenues. Therefore, what company must do is to adopt and manage proper operating costs for different customer segments. Moreover, data analysis will help to effectively manage and control marketing spending on different customer segments [243].

However, while attracting new customers is a significant factor for the growth of a company, this must at the same time produce incremental business for sustainable growth and turnover. With keeping this in mind, organizations must also focus on retaining deviating customers by putting in place an effective win-back strategy [244]. The company must understand customer's needs then, develop a communication plan to reinstate the confidence customer in the business.

By this method, it is confirmed that lost customers can be induced to come back again [244]. Managers must always focus on other changes that are required for or affect on managing customer loyalty and effective CRM [245]. This is particularly relevant given the need to handling complaints effectively [60]. Well trained, helpful employees can also provide positive switching barriers [187]. So, top management must also focus on employee's satisfaction to yield customer satisfaction [246].

3.10 Summary:

As the wireless communication field become highly competitive, it is very important to retain current customers and attract new ones of other operators. Thus, loyalty concept is crucial to business survival [119] because the cost of attracting new customers is more expensive than keeping old customers [120]. Therefore, companies must strive to increase their share of the market by maximizing customer retention [121]. Moreover, when we compare with loyal customer, a non-loyal one is much more influenced by negative information about the services or products [129]. Therefore, retaining current customers and strengthening customer loyalty appear to be very critical for mobile operators to gain competitive advantages. Losing existing customers will be a harmful and a painful situation for mobile communication companies, because it is considered that companies have a profit not only from basic services but also from different kinds of service plans through loyal customers. Since the customer satisfaction importance becomes a key factor in today's business environment, most of companies are focusing on the notion of customer profitability and loyalty to increase share of the market and customer satisfaction.

Many of the studies have been conducted to understand customer satisfaction and loyalty in mobile services companies [46, 72, 122, 123, and 124]. Most of them emphasize that customer loyalty and its factors are

important for the success of mobile services companies. Perceived customer value and service quality are supported as drivers of customer satisfaction [125]. Satisfaction is always considered as a main input for customer loyalty. However, satisfied users may switch to another firm in low switching costs cases [126].

Customer Relationship Management, the core concept of the business to enhance customer relationship, is emerging as core competence of a company. Establishing successful CRM of a company starts from identifying loyalty and customers' true value because, the customer value will provide basic information to deploy more personalized and targeted marketing. So, with help from information technology, customers become more open to understand firm's brand. Thus, satisfaction alone may not be enough to keep a long-term relationship [87].

Trust is a critical factor to build and maintain relationships between customers and providers [119]. Thus it is a big challenging for companies to stay alive and gain the market share by making their customer more loyal to the companies. As competition increases, customers bargaining power becomes stronger, and thus building trust and image becomes more important strategies for companies and to focus on factors affecting loyalty among consumers. Customer loyalty must be controlled and considered during risk management process to keep the organization's main goals

because losing customers is considered as a big risk that may face the mobile operators [130].

Degree of the commitment is relatively tied to the level of fulfillment of provided mobile service options by previous or current offers. Thus, fulfilled services affect customer satisfaction which as a result affects the commitment and the loyalty [127]. So, loyalty and commitment are related concepts [128]. However, Due to the many alternatives available to customers, they can easily switch service providers. Generally in the business world, communication field is considered as one of the highest customer churn rates which exceed 40 % annually [42]. Furthermore, wireless operators are losing 2-4 % of their customers monthly; who cause millions of lost revenue and profit. Therefore, applying E-CRM can help to provide services based on customers' need and expectations [45]. Based on that, one of the questions that Palestinian operators will be asked in the interview is; if they have and interested in both of CRM and E-CRM strategies and activities.

Corporate success depends on an organization’s ability to build and maintain loyal and valued customer relationships. Therefore, it is essential to build refined strategies for customers based on their value.

Chapter Four

Research Methodology

4.0 Overview

4.1 Research Approach

4.2 Data Collection

4.3 Data analysis

4.4 Research Plan

4.5 Research Credibility

4.6 Time Horizon

4.7 Ethical Considerations

4.8 Research Perspectives

Chapter Four

Research Methodology

4.0 Overview:

Research work generally means an investigation or study leading to increasing in the knowledge and facts in a systematic and procedural fashion [247], while methodology of the research is defined as a general principle or philosophy which will guide the researcher in his study [248].

The research methodology describes how this study will be conducted in terms of information and data collection, and the presentation of the analysis with results. The main sources of data and information in this research were a literature review and empirical research. This chapter will address the research objectives and methodology of the research. It has been mentioned that there is no true or false methodology but only high or low useful ones [249].

In describing the methodology used in this research, this chapter also discusses the research methodology itself, it aims to discuss the research procedures and techniques used in this research, including research approach and methods of data collection. Then, the research's limitations were identified. Most importantly, this chapter presents credibility and ethical considerations of the study. The research's findings and implications will be discussed in the following chapters of this research. The objectives

of this research must be remembered again very well before starting the empirical research. The problem statement has illustrated the importance of the risk management model for mobile communication in Palestine. So, the goal of this research is to develop such a model.

The main goal of this research is to develop a risk management model for mobile communication in Palestine, when viewed from a business perspective. To achieve the main goal, the following secondary objectives have been identified:

- To explore relevant existing theories and models related to risk and risk management, as they affect Mobile operators.
- To analyze and study some of potential risks factors that affect Mobile communication in Palestine.
- To conduct interviews with managers in both companies Jawwal and Wataniya and distribute a questionnaire to their customers to determine those risks that should, from a manager's and customers' perspective, consist part of the model.
- To get conclusions from the empirical analysis of the data associated with risk management model, and to make suggestions regarding its implementation in the Mobile communication in Palestine.

4.1 Research Approach:

The purpose of this research is mainly to be exploratory in addition to descriptive analysis, it will start as a descriptive research to understand existing practices that control risks facing mobile communication field in Palestine, and then to explore a developed model to manage those risks effectively in Palestinian mobile operators. Generally, researches can be categorized based on their purpose, thus; research can be considered as explanatory, exploratory, and descriptive [249, 250]. Exploratory research conducted to find out what is happening and identifying new experience, new understanding, and to explore new factors related to the required topic [251]. There are three approaches to conduct exploratory study: reviewing available literature, interviewing focus groups and using qualitative approaches with experts in the subject [249].

Descriptive research used to describe the situation and makes it possible to answer many questions [249]. It defines the constructs of model parts or theory elements [252], but it does not give up the nature of relationships between elements themselves [253]. While finally, explanatory researches are held to test whether an event causes another [254]. The approach of any research is defined based on theory usage in that research. The theory employed in a research may or may not be made explicit in the research design; even though it will generally be made clear in the presentation of research outcomes and conclusions [249]. Thus,

research may be approached from inductive or deductive perspectives. It is considered as deductive when it begins with the development of a theory or hypothesis.

That means to start thinking from general to specific. While, the approach is inductive if the research starts with an observation of a phenomenon in an environment, then a theory is developed or generalization is made based on data collection. Thus, thinking from specific to general [255].

Therefore, related to major methods of theory construction, there are two methods: deductive and inductive, "deductive theory represents the most common view of the nature of the relationship between theory and research. The researcher, on the basis of what is known about a particular domain and of theoretical considerations in relation to that domain, deduces a hypothesis that must then be subjected to empirical scrutiny" [256].

In this approach, the researcher develops a theory and designs a strategy to test that theory. On the other hand, "with an inductive stance, theory is the outcome of research. In other words, the process of induction involves drawing generalize able inferences out of observation" [256]. In an inductive strategy, theory produced from the analysis of the collected data. Using a combination approach of induction and deductive is possible depending on the focus goal and objective of the study [249, 255]. Both approaches are essentially different as illustrated in figure 11 below:

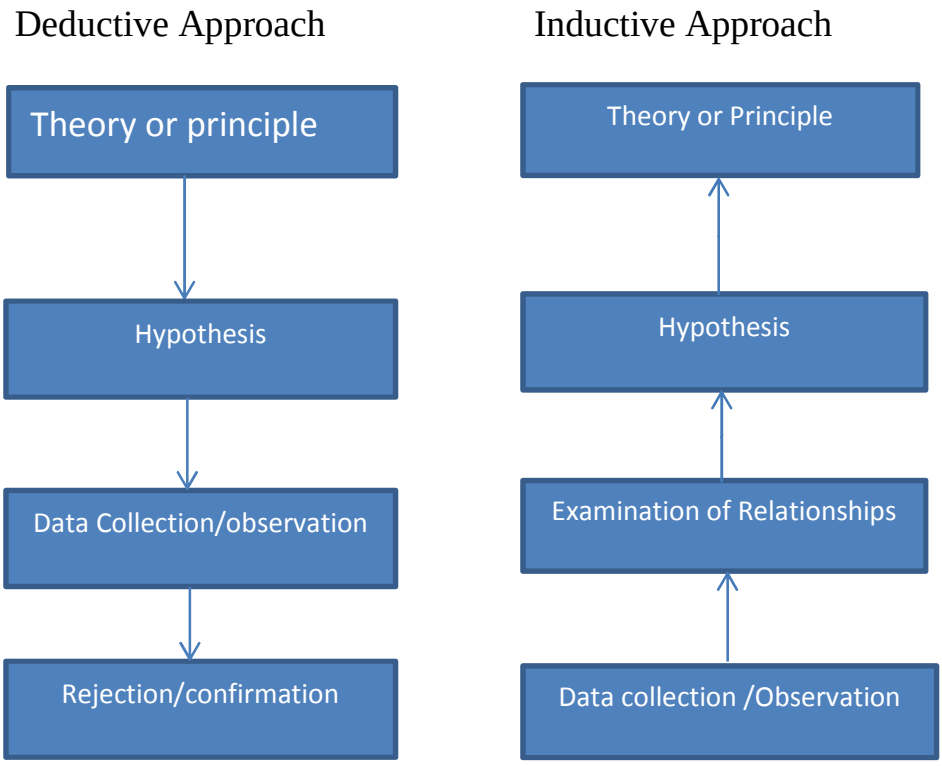


Figure (11): Deductive and Inductive Approaches [249, 255].

An inductive approach is the most appropriate for this research, based on the research's philosophical stance. This approach enables the researcher to get a feel of what is going on and, consequently, to understand effectively and deeply the nature of the problem [249]. In employing this approach, the researcher usually uses a grounded theory approach to data analysis and thus generates theory [256]. In addition, the inductive approach enables the researcher to meet this research's objectives and gain an understanding of customers' feelings about, and views of mobile communication activities and loyalty to those firms. This approach is suitable for this research for many reasons. Firstly, it emphasizes gaining an understanding of the risk management practice in Palestinian mobile

operators by adopting a qualitative strategy based on interviews. Moreover, this approach allows the researcher to understand and see the different viewpoints of participants. Secondly, the inductive research allows the researcher to be part of the research process [249, 256].

Research approach may also be classified based on another perspective, to be qualitative, quantitative, or a mixture of both [257]. Qualitative research is more focused on words than numbers in quantitative research design [256]. There are many methods to collect data in qualitative approach, which includes surveys, interviews, and observation. Qualitative approach relies on the collection and analysis of textual data [258].

Qualitative research is concerned with the knowledge about the problem from questions and thus the count of numerical numbers of how many responded yes or no, is not necessity [248]. Qualitative research is a good tool for accessing deep understandings, gathering data, rich insights and obscure information [259].

On the other hand, a quantitative approach is collected to identify and test research hypothesis, based on existing theory [260]. So, a sample size of survey is required for statistical analysis issue [261]. Mixed approach aims to use both of quantitative and qualitative approaches. The goal of mixed approach is to benefit from the strengths of each of them and reduce the weaknesses of each of them in a single research study [262].

Researcher summarized advantages and disadvantages associated with each approach as in the following table:

Table (3): Advantages and disadvantages associated with research approaches.

Research Approach	Advantages	Disadvantages
Quantitative	* Easier to compile the data onto a chart or graph.	* It is more costly than using qualitative research.
	* Research can be conducted on a large scale and gives a lot more information as far as value and statistics	* It depends on numbers which change often.
Qualitative	* Easier to gain a better understanding of the target market.	* You can only gather the information that the small group gave to you.
	* Low cost.	* It doesn't allow for statistical data.

The approach chosen for this research is qualitative and quantitative (Mixed) approach. This research used qualitative beside quantitative approach to explore what the term risk means to the participants, what are the activities to manage risks. Therefore, this research is exploratory.

4.2 Data Collection:

The main sources of data and information in this research were a literature review and empirical research. The main purpose of reviewing the published literature is to establish what previous research has been conducted concerning risks associated with the mobile communication

field, to examine current risk management models and to determine what many authors have written about this subject and topic. Literature review helps in explaining the results from the empirical research related to the questions [248]. In this research, literature sources were from the internet sites, annual reports, journals, books, articles, newspapers, magazines, masters' dissertations, doctoral thesis and case studies related to this research.

To meet the research objectives, many data collection methods were applied. The required information is gained by surveying customers. The data is collected through structured questionnaire and semi-structured interviews. An interview guide helps the researcher to gather standardized data from all participants, to build new knowledge [263]. The interviewer generally has a schedule and list of the main issues and topics that need to be covered to keep the interview on track.

4.2.1 Empirical Survey:

A quantitative and qualitative (mixed) approach was chosen for this research. The empirical survey which is used will be examined under the following headings: design of the questionnaire, objective of the survey, survey and analytical methods [264]. A survey is conducted usually in business and management research to get data that seek an opinion of a target population. It gives a chance to collect a large amount of data from a large population economically. It often uses structured questionnaire [249].

According to many scholars, the main instruments used in a survey method are administered or structured/unstructured interviews and questionnaire or a combination of both. Questionnaire generally, can be used for descriptive study and must have a good layout, clear questions, complete and relevant items with logical arrangements for them. It is very important also to have the ability to elicit from respondents the willingness to answer the questionnaire [249, 255, and 265].

In this study, structured questionnaire was used to collect data from customers of both Palestinian operators Jawwal and Wataniya.

4.2.1.1 Interviews:

Interview is considered as one of the famous method for qualitative research. It gives in-depth knowledge pertaining to experience of participants and viewpoints of a particular subject [266]. Interviews are a systematic method to gather information from individuals through conversations either face-to-face or via a phone call. However, there are many forms of audience design to get thick and rich data utilizing a qualitative investigational perspective [267]. There are three ways for interview design: unstructured interview (informal), semi-structured interview, and structured interview which is standardized open-ended interview [268]. Even though; there are different designs of interviews, all of them have the same usage which is to provide valuable personalized data [269]. For this research, the researcher chose to interview some experts

with managerial levels who have good experience in wireless communication field in Palestine.

Managers' interviews were to explore their views on risk management aspects. Semi- structured interview was chosen in this research. The interview questions were designed to be semi-structured for the following reasons: it allows the participants to describe freely what was important from their perspective by using their own words and statements. This method of question-building gave the interviewees more space to describe each issue in considerable detail. Thus, the researcher gave the interviewees the chance to voice their opinions based on their long experiences [270]. Sample size equals nine experts from managerial level in Palestinian wireless field. The researcher requested from participants to carefully read the questions of the interview and to give their comments on any question that is not clear in construction and meaning to them. Efforts were made to ensure that questions were clearly formulated, easily understood and appropriately sequenced. All successful semi structured interviews have been face-to-face meeting held in their offices for around 30 to 50 minutes. The researcher avoided long time interviews to prevent participants from becoming tired which may affect the quality of their responses. All of interviews have been documented by the researcher by writing comments to help in the analysis stage.

The key topic of the interview was the meaning of the term risk and risk management as understood by managers. During exploration of this concept, managers were asked to identify main types and sources of risk from their point of view. The other topic was related to activities and strategies of managing and dealing with risk specially related to the Customer loss risk. From the interview; there were two main tasks to be done:

1) Noting and Recording participants' answers.

2) Transcribing and coding.

In order to collate accurately the required information and enhancing the research, while enabling the researcher to make good sense of what current practice is, the following issues are considered. The researcher needs to keep four separate sets of notes. First one is a brief and should be made at the time of the interview. The second should be written as soon as possible after each interview period. The third should record ideas that arose during each interview. Finally, the fourth one should give the researcher's analysis and interpretation of the collected data from each interview.

Interview questions were given firstly to the supervisor of this research and then to three managers in marketing and planning field (one of them with doctorate degree in wireless field) to review and check if any vague or confusing questions are found. Based on that, few comments have

been reported and accordingly, questions were updated to be at the final state as in appendix-A.

4.2.1.2 Structured Questionnaire:

Survey research is one of the several methods to conduct quantitative approach in descriptive research [264]. One of the important tools of survey research method is questionnaire survey, which is a quick and cheap research tool used to gather data and information in a systematic and organized manner from a sample of well-defined population. Usually, it is designed to reach to well defined-objectives using a sequence of closed-ended questions that allow the participant to choose an answer from a set of choices offered by the researcher [271]. Questionnaire survey can be applied in different ways such as on-line using web applications, or by mail and face-to-face. Researcher applied and distributed it face to face among students in universities who are the most familiar population with wireless communication services [139].

The main objective of survey design using a structured questionnaire was to extract the required information from the respondents to support gathered data from interviews. That needs to use a well-constructed questionnaire, which is used to gather data from the relevant unit of analysis under research, usually, an individual [272]. Data analysis means to categorize, examine, test and verify the collected data in order to get meaningful results of the research [273]. Based on data analysis, a model

will be constructed and presented for use in the field of mobile communication in Palestine. In this research, survey method was selected because it sought the opinion of a sampled population about a specific subject matter and it combined the usage of qualitative and quantitative approaches. The results could be used to derive and develop a model for managing risk in Palestinian mobile communication companies. Interviews' questions are derived from the literature review. Questionnaire for this research was given also to the supervisor of this research and it was tested at the same time by fifteen participants to find out if it was understood easily or it needs more clarifications. Fifteen participants were asked to answer the research's questionnaire and check if any vague or confusing questions are found. Based on that, few comments have been reported and accordingly, the questionnaire was updated to be at the final state as in the appendix-B. The questions of scale have been translated from English to Arabic by the researcher and approved by an academic interpreter with final agreement from the supervisor of this research (See Appendix-C). The same approval was taken on converting Arabic to English results during the analysis.

4.2.1.3 Design of the Questionnaire:

It is well known that qualitative data collecting methods depend on questions as the means to extract required data [272]. So questionnaires

were the best source to solicit information from participants who are customers of wireless operators.

A questionnaire was designed in the format of Likert scale for data collection. The responses ranged between extremely high agree (1), agree (2), normal (3), disagree (4) and extremely disagree (5)**.**

A structured questionnaire was designed to establish what the customers of both operators in Palestine (Jawwal and Wataniya) really want from their providers and what the main impact on their loyalty is. The questionnaire is divided into two parts, demographic (institutional information) and statements related to risk and customers' opinion. These were rated on a five-point Likert scale, as stated before.

Institutional information, which includes:

- Gender.
- Age.
- The education level.
- Number of years the customer using the operator services (seniority of the customer with the operator).

Even that, this research is mainly concerned with the development of a risk management model for the mobile communication in Palestine; this information could be useful for further research purposes.

The second section, consisting of many statements, is concerned with risks associated with the mobile communication in Palestine and related opinions from customers. The questions included in the questionnaire are based on the literature review carried out in chapters two and three in this research.

A five-point Likert scale was used in most of the questionnaire to assist with statistical evaluation of the responses received.

4.2.1.4 Access Strategies:

The researcher introduced himself to respondents as a student conducting the study and sought permission from them before asking them to respond to the research's questions. Respondents were also assured of anonymity and confidentiality of their responses (Appendix- C).

4.2.2 Population:

The target population in this research comprised all subscribers and customers who are individual users or subscribers of Jawwal and/or Wataniya in Palestine.

4.2.3 Sampling;

For this research, it was very important to select respondents who actually understand the true nature of mobile communication field.

Customers of the two major mobile communication firms in Palestine were sampled for this research.

Researcher mainly, concentrated on Students sector in Palestinian universities for many reasons. One of these reasons is that, students are qualified in using wireless services and applications. Also, the nature of students' work nowadays in their universities requires the use of mobile service to conduct research and contact their friends and lecturers during discussion of some academic issues. Moreover, students are very active users of mobile communication [139]. Experience of respondents is very critical to determine the customer satisfaction level in mobile phone operators. It is very important to ensure that all respondents have some knowledge and experience in wireless mobile service usage and thus, they will be able to answer the questionnaire accurately [37].

4.2.3.1 Sample size:

Out of the sample frame of all subscribers in Palestine, a sample size of respondents was selected based on the judgment of the researcher because of cost and time constraints. Using a larger sample in this research will require a high cost that the researcher could not afford. Again, the time limit within which the research was to be finished would not allow using a larger size. The judgment of the researcher was supported by the following equation to calculate the sample size [274].

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where:

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (.5 used for sample size needed)

c = confidence interval, expressed as decimal

(e.g., .05 = ±5)

Equation 1: Sample size equation [274]

Jawwal Operator has 2.5 Millions of customers While Wataniya has 0.6 Million of customers till the second quarter of 2013 [275]. Based on that, applying the sample size calculation will yield 800 samples to be involved in the questionnaire that researcher will distribute. In qualitative research, there is no correct answer to the question concerning the number of participants to be considered as a sufficient number for contacting and selecting. While in quantitative research, the main factor that defines the sufficient number of participants is the statistical method that will be used in analyzing the collected information [2, 276].

Thus, enough amounts of interviews (Qualitative) should be held, and related to some authors; at least eight successful interviews are required for pattern (Thematic) analysis [277].

4.2.3.2 Sampling techniques:

In this research, the researcher used the convenience sampling technique which is one of the non-probability sampling designs. Convenience sampling involves gathering the required data from individuals of the population who are conveniently available to answer the questionnaire [276]. The sampling units are both of male and female mobile phone users of Jawwal and Wataniya in Palestine. Data have been gathered from those samples by the use of questionnaire. Data was summarized in the form of simple frequency statistics (quantitative) and descriptive (qualitative) using Pattern analysis.

4.3 Data analysis:

In this research, several data collection methods were applied. Structured questionnaire and semi- structured interviews were the main data collection methods that selected by the researcher. Questions for both of interviews and questionnaire were developed based on relevant literature review and reviewed many times to ensure the accuracy of the collected data.

Data analysis is the process to categorize, examine, verify, and test the collected data in order to find meaningful results and outcomes of the research [273]. During analysis step, data will be summarized and described. Techniques used in data analysis are dependent on the type of the collected information and the applied methods for that collection [256].

The obtained results were discussed, and conclusions were formulated to develop a risk management model for Palestinian wireless operations. Deep analysis will be shown in the next chapter. Firstly, overview of the statistical process will be given and secondly, results will be reported. The data collected by means of the structured questionnaire was handled and analyzed using Microsoft© Excel© software for basic analysis.

For the qualitative data, different techniques can be used to analyze the collected data. Analysis strategies can use any of these techniques for data analysis process. One of them is pattern matching. This technique can be used for descriptive "qualitative" research [273]. It compares the predicted or proposed (based on literature review) with an empirical one [278]. There are three stages involved in pattern matching analysis during writing on qualitative research data analysis. Stages started with data sorting and reduction in order to select ones which are valid and relevant to the study ready for conclusion, secondly is displaying those data, then finally is deciding what things mean, and from filtered responses project observed pattern or wanted model. Pattern matching "thematic analysis" is a flexible technique that allows to use theoretical frameworks and also to produce new insights [279]. Because of that, thematic analysis has been chosen to analyze the data. It is useful to increase research understands of actual practices for risk management [280].

4.4 Research Plan:

The following section discusses the research plan. It has been illustrated in the figure below:

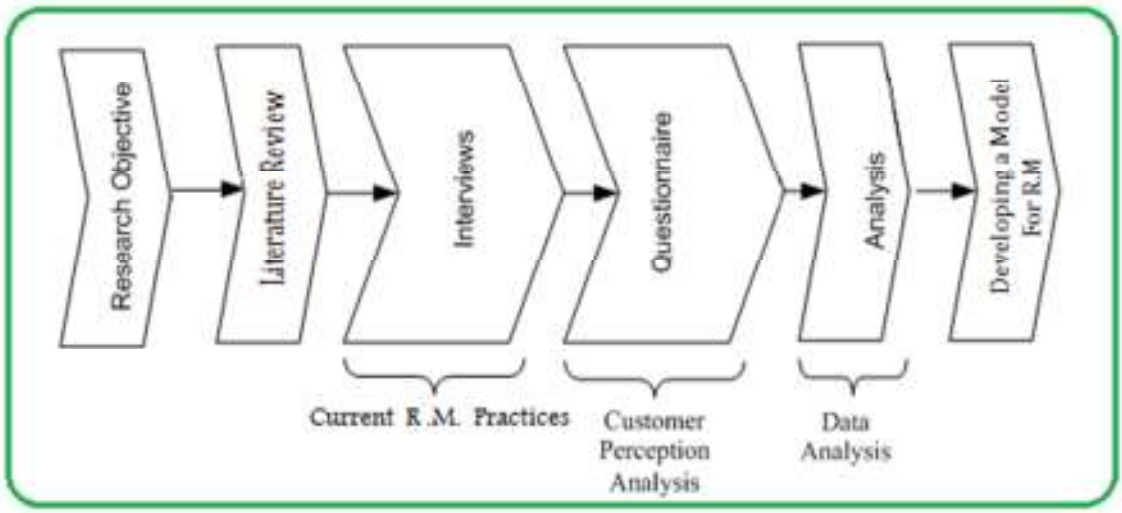


Figure (12): Research Plan.

Inductive research allows the researcher to combine several qualitative methods to have rich data and improve research validity [249, 256].

In this research, the researcher employed several data collection methods, with semi-structured interviews forming the main method, supported by questionnaires. Questions of the interview were developed based on the literature review to seek information about operators' general understanding of Risk Management (R.M.), their risk management Practices, risk management's impact on customer loyalty. Questions of interviews were reviewed several times to ensure accurate data collection. At the analysis stage of gathered data, data will be described and

summarized with some original findings highlighted. Techniques employed in analyzing data are dependent on the type of the information collected, and the methods of data collection used [256].

In this research, mixed data scheme research was employed and the findings from questionnaires and interviews will be analyzed in the next chapters. Thematic analysis is a technique for making replicable and valid inferences from texts to other meaningful topics and ideas. It helps to increase a researcher understands of particular phenomena and/or informs practical recommendations. It is useful in analyzing large numbers of critical events [280].

4.5 Research Credibility:

Research methodology needs to have the characteristic of credibility. Thus both of results and means must be sincere and right [249]. In this research, efforts were made to ensure validity and reliability, which are important at every step of the research methodology. Validity refers to accuracy of measurement which means that, the measurable concepts or attributes are exactly measured by statistical instrument [249, 255]. Other authors considered that the concept of validity is to do your task, job or research with the integrity of results and conclusions generated from professional and good quality research [256]. So, validity determines the quality of results and leads to the research findings being accepted as true [280].

Related to the content validity, it is usually achieved by seeking opinion of other experts or investigators. Interview questions and the questionnaire for this research were given to managers in marketing and planning field to review the content validity as a considered way to have the validity of the tool which by the data will be gathered [3, 249]. The questionnaire was also tested by fifteen participants to find out if it was understood easily or it needs more clarifications. Fifteen participants were asked to answer the research's questionnaire and check if any vague or confusing questions are found. Based on that, few comments have been reported and accordingly, the questionnaire was updated to be at the final state as in appendix-B. Moreover, to validate questionnaire's results, the researcher adopted the last option in question number (three) to validate answer on question number (two). However, the questions of scale have been translated from English to Arabic by the researcher and approved by an academic interpreter. Supervisor of this research approved the final questionnaire's statements.

According to validity in qualitative research, some authors stated that validity reflects the accuracy in interpreting what is going in the minds of participants and the degree to which the researcher correctly understands their thoughts, views, feelings, intentions, and experiences [281]. The consistency of findings when the research object has been repeatedly measured is known as "Reliability" of the research. It is a main issue to check the reliability of data before starting data analysis step in order to

determine the credibility of analysis outcomes. Reliability checks whether or not respondents' selection for any one indicator tends to be related to their selection for the other indicators [256]. By interviews and questionnaires, the viewpoint of both Palestinian wireless operators and customers' perceptions enriched the discussion and strengthened research validity.

In terms of qualitative data by semi structured interviews, pattern analysis was selected to analyze the data. Thus, enough amounts of interviews should be conducted to have valid results. Based on some authors who said that, at least, eight successful interviews are required for pattern (Thematic) analysis [277]. To validate research's results, the recommended model for managing the risk in wireless mobile operators in Palestine, was evaluated by many experts in this field. They stated that it is a suitable and easy one to be implemented in a special environment in Palestine. It was accepted by them.

4.6 Time Horizon:

Related to time horizon, the design of the research can be cross-sectional or longitudinal. A cross-sectional research focuses on a specific topic at a specific period of time [249]. A cross-sectional research divided to be a single or multiple. When one sample of a population is selected and studied at a particular time it is considered a single cross-sectional study. Otherwise, when two or more samples of a target population could be

studied once, that is considered a multiple cross sectional study [265]. On the other hand, it is longitudinal where a specific topic or phenomenon is studied at different periods of time. This can also take a form of a single and multiple longitudinal studies. In this research, a cross-sectional design was chosen because data was collected from a cross section of users of mobile networks once and not for different periods of time.

4.7 Ethical Considerations:

It is the aim of this research to be an ethical; researcher endeavored through this research to treat with respect all participants. Due to the competitive environment, confidentiality, and sensitivity of information, the researcher ensured that all information and questions used in this research were matching securities obtained by the operators' policies. The researcher got permission from all participants before getting any information from them. All data gathered during the research has been kept highly confidential, to prevent any possible harm to the involved parties. Finally, the researcher declared to all participants that any personal or organizational information or data would be treated anonymously (Appendix- C).

4.8 Research Perspectives:

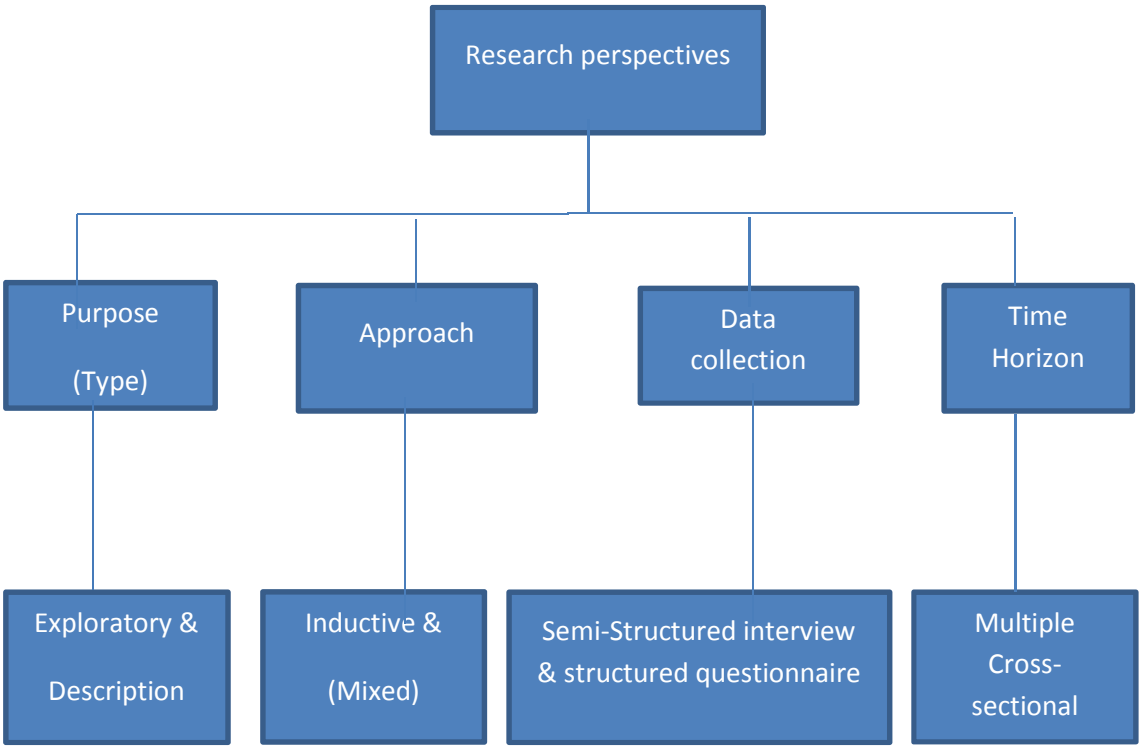


Figure (13): Summary of Research Perspective.

Chapter Five

Data Collection and Analysis

5.0 Overview

5.1 Current Risk Management Practices (Interviews)

5.2 Customers' Perception Analysis (Questionnaire)

5.3 Summary

Chapter Five

Data Collection and Analysis

5.0 Overview:

Data analysis means dividing data into meaningful parts, and then manipulating these parts together to get a description and conclusions of the required issue [282]. Moreover, data analysis process involves examining, categorizing, tabulating, and testing of data or otherwise recombining factors and evidences [273]. After representing the data collection methods in the previous chapter, the researcher will analyze these data in this chapter. This chapter presents the findings obtained from data collection methods used in this research (i.e. semi-structured interviews and questionnaire). The findings are presented in two parts that represent research approach of this research. Firstly, current risk management practices (interviews), and secondly customer perception analysis (questionnaire). However, outputs of these two parts complement each other to achieve the main propose of this research which is a developed model for risk management in Palestinian wireless mobiles operators.

5.1 Current Risk Management Practices (Interviews):

It is clarified in the research approach that the initial step of this research will start with describing the current risk management practices in

wireless mobile operators in Palestine. Semi structured interviews were adopted as a tool to collect qualitative data. The purpose of this step was to understand current risk management practices and to get feedback from wireless mobile operators' experts in Palestine regarding this research, and to learn from their experience how to develop successful risk management model, and thus; exploring a developed model for risk management. Therefore, semi-structured interviews with nine experts have been conducted to get qualitative data; the experts have managerial positions in wireless mobile communication field in Palestine. Researcher couldn't contact extra numbers of experts due to some limitations in the time and some of the Palestinian operators' restrictions and regulations.

For this research, there are twenty questions for interviews (see appendix-A). Nine experts in Palestinian wireless communication field have been interviewed to get required information which helps the researcher to understand and describe the current risk management practices in Palestine. Table-4 below contains the managerial position of each expert.

Table (4): Managerial position of each expert

No.	Managerial Position
1	Marketing Director
2	Services and Products Manager
3	Customer Operations Dept. Head
4	Project Manager
5	Human Resources Director
6	Strategic Planning Director
7	Network Operations Director
8	Customer Care Director
9	Information Security Manager

In order to collate accurately the required information and so deepen the research, while enabling the researcher to make good sense of what current practice is, the following issues are important to be considered. The researcher needs to keep four separate sets of notes. The first one is a brief and should be made at the time of the interview. The second should be written as soon as possible after each interview period. The third should record ideas that arose during each interview. Finally, the fourth one should give the researcher's analysis and interpretation of the collected data from each interview [283]. Based on literature review, nine-interviewed experts' data are valid for thematic analysis after inducting the interviews in order to produce perceptive themes [277, 279].

All notes and data taken from the interviews were reviewed carefully, and transcribed very well by the researcher to be in a unified structure. Researcher has nine transcribed copies of raw data which were ready for the next steps of analysis. Those steps started by reading many times and understanding gathered information in the nine transcribed

copies until the researcher be familiar with them. Based on that, codes were generated by ascribing each sentence by a code that describes the main essence of it. Those codes were arranged on the basis of relationship between them to find and prepare related themes. Relations between theoretical understanding background and generated codes helped into finding the themes. Themes were reviewed by checking them against the individual transcripts and the entire data set. Moreover, the researcher moved forward and backward between the whole data as more reviews would guide in determining and updating the final themes as shown in table-5.

Table (5): Generated Codes and Final Themes.

Codes	Discussed Issue	Themes
Risk	- Management's Risk perceptions	Identification of Risk Management
Risk Management	- Definition of Risk Management - Importance of Risk Management	
Risk's register	- List of Risks which affect and face - Palestinian wireless operators	
Strategy	- Risk Management strategies. -Clearness of Risk Management strategies.	Risk Management strategies.
Cost	- Cost's effect on selection of Risk Management strategies.	
Resources	- Allocation of resources for Risk Management strategies.	
Periodic review	- Periodic review of Risk Management strategies.	
Activities	-Involved Activities in Risk Management	Risk Management activities.
Objectives	- Clearness of Company's objectives.	
Key person	- Key person for Risk Management	

Training	- Employees' training	Success factors in Risk Management
Communication skills	- Employees' Communication skills	
Documentation	- Risk Management Documentation	
Customer feedback	-Customer feedback in Risk Management	
CRM	- CRM Importance.	Customers' Relationships
Image	- Company's good Image	
Trust	- Customer Trust	
Loyalty	- Customer Loyalty	
Customer Switching	-Satisfying Current and new customers.	
Tools	- Used Tools in Risk Management	Risk Management Tools and Indicators.
KPIs	Monitoring Indicators in Risk Management	
TPM		
Complaint Handling	- Customers' Complaints Handling	
Technology	- Not up to date Technology.	Obstacles of Risk Management.
Equipments	-Shortages and Limitations in Equipments. - Occupation Restrictions.	
Licenses	- Licenses Permissions and approvals. - Occupation Regulations.	
Competitor	- Illegal Competition.	
Environment	- Economical Conditions. - Special Palestinian Environment	

The researcher summarized findings from interviews data in current risk management practices as in the following themes:

5.1.1 Identification of Risk Management:

This theme was aimed at ascertaining respondents' general back ground knowledge of risk and risk management. Thus, the purpose of this theme was to understand management's risk perceptions in Palestinian

wireless operators. All interviews revealed that risk is unknown, uncertainty and unpredicted results that affect negatively on the performance, growth and reputation of the business. Most of experts confirmed during interviews that risk management is a systematic process to handle the risk daily and directly in order to reduce bad impact level of the risk to the accepted level. Also, another target of this theme was to understand opinions of respondents about the importance of risk management for their companies. The importance of risk management is clear based on the respondents' opinions.

The findings from all respondents were that risk management is very important because it helps to achieve objectives and maintain profits ranges. Services quality and market share also need the effective management of the risk. The effective management of risk enables wireless mobile operators to maximize opportunities and to achieve objectives with outputs. Moreover, they mentioned that risk management is important to maintain their ability to foster and mobilize global society growth which is relying on using and benefiting from wireless communication. Related to common risks that Palestinian wireless operators encounter during their risks definition; all respondents, focusing on their experience, agreed that customer loss has a significant impact on profit especially in a competitive environment. They stated that wireless operators must have a considerable effort in convincing customers to stay with them. Moreover, they stated other common risks like illegal competition, limited equipment due to

Israeli regulations and lack of available technology due to license difficulties because of occupation restrictions. Based on results from interviews, main risks that face mobile operators in this high competitive business environment are how to attract new subscribers and keeping current ones.

Respondents agreed that, the effect of losing customers or their switching could be detriment on revenues and service continuity. Therefore, to control and overcome this risk in a high dynamic competitive environment, wireless operators should develop many strategies to respond to customers' expectations and requirements.

Based on that, researcher asked about the main risk among listed types of risks that mentioned by Palestinian wireless operators to know if they consider losing customer as a main risk they face during risk identification step.

As noted, interviews data revealed the same thing from the respondents who confirmed that customer loss is the main risk that they must mitigate and control.

5.1.2 Risk Management Strategies:

This theme is important to check if Palestinian wireless operators are concerned with risk management and if they handle it as a strategic process. Most of respondents revealed that they have strategies to deal

generally with risk, but those strategies still immature. For each different department, there is a specific strategy, alternative process and contingency plan to control related risks and to reduce its bad results.

Moreover, the researcher aimed to know how the best practices in Palestine control and manage the risk. Also by this theme, the researcher will check if an enough required resources have been allocated and if the cost factor affects the treatment option or strategy that selected by Palestinian operators. Respondents mentioned some of treatment options that may be considered to handle the risk as in the following:

- Avoid the risk.
- Transfer the risk.
- Share the risk.
- Mitigate the risk.
- Accept the risk.

Thus operators were asked to explain which of the above options are used as a best option in their practice.

Based on interviews, all respondents demonstrated that, a selected option depends on the risk type, assessment and category (major and minor). Mainly, they assume and control the risk (mitigate) and in many other cases, it can be transferred to insurance companies. Respondents

confirmed during interviews that their companies take the cost in the consideration when they select the required strategy to deal with the risk because as an example, risk sharing differs somewhat from risk transfer in that not all of the risk is transferred to a third party, but still part of the cost of the risk is retained by the operator itself.

At the same time, all respondents agreed that, all required resources are allocated very well for risk management process in their companies to overcome a risk. As an example, resources that allocated for contingency or emergency plans. However, each selected strategy must be evaluated to check to which level those strategies can control and overcome the main considered risks.

The majority of respondents agreed that they have good strategies in their companies to overcome risks and they do the best in this issue. Some of them revealed that the main risk which is customer loss can be controlled by loyalty programs and services diversification. All that will help in customer retention. It is also important to know by researcher if risk management strategies and activities are updated and if that happened periodically.

Some Palestinian experts mentioned during the interviews that risk management process are updated but not periodically. And they confirmed that, those processes are reviewed at some new events. The majority of respondents explained that risk management process and activities are

immature and those activities are updated in specific functions and departments but not in general for a company as a whole. All of them agreed that wireless operators should monitor and periodically review the risk which is determined as acceptable to ensure that it remains under control and accepted level.

5.1.3 Risk Management Activities:

The purpose of this theme was to explore how importance of risk management in the company and if they are considering this topic as a specific section with a key person. Interviews revealed that, there is no specific section in their companies for risk management in general. But, there is an assigned committee in some departments to be responsible about risk management activities. In regards to findings which obtained from interviews, researcher noted that, there is no key person assigned for risk management in the respondents' companies. It is very important to obtain a detailed picture of risk management activities that operators use, and to learn which risk management process they follow. The findings from interviews revealed various detailed activities for risk management based on their related departments and responsibilities, but most respondents stated the same general risk management frame or model. They started with risk identification then they quantify and assess the risk to prepare the suitable treatment action or strategy. After that, control actions are applied. To confirm that risk is controlled very well, they keep monitoring and

evaluation. Researcher noted that some of steps are depending on their experience and don't rely on specific techniques, while other steps are immature like getting feedback, documentation and periodically updating for those process and activities.

Moreover, the researcher aimed to evaluate those activities that used in the risk management in Palestinian operators. In other words, "Does the selected option effectively reduce the risk to an accepted level?" In regard to findings from the interviews, results showed that most respondents saw risk management activities as useful in controlling and reducing the risk to the accepted level. Good and successful activities make the communication more relaxed and understandable. Respondents were asked if their company's objectives are defined well and if those activities are very well known by employees in all organization levels.

All respondents confirmed that, most of their companies' goals and objectives are known very well in general. That is a good indicator which yields to understand how risk can affect negatively those objectives and thus be more aware.

5.1.4 Success factors in Risk Management:

Interviewees consider risk management as successful if it achieves required objective and enhances overall performance of wireless operator. Required objective of risk management is to control and mitigate risks that Palestinian wireless operators face. As noted from the interviews, all

respondents revealed that there is no overall training for all employees about risk management aspects. But particularly, there are some of training programs in some departments for some employees about related risk activities. As an example, there is some of training process about "How to deal with fraud?" to prevent risk consequences from that fraud on profit as a main affected part. They suggested that, the scope of Risk Management activities should encompass risk management training for all employees in different levels because; well trained and helpful employees can help to achieve effective risk management. Thus, every member in the staff at any level in their operators must understand and feel his responsibility for risk management within his span of control.

In addition, the image of the company is important to affect customer loyalty and to avoid customer loss which considered as a main factor of risk that must be controlled by Palestinian operators. Respondents mentioned also that communication skills are considered as one of many important factors that employees are evaluated based on them yearly and their companies enhance employees' skills as an important attribute of the company's image. Researcher also wanted to investigate the extent to which operators use a document or database and to know the importance of such documentation in risk management process. Thus during the interviews, most of respondents stated that, risk documentation is immature and need to be developed in a proper way. Documentations are prepared particularly in some departments. However in some cases, operators document the

reasons for the assessment to provide a record of the thinking that led to the decisions. Future risk assessment will be helped by like these useful documentations.

The findings from interviews were that, any existing documentations for risk management are referred to at some times by responsible committee in similar occurred events or histories to get the same treatment or strategy which by the same risk was previously controlled successfully. At the same time, they said that operators should understand how importance of the feedback from customers during risk management process.

The majority of respondents revealed that customer feedback is very important issue and it is gained by customers' survey, call center and customers complaints. One of the respondents stated that, they apply customers' survey and questionnaire by a third party to collect required data and feedback. Finally, high commitment of both management and team to risk management activities is an additional factor for risk management success.

5.1.5 Customers' Relationships:

The purpose of this theme was to investigate how operators can build and establish long term relationships with their customers to maintain their loyalty and to prevent their switching. So, as revealed by respondents during interviews, it is a big challenging issue for operators to stay alive

and gain the market share by making their customer more loyal to the companies. As competition increases, customers bargaining power becomes stronger, and thus building trust and image becomes more important strategies for their operators and to focus on factors affecting loyalty among consumers. Customer loyalty must be controlled and considered during risk management process to keep the operator's main goals because losing customers is considered as a big risk that may faces the mobile operators. Respondents confirmed that their companies are concerned with creating their special image and brand. Therefore, they do the best for customer retention because that increases the profit of the operator and minimizes both costs and customer switching in the long run which will lead to reduce the risk associated to this field. Based on that, customer retention is considered as an important issue in Palestine which witnesses a critical environment and difficult economy state. So, respondents agreed that operators must have an extra effort to improve customer retention rates, especially in highly challenging and changeable markets such as mobile phone sectors that reached high levels of market penetration recently within a short time.

Most respondents said that, their operators apply mobile devices contracts with their customers to keep their loyalty and market share. At the same time, to establish the desired long relationship with customers, operators need to provide a good quality of their services. Therefore, all respondents mentioned that mobile providers must create customer

commitment by providing service to their customers with high good quality.

Also, respondents said during interviews that their companies reduce the desire for customer defection by ensuring their loyalty which born from effective complaint handling procedures. However, after arising of internet and new technology, Customer Relation Management (CRM) has been called E-CRM which is a combination of software, hardware, applications, process, and top management commitment to improve customer service and keeping customer relationship.

Because of that, Palestinian experts in wireless mobile communication field were asked during the interviews to find out if they have and if they are interested in both of CRM and E-CRM strategies and activities.

The findings from this research during the interviews showed that, most of respondents revealed that their companies have an integrated system for CRM. They agreed that this topic still in process and need to be developed, updated and moderated. They believe strongly investing in this issue. Moreover, corporate success depends on an organization’s ability to build and maintain loyal and valued customer relationships. Therefore, it is essential to build refined strategies for customers based on their value. Findings from interviews revealed that operators have classified their customers based on their values and each of them has a special offer.

In addition, findings of respondents during the interviews revealed that, majority of them confirmed the importance of establishing a good relationship with customers through a good quality of provided services that meet customer expectations and handling professionally their complaints. Also, respondents mentioned that good price offers and social responsibility are usually helping to increase positive word of mouth between customers which enhances customer trust and operators' good image which will as a result help in risk management for this topic.

However in regard to findings from interviews, the majority of respondents stated that concentrating more on satisfying current customers is more effective strategy than acquisition new ones.

Mobile operators concentrate more on satisfying existing customers to prevent their switching or being attracted by others for two main reasons. Firstly, attracting customers' costs operators a lot of money, time, and efforts which means that, the cost of attracting new customers is more expensive than keeping old customers. Secondly, mobile operators in general, do good business and have high revenue through selling different services and products to both of existing and new customers. Thus as a brief conclusion, most of respondents agreed and confirmed that good and long customer relationships depend on many factors that operators must understand and follow like as examples, trust, image, customer loyalty, quality, price, complaints handling and E-CRM.

5.1.6 Risk Management Tools and Indicators:

The purpose of this theme was to find out how the common risks faced by operators are defined or evaluated, and based on what indicators, tools and techniques. Respondents agreed that, Palestinian wireless operators should monitor and periodically review the risk which is determined as acceptable to ensure that it remains under control and accepted level. Many techniques could be used to help in risk identification like as an example, What If Technique and the Next Accident Assessment. But respondents stated many other ways which through, they can define different types of risks. Some of them mentioned that, risk can be defined and recognized based on risk registers or based on historical data base. Others revealed that they can define it based on their long experience or through complaints receiving. One of them added that risk will be defined by asking the help from the consultants in this field. All of respondents agreed that, these issues of risk identification and evaluation are done periodically at each strategy work shop which occurs annually.

And they mentioned that, the key to the risk monitoring process is to establish indicators which help in evaluating the operator status by managers and other key personnel. Indicators should be designed to provide early alarming of potential problems to allow fast management actions.

The important concept in risk management is the awareness and continuous study with good knowledge of wide risk areas. During the interviews' questions, respondents were asked to identify which methods they used most frequently to determine and evaluate risks in their practices and which are the factors they feel as the most important to be considered when determining the risk.

The analysis highlights that the following methods are mainly used to determine and evaluate risk:

- Customers Complaints types.
- Customers Complaints rates.
- Drop in turnover. And
- KPIs (Key Performance Indicators).

This indicates that the operators realize the importance of satisfying the customer's needs. Every business is concerned when there is a drop in turnover as this means a drop in income and therefore a drop in profit. It must also be realized that if the number of complaints increases, then customers may switch their provider. In terms of analyzing any potential risk, all information related to any risk situation must be gathered and evaluated to be able to take suitable action to minimize the bad impact of the risk or to exploit an opportunity presented by the risk.

The respondents furthermore revealed that, when determining risks, the following key factors are considered: economic growth/decline, how the company is affected, probability of risk occurring, turnover and planning. These factors which have an impact on the company are therefore influence the planning of ways to deal with risks in the event of their occurrence. Researcher during interviews aimed to find out if there is a special effort in Palestinian wireless mobile operators for customers' complaints handling issue during their risk management process.

Majority of respondents demonstrated that they have special units in their companies to deal carefully and directly with customers' complaints. One of these units is called customer care section and another one is called quality assurance. Some of them explained the importance of having a special channel and phone line to receive only complaints from customers who can call freely at any time to find the support from very well trained employees with high level of communication skills.

5.1.7 Obstacles of Risk Management:

The researcher aimed by this theme to know the importance of last updated, newest and highest technology on this business. By the way, firstly and before starting talk about this topic, it is important to remember the importance of innovation in any business in general. As respondents said that, innovation is considered as the lifeblood of the mobile field. The risks associated by the new and constantly evolving technology will affect

network technology choices. The time of technology usage decisions is also challenging, and brings both opportunities and risks. Respondents also revealed that, it is an important and beneficial that mobile operators remain up-to-date with the latest technological systems and services specially that related to the internet and data services.

All experts who have been interviewed confirmed that applying new technology to the customers is very important and any delay in that issue will be a significant risk. But in the same time, all respondents also explained that, due to special situation in Palestine and because of occupation's regulation and constrains, wireless technologies are not up to date. Palestinian operators suffer from this lake of available technology and they waste a very long time waiting the approval to have a license for newest technology from Israeli part. The same thing occurs in getting allowance for importing required equipment to be used in that required technology. All of these form an obstacle in risk management.

In addition, the researcher aimed to see if the competitive environment or economical conditions affect operators' plan and if those are considered when the list of risks is identified. Information of interviews revealed that, the important concept in risk management is the awareness and continuous scanning with good knowledge of wide risk areas. Operators must stay aware of changes in all circumstances with keeping continuous collection and reviewing customer information. Moreover,

interviews' results confirmed that surrounded environment specially the competitive one and economical scale changes are significant key factors that must be considered to keep business growth and survivals. That can be handled by good customer relationship strategies and providing suitable offers with high quality of services to keep the market share and react with the competition from other operators. However, all respondents explained how much illegal competitive from Israeli operators and unfair occupation's regulations can affect negatively on Palestinian operators. Many times, strategic plans and activities are changed accordingly to overcome arising problems from that.

Finally after all activities, process and plans that operators do their best practice, it is important to know their opinion about their customers' overall satisfaction level. Findings from interviews showed and confirmed that, customers are satisfied based on respondents perception. This finding will be confirmed also based on the analysis of distributed questionnaires to customers.

The researcher summarized his findings from interviews data as follows; operators in Palestine that are specialized in wireless communication adopt New risk management processes in order to manage and control different types of risks as proper way for business growth and success. Moreover, liberation of wireless communication market in Palestine enhanced the awareness towards management importance of risk

during the last few years. However, evaluation of adopted risk management process and activities showed that related processes still immature and largely depends on self-experience. Furthermore, the reaction towards new competitor entrance acquires a considerable part of risk management regardless how that aligned with business management process. Current risk management process and activities are still immature for many reasons; competition of wireless communication field in Palestine is recent to the market. Obstacles by Israeli occupation that affect negatively the Palestinian companies' strategies and plans are another reason for the process immaturity; there are unclear political restrictions towards new equipment entrance to Palestinian side, beside other restrictions towards adopting new technologies and using frequency spectrum for wireless communication. Finally; most of the time, Palestinian wireless operators react to Israeli providers, who are competing illegally and providing wireless services to Palestinian subscribers without respect to international agreements. On the other hand; it was noticed that Palestinian wireless operators are providing best efforts to achieve effective risk management process as a driver of sustainable development of their services. For this reason, they started adopting risk management aspects among their employees in all levels to achieve the goal.

5.2 Customers' Perception Analysis (Questionnaire):

After finishing the step of understanding current risk management practices of wireless communication companies in Palestine, the next step was to evaluate customers feeling about their operators based on customers' perception by using quantitative survey (see appendix-B). Customers churn considered as a main risk factor on wireless operators [160], so understanding their needs is very important for customer retention and thus operators will control this kind of risk. Researcher adopted many closed-ended questions in the questionnaire distributed among the sample size. Customers filled their feeling, opinion and perception of each question using a five-points likert scale to rate their level of agreement or disagreement (1-extremely agree and 5- extremely disagree).

5.2.1 Statistical Method:

The data collected by means of the structured questionnaire was captured using Microsoft© Excel©. Analysis was carried out on all the valid data to determine the response rate and then, to understand customers' perception by analyzing statements in the questionnaire (see appendix-B).

5.2.2 Response Rate:

The researcher selected the sample for the survey from current users of mobile communication companies. The data were collected by self - report questionnaires from several universities in Palestine. For data collection purpose, 800 questionnaires were distributed among students. Collected data was gathered from customers from February to March 2014.

The total response received was 360 from a sample of 800, which equates to 45%. After discarding the spoilt questionnaires or those with random repeated answers, a total of 290 were found usable for analysis. A valid response of 36.25% is an acceptable response rate for this type of survey [30].

5.2.3 Analysis of questionnaire:

It is a main issue to check the reliability of data before starting data analysis step in order to determine the credibility of analysis outcomes. Reliability checks whether or not respondents' selection for any indicator tends to be related to their selection for the other indicators [256]. The questionnaire was tested by fifteen participants to find out if it was understood easily or it needs more clarifications. They were asked to answer the research's questionnaire and check if any vague or confusing questions are found. Based on that, few comments have been reported and accordingly, the questionnaire was updated to be at the final state as in the appendix-B. The questions of scale have been translated from English to

Arabic by the researcher and approved by an academic interpreter. Supervisor of this research approved the final questionnaire's statements. Moreover, to validate Questionnaire's results, researcher adopted last option in question number (three) to validate answer on question number (two). The viewpoint of both Palestinian wireless operators and customers' perceptions enriched the discussion and strengthened research validity.

5.2.3.1 Respondents' Characteristics (demographic):

Demographic characteristics of customers who respond to this questionnaire are summarized as follows. Gender composition is roughly half and half with 49.4 % of men and 50.6 % of women as in the table-6 below.

Table (6): Respondents' Gender.

Gender	Frequency	Percentage (%)
Male	143	**49.4**
Female	147	**50.6**
Total	290	**100%**

This further implies that there was a good representation of both genders in the sample due to well distribution among customers. With regards to respondents' age, table -7 indicates that most of them were between 20 and 25 years constituting 84.8 %.

Table (7): Ages of Respondents.

Age	Frequency	Percentage (%)
Below 20 Years	20	**6.9**
20 to 25 Years	246	**84.8**
25 to 30 Years	24	**8.3**
Total	290	**100%**

With regards to academic status, table-8 depicts respondents' level of education. Most of them are students of Bachelor's degree 87.7 %. The rest are representing 12.3 %.

Table (8): Respondents' Education.

Education level	Frequency	Percentage (%)
Bachelor's degree	254	**87.7**
Master's degree	36	**12.3**
Total	290	**100%**

Findings from demographic data revealed that the length of wireless service usage appeared to be, more than 46 % of the total respondents have used their mobile phones for more than 5 years. This is a good indicator which means that they are familiar with the provided services from their wireless operators. Thus, their responses and feedback are valid and very important. Detailed results about length of usage are shown in table-9.

Table (9): Respondents' Length of Usage.

Length of usage (years)	Frequency	Percentage (%)
Less than 1 year	12	**4.1**
1 to 2 years	17	**5.8**
2 to 3 years	29	**10**
3 to 4 years	42	**14.5**
4 to 5 years	55	**19**
More than 5 years	135	**46.6**
Total	290	**100%**

5.2.3.2 Questionnaire Statements Analysis:

Statements in this section of the survey consist of seven questions (see Appendix-B) aimed to and understand and confirm three main topics as below:

1- Customer Feedback and requirements.

2- Priority of customers' voice.

3- Customers' opinion about their satisfaction.

In regards to questionnaires' results; Researcher found that around of 60 % of customers agreed that their Palestinian wireless operators respect and care about them. Table-10 below represents more details about the related question which is "operator you belong to cares about customers".

Table (10): Customer care

Operators Care about customers	Frequency	Percentage (%)
Extremely agree	36	**12.3**
Agree	138	**47.5**
Neutral	53	**18.5**
Disagree	45	**15.4**
Extremely Disagree	18	**6.3**
Total	290	**100%**

In addition, More than 54 % of customers confirmed that their Palestinian wireless operators have noticeable efforts to understand their needs and requirements. Distribution of responses about related question

"Your operator provides efforts to understand your needs?" was represented as in the table -11 below:

Table (11): Customers' Requirement Understanding.

Operators provide efforts to understand customers' needs	Frequency	Percentage (%)
Extremely agree	25	**8.6**
Agree	135	**46.3**
Neutral	54	**18.5**
Disagree	62	**21.6**
Extremely Disagree	14	**5**
Total	290	**100%**

However, 46.6 % of customers said that their Palestinian wireless operators take their opinion and feedback in the consideration. Table -12 contains details about this question "Your operator takes your opinion as a feedback to improve its services?"

Table (12): Customers' feedback.

Operators Take a feedback from their customers	Frequency	Percentage (%)
Extremely agree	18	**6.3**
Agree	118	**40.3**
Neutral	62	**21.4**
Disagree	71	**24.6**
Extremely Disagree	21	**7.4**
Total	290	**100%**

Based on these findings and related to the second wanted topic from the questionnaire which is "understanding priority of customers' voice"; 41.3 % of customers revealed that their expectations are met and fulfilled

by their operators, and received services from operators are satisfying them while, 44 % of them didn't agree on that. More details appear in table -13.

Table (13): Customers' Expectations.

Operators met your expectation	Frequency	Percentage (%)
Extremely agree	18	**6.3**
Agree	101	**35**
Neutral	43	**15**
Disagree	118	**40.3**
Extremely Disagree	10	**3.4**
Total	290	**100%**

Researcher aimed by this Survey (questionnaire) to find also priorities of customers' voice. Based on gathered results, Customers' voice rank is shown in table -14.

Table (14): Customers' voice rank

Customers' voice rank	Frequency	Percentage (%)
Lower cost	135	**46.3**
Better quality of service	80	**27.7**
Quick customer complaint handling	21	**7.4**
Better customer care	18	**6.3**
Nothing Will enforce me to Switch	36	**12.3**
Total	290	**100%**

Depending on the survey's results, the researcher noted that around 12.3 % of customers are satisfied with their operators as they confirmed. Thus they will not switch their current operators. Remaining customers 87.7 % explained their desired to switch their operators. Table 14 represents main reasons that most of customers seek to be loyal to their operator or to switch. Most of customers prefer operators who offer lower

service's price and then they consider quality of received services. Quick handling customers problem and customer care are at the lower rank based on opinion of Palestinian wireless communication's customers.

Figure below represents the above statements.



Figure (14): Customers' voice rank.

The third required objective or topic from the distributed questionnaires was to know the customers' opinion about their tendency to switch their operators. Around 53 % of customers said that they tend to switch their current operator while, 20 % of them will not switch. These percentages and other details were represented in table -15.

Table (15): Customers Switching.

Customers tend to Switch	Frequency	Percentage (%)
Extremely agree	64	**22**
Agree	89	**30.8**
Neutral	80	**27.5**
Disagree	54	**18.5**
Extremely Disagree	3	**1.2**
Total	290	**100%**

When customers were asked about their satisfaction level about the provided services from their current operator; around 52 % of customers mentioned that they are satisfied while, 20 % of them are not. Customers' satisfaction levels were shown in table -16.

Table (16): Customers' satisfaction levels.

Customers satisfaction level	Frequency	Percentage (%)
Very Satisfied	33	**11.2**
Satisfied	118	**40.7**
Neutral	81	**28**
Dissatisfied	37	**12.7**
Very Dissatisfied	21	**7.4**
Total	290	**100%**

As a conclusion of the questionnaire analysis, Findings can be summarized as follows. Customers in Palestinian wireless operators still expect high level of services in terms of quality and price. High expectations of Palestinian customers have not been affected even of special conditions and limitations in Palestine due to obstacles imposed by Israeli occupation. Moreover, Palestinian customers maximize their expectations by comparing between Israeli providers and Palestinian providers even, Israeli providers are considered as illegal competitors and

those providers have no limitations such as Palestinian providers. Palestinian wireless operators must tend to enhance their services to eliminate gap between actual perceived service and customers' expectations. Thus, operators will keep customers' loyalty and avoid the main risk imposed by customers switching factor. Deep discussions of these analyses will be presented in the next chapter in this research at chapter number six.

5.3 Summary:

In this chapter, analysis of the empirical research was represented , starting with the design of a structured questionnaire consisting of demographic data and seven statements to be rated in terms of intensity on a five-point Likert scale and then analyzing the responses received. Based on the results of the analysis, conclusions were drawn, some of which are presented in this chapter and will be discussed further in the next chapter.

This chapter reports the analysis of interviews and the survey conducted by means of questionnaires, which were sent to customers of Palestinian wireless mobile operators (Jawwal & Wataniya).

The obtained results are analyzed and some conclusions are formulated to help with the complete discussion to develop a risk management model. This model will be presented in details in the next chapter at chapter number Six.

Chapter Six

Data Discussion

6.0 Overview

6.1 Interviews' Results Discussion

6.2 Questionnaires' Results Discussion

6.4 Proposed Risk Management Model

6.5 Proposed Model Validity

Chapter Six

Data Discussion

6.0 Overview:

The last step in this research is taking inputs from data analysis, and discussing them to finally create recommendations to develop a model for risk management in Palestinian wireless communication operators. A list of success factors for risk management as discovered through the interviews was included in the developed model for risk management.

This chapter involves three parts; the first part is about the discussion of analysis obtained from interviews and questionnaires, the second part shows the developed and proposed risk management process, and the final one explains elements of the developed model and diagram of risk management.

6.1 Interviews' Results Discussion:

All obtained results from respondents during interviews will be discussed here to benefit from current practices in risk management and to be developed for proposed one.

6.1.1 Risk Management Identification:

Based on results from respondents; it was found that, their definitions for risk and risk management are similar to what is said and presented in the literature, that defined risk management as a discipline or system required to minimise the impact and cost to the organisation, in dealing with risks to which we are exposed, in a manner consistent with gaining our business goals [12].

To understand risk management, it is very important to know very well the objectives of the operator. One of the objectives for Palestinian wireless operators directed to maximize their market share. To achieve that, the number of their customers must be increased continuously. They must have a considerable effort in convincing customers to stay with them. Losing ownership of the customer was ranked as the number one risk in recent years and retains its top ranking [160]. The main risks that face mobile operators in this high competitive business environment are how to attract new subscribers and keeping the existing ones, especially young subscribers [179]. The effect of losing customers or their switching could be detriment on revenues and service continuity [11]. Therefore, to control and overcome this risk in a high dynamic competitive environment, Palestinian wireless operators should develop many strategies to respond to consumers' switching cost.

The analysis of results explained that customer loss can be handled and controlled by loyalty programs provided by operators with their services diversification. All of that will help in customer retention.

6.1.2 Risk Management Strategies:

For any business, strategies must be reviewed and updated periodically to keep successful growth. The role of the risk management function should include a policy and strategy for risk management [8]. Also, the business and corporate risk registers must be reviewed formally and updated annually as a part of the planning process in the corporate [12]. Based on interviews' analysis and as respondents revealed during interviews, risk strategies still immature in Palestinian wireless operators. So, the researcher recommends enhancing and improving them to be more documented and to be dependent on a reliable database. Costs and other effective factors must be taken into account when the preferred treatment strategy is selected [13]. Moreover, the key to successful risk assumption is allocating the required resources to overcome a risk, with some of specific management actions that may occur [18].

Activities of risk management in Palestinian wireless operators are updated in specific functions and departments but not in general for a company as a whole. Thus, a suggestion created by the researcher is to develop those updated process to be involved in the company as a whole and to be done frequently.

That is an important consideration during risk management activities to ensure that risk remains under control and accepted level [13]. All respondents agreed on the general treatment options that must be considered to handle the risk during the business strategy. Those are as in the following:

- Avoid the risk.
- Transfer the risk.
- Share the risk.
- Mitigate the risk.
- Accept the risk.

6.1.3 Risk Management Activities:

Depending on the size of the organization, the risk management function may vary in range from a single risk champion, a part time risk manager, to a full scale risk management directorate [13]. Firstly, interviews revealed that, there is no specific section in their companies for risk management in general. But, there is an assigned committee in some departments to be responsible about risk management activities. Moreover, in regards to findings obtained from interviews, researcher noted that, there is no key person assigned for risk management in the respondents' companies.

Findings from interviews revealed various detailed activities for risk management based on their related departments and responsibilities, but most of respondents stated the same general risk management frame or model. They started with risk identification then they quantify and assess the risk to prepare the suitable treatment action or strategy. After that, control actions are applied. To confirm that risk is controlled very well, they keep monitoring and evaluation. Researcher noted that, some of steps are depending on their experience and do not rely on specific techniques, while other steps are immature like getting feedback, documentation and periodically updating for those process and activities.

Even, each business unit must assign an officer to work as a central point for coordination and communication of risk identification, evaluation and awareness training and risk management assurance [12]. Comparing that with findings which obtained from interviews, researcher noted that, there is no key person assigned for risk management in the respondents' companies. Thus, researcher suggests the following which must be included as a role of risk management function:

- Having policy and strategy for risk management.
- Key person response for risk management at both of strategic and operational level [8].

Thus, based on best practices to manage the risk in Palestinian wireless operators, researcher noted from interviews that, operators need to

improve their risk management activities to be mature and to be not depending only on the experience. Also, they must get a potential feedback from their customers to understand closely their requirements and then to satisfy them. As a result, operators will prevent their market share. Moreover, documentation issue for risk management activities is very important to be considered and to create a reliable database to help in that issue. They must update all of those activities periodically.

An important reason for having sound risk management documentation is to help in the business risk assessments because the documentation is a good baseline for that. It is strongly recommended by researcher to evaluate all activities which included in risk management because related to literature review; evaluators who assess selected risk handling options may use the following criteria as a starting point for this task: "Does the selected option effectively reduce business risk to an accepted level?" [16].

6.1.4 Success factors in Risk Management:

The researcher believes that, the role of the risk management function should include building a culture within the organization by appropriate education about risk management [8]. Moreover, the scope of risk management activities will encompass risk management training for all employees in different levels [12] because; well trained and helpful employees can also provide positive switching barriers [187]. So, operators

must keep all employees in different levels in the company with a wide and general knowledge about risks and how they can deal with them to keep consequences under control or to eliminate them. Moreover, communication skills are considered very important to satisfy customers and creating a good relationship with them. So, special training and programs must be attended to improve this ability among employees because a communication skill is one of attributes that the image of the operator depends on.

As stated by the National Research Council, it is a meaningless value to do risk management functions if you cannot be properly shared the generated information with participants both outside and within the business [14]. Also, as other authors said that; the role of the risk management function should include preparing reports on risk for the organization's executive [8]. At the same time, operators should understand how importance of the feedback from customers during risk management process. Finally, as researcher suggests and confirms that, high commitment of both management and team to risk management activities is an additional factor for risk management success.

6.1.5 Customers' Relationships:

The main risks that face mobile operators in this high competitive business environment are how to attract new subscribers and keeping the existing ones, especially young subscribers [179]. Losing ownership of the

customer was ranked as the number one risk that may face any wireless communication operators [160].

Therefore, as revealed by respondents during interviews, it is a big challenging issue for operators to stay alive and gain the market share by making their customers more loyal to them. So, it was concluded and suggested from results that enhancing customers' trust will help in creating good relationships with them. Based on literature review, trust is a critical factor to build and maintain relationships between customers and providers [119] and it is found as one of the main factor for building relationship commitment and customer loyalty [57, 84, 85]. Trust can also reduce the risk facing a customer during the process of creating exchange relationships [84]. Moreover, customer loyalty must be controlled and considered during risk management process to keep the organization's main goals and to create strong relationship with customers. Operators' image will help to make this relationship with customers a very strong one. It is recommended based on analysis result to achieve customer retention by applying any of the following two ways. The first is by extending the contract with the supplier by the customer over a specified period of time or by subsequent purchases. The second is by customer intention to make future purchases from the provider [165, 166]. However, perceived value, quality and trust are found to have a significant positive impact on the loyalty of the customers [140]. Therefore, all mobile providers must create

customer commitment by providing service to their customers with a high good quality.

Moreover, results investigated the factors that cause mobile phone customers to change from being loyal to switching, such as price, service quality, switching costs, etc. Among those factors, price is the most important factor which affects the customers to switch loyalties to another provider [88, 159]. Besides that, operators should deal carefully and directly with consumers' complaints to reduce the chance of the negative behavior that may occur accordingly, such as bad-word of mouth, complaints to others, and switching to the competitors [156, 157]. At the same time, customer relation management (CRM) topic as revealed during interviews still immature, it was in process and need to be developed in Palestinian wireless operators. So based on results, it is strongly recommended to develop, update and moderate this topic and strongly invest in this issue.

Furthermore, wireless operators are losing 2-4 percent of their customers monthly; who cause millions of lost revenue and profit. Therefore, implementing E-CRM can help to provide services based on customers' need [45]. Thus as a brief conclusion, operators should create long customer relationships depending on many factors that they must understand and follow like as examples, trust, image, customer loyalty, quality, price, complaints handling and E-CRM.

6.1.6 Risk Management Tools and Indicators:

The key of risk monitoring process is to establish indicators which help in evaluating the operator status by managers and other key personnel. Indicators should be designed to provide early alarming of potential problems to allow fast management actions. As respondents agreed during interviews that their operators must evaluate and monitor periodically risks which are determined as acceptable to ensure that it remains under control and accepted level. They do that based on risk registers or sometimes based on historical data base.

Researcher recommends many techniques to be used during evaluation and identification of risk activities. Some of those techniques are What If Technique and the Next Accident Assessment. Both of them are explained in details in chapter number two in this research. In addition, effective complaints receiving activity will be a good indicator about customer tendency if they tend to switch or not. Based on literature review, handling customers' complaints is an important factor to satisfy customers and to solve their problems.

Customer relation has evolved since 1960s to become nowadays a customer relations department after it was previously regarded only as a customer complaints management section [53, 54]. Therefore, a company must ensure their customers loyalty by effective complaint handling procedures to reduce the desire for customer defection [61]. Moreover, the

third party like consultants could help in this issue based on their long experience in this field. To monitor risk management results and to evaluate if risk management effectively reduces or eliminates the bad impact of risk. The following two methods are recommended by researcher [16]:

- Earned value (EV) which uses standard cost/schedule formula to assess a business's cost performance (and give a pointer to the schedule performance) in an integrated fashion. Thus, you can by that determine if risk handling actions are achieving their planned results.

- Technical performance measurement (TPM) is a product design evaluation, which evaluates the values of important and primary performance parameters of the existing design as affected by risk handling process. That evaluation occurs through engineering analysis and tests. Finally, researcher agrees that, to get an effective monitoring for the performance of selected risk handling approaches and developing new risk assessments; the person who is responsible for risk management needs to have a good-defined test and evaluation process. This is often considered a key factor in risk monitoring process.

The important concept in risk management is the awareness and continuous study with good knowledge of wide risk areas [15].

6.1.7 Obstacles of Risk Management:

Innovation is considered as the lifeblood of the mobile field as respondents said during interviews. In fact, mobile phones will be the dominant internet access device by 2013. By then, there will be around 1.82 billion smart phones and browser-equipped devices, besides 1.78 billion PCs. [72].

The key benefit of used technology in services is the possibility to personalize and customize [109]. This will make the customer have a feeling of being special and thus, he or she will be targeted directly by a company. The advantage of technology use regarding loyalty for a company is that huge amount of data about the behavior of customers which are collected. Data offers the opportunity to know good information about the customers in general and use this knowledge for building customer long time relationship with the loyalty and thus avoiding the risk that may come from this factor [221]. Technological changes have moved competition from price or core service to value-added services [222].

Palestinian wireless operators suffer from occupation's regulation and constrains which cause in technical problems. Wireless technologies are not up to date and the required equipment needs the permission from Israeli part to be imported to the Palestinian side. Obstacles by Israeli occupation affect negatively the Palestinian companies' strategies and plans. There are unclear political restrictions towards new equipment

entrance to Palestinian side, beside other restrictions towards adopting new technologies and using frequency spectrum for wireless communication.

Thus, researcher believes and suggests that Palestinian wireless operators must overcome all of these obstacles by effective resources utilization and to produce the best of high quality services within the available technology. In addition, all respondents explained how much illegal competitive from Israeli operators and unfair occupation's regulations can affect negatively on Palestinian operators. Many times, strategic plans and activities are changed accordingly to overcome arising problems from that. Interviews' results confirmed that surrounded environment specially the competitive one and economical scale changes are significant key factors that must be considered to keep business growth and survivals. That can be handled by good customer relationship strategies and providing suitable offers with high quality of services to keep the market share and react with the competition from other operators.

6.2 Questionnaires' Results Discussion:

Evaluation of customers feeling about their operators is a very important issue to understand their requirements to be then customized. All of that is very important to avoid customers churn which is considered as a main risk factor on wireless operators [160]. Results obtained from Palestinian wireless operators and customers' perceptions enriched the discussion and strengthened research validity.

6.2.1 Respondents' characteristics Discussion:

It is noticeable from questionnaires distribution that gender composition is fairly mixed which further implies that there was a good representation of both genders in the sample due to well distribution among customers. Youthful customers represented 84.8% of the valid and accepted responses, with around 88% of them are students of bachelor's degree. Those are really the heavy users who potentially understand the pace of communication progress and its rapid growth. Moreover, it is good to take the feedback and opinion from the experienced customers who really deal with operators for a long time and thus they are familiar with the provided services and understand exactly what they need as a high priority of their requirements. So, more than 46% of total respondents have used their mobile phones for more than five years.

6.2.2 Questionnaires' statements Discussion:

Some of interviews' questions were to check if operators take a feedback from their customers and if they really understand their requirements. In addition, interviews aimed to know how operators see and evaluate their customers' satisfaction level. All of that were double checked by questionnaires' questions. Those will be confirmed and discussed based on questionnaires findings as below. All of Palestinian wireless operators believe that their customers are satisfied with their services. Here is also the same confirmation obtained from customers during the survey. Around

52% of customers mentioned that they are satisfied with provided services from their operators.

In regards to findings from questionnaires, question number five and number six revealed that, more than 54% of customers confirmed that their Palestinian wireless operators have noticeable efforts to understand their needs and 46.6% of customers agreed that operators take their opinion and feedback in the consideration. Moreover, question number one showed us that around 60% of customers agreed that their operators respect and care about them. Thus, as a result, more than 41% of customers stated by question number four that, their expectations are met and fulfilled by their operators, and received services are satisfying them.

Important thing that operators must understand carefully is that, their customers tend to switch to another better operator (around 53%) based on question number two. They will switch to another operator according to question number three, if they found lower cost (46%) or better quality of services (28%). Thus, the researcher advices both of Palestinian wireless operators to concentrate more and more on reducing the cost of calls' tariff to achieve the customers' desire of having the lower cost and offer. Also, at the same time, providing a good quality of services is a core issue for operators to keep their market share and to gain their customers retention. Researcher suggests to understand deeply what customers need and to have a clear communication channels with those customers by a good

communication skills to meet customers' expectation and to avoid their loss which is not accepted at all because, it is considered as a main risk in wireless operators as cited before in this research.

Around 53% of customers tend to switch their operator as revealed in question number (two), but 52% of them are satisfied based on question number (seven) findings. The explanation of that is, most of them are satisfied based on their opinion depending on the current condition and situation but generally, if they find any better services, then they will switch. Researcher understands that, customers are currently happy with their operators but their operators must provide a noticeable effort to keep their customers loyalty and happiness to prevent any possible switching in the future, and to understand their voice and requirements based on question number three. Moreover, Based on analysis of question number (two), around 20 % of customers haven't any tendency to be switched. While only 12.3% of them who really don't think about changing their current operators based on result of question number three. Researcher understands from that, 12.3% of customers are absolutely support received services from operators and they are strong loyal customers, but the remaining 8% of 20% of customers will switch their operators in future when they find any better price or quality in general.

Based on that, it is suggested strongly applying effective plans and strategies for customers' switch barriers concept. Also, operators need to

gain their market share by keeping their customers very loyal to them. Moreover, documentations of customers' feedback are very important to understand customers' need and to avoid their risk that will face Palestinian wireless operators due to customer churn.

6.3 Proposed Risk Management Process:

Risk management process is formulated based on literature reviews and empirical data outcomes obtained from both wireless operators and their customers. It has evolved to make it user friendly. Based on the analysis and discussion of questionnaires and interviews, it can be concluded that Palestinian wireless operators must manage the risks associated with the wireless communication field. So, to be able to manage risk effectively, Palestinian wireless operators require a developed risk management process and model to meet the specific needs of the communication field. It is further recommended that those operators in Palestine implement a risk management process and model. It can be concluded from the analysis conducted and discussed in this research that, the following objectives have been achieved:

- To conduct interviews to determine those risks that should, from managers' perspective, be managed.
- To draw conclusions from the empirical analysis of the data underpinning the risk management model, and to make

recommendations regarding its implementation by Palestinian wireless operators.

To reduce risk, clarity is needed regarding where the risks are and to obtain choices or strategies to tackle those risks. The process of risk management is shown below.

Risk Management

Step 1: Objectives definition

- The objectives of each operator must be clear for all departments and employees.

Step 2: Risk Identification

- Identify all possible risks and all potential sources of risks.
- Well trained employees will help in that.

Step 3: Risk Quantification

- Determine the probability of occurrence (P) and ability to detect risks (D).
- Estimate the financial and performance impact (Severity).

Step 4: Risk Assessment

- Use risk assessment matrix based on {Severity (S) and probability (P)}.
- Calculate the Expected value = S*P.
- Calculate Risk Priority Number (RPN) = S*P*D.
- Determine the most significant risk in order of highest value of the above calculation.
- Decide based on that which risks are significant to the wireless operator.

Step 5: Risk Sources and causes Identification

- Find out the causes of those significant risks.
- Use one of the following techniques: {What if analysis or Next Accident assessment}.
- Refer to historical data or professional documents in this topic.

Step 6: Risk Response Development

- Develop and decide on a strategy to handle and reduce the possible damage of the risk (Mitigate_ Transfer_ Avoid_ Share_ Accept).
- Develop contingency plans _ just in case_ to be implemented if risk occurs even preventive process and activities have been applied.

Step 7: Risk Control and implementation

- Resources allocation.
- Implement the selected strategy.
- Manage activities and process involved by selected strategy.
- Change management.

Step 8: Risk Monitoring

- Monitor and re-evaluate the risk with its severity by using {KPIs, TPM, Economical scales and Complaints}.
- Update Risk management plans for any future changes or new risks.
- Apply documentation and reporting.
- Refer to customer feedback and received complaints and then update step number four.
- Update step number two frequently based on this step.

6.4 Proposed Risk Management Model:

As stated previously in this research that, its primary objective is to develop a risk management model for Palestinian wireless operators that will enable them to manage associated risks by means of risk identification,

risk assessment, risk response development and risk response control. In this section, the proposed model will be shown and briefly discussed.

Risk management models can be constructed in various ways, for example using flow diagrams, mathematical models or simple means such as tables and spreadsheets. The model proposed as part of this research will be kept simple and will be presented using flow diagrams format. Any operator then has the opportunity to select only those risk items that are identified for this operator at any particular point in time. In the following, the risk management model will be shown.

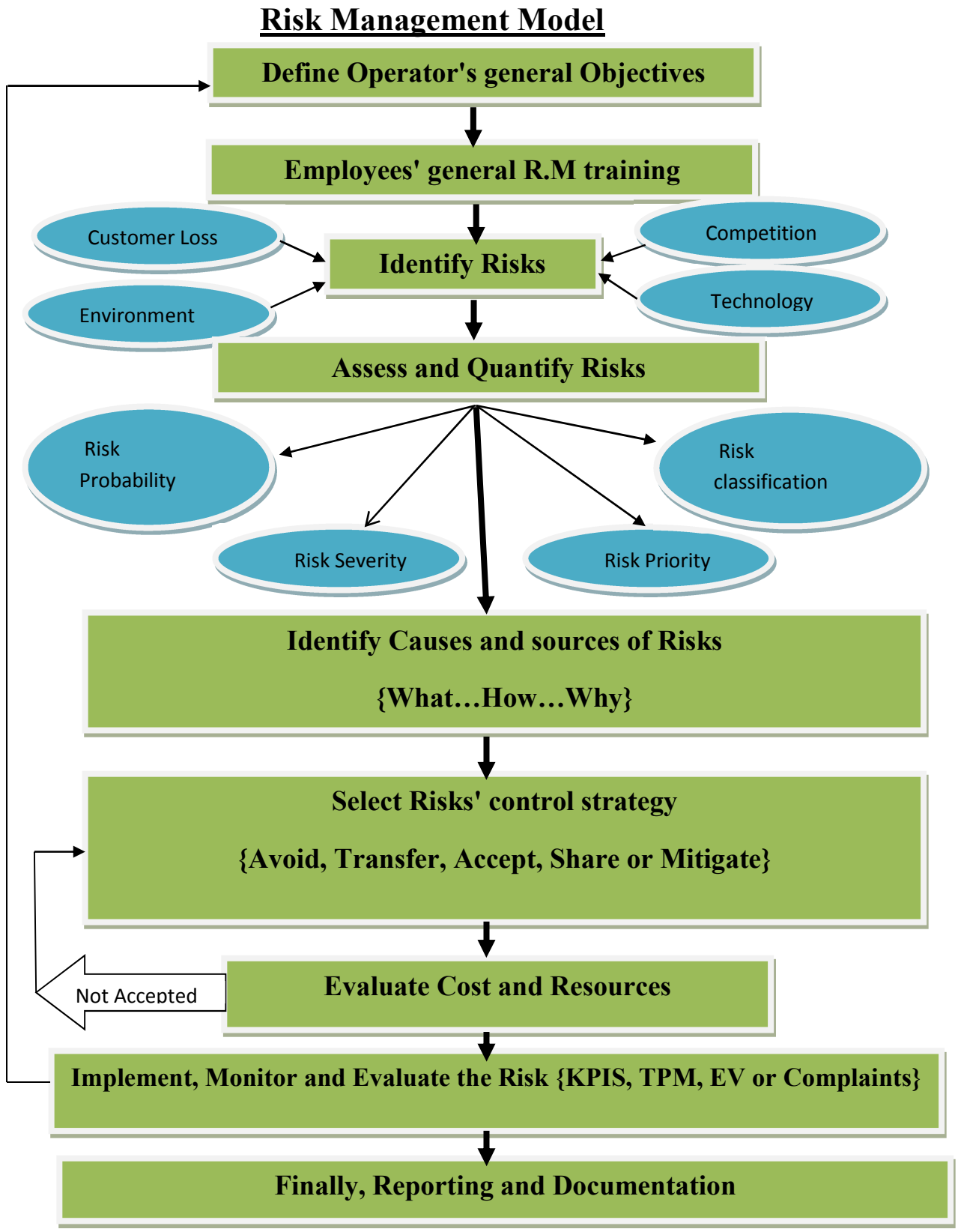


Figure (15): Proposed Risk Management Model for Palestinian Wireless Operators.

6.5 Proposed Model Validity:

For the purpose of research result validation, the researcher returned back to Palestinian wireless communication experts, to evaluate the proposed model for risk management and how it is suitable for them in Palestine. Four experts has been selected for this purpose, all of them were among the eight experts whom met during Interviews. Those experts accepted the proposed model, and mentioned that it is suitable for them. They added that it is easy to be understood and flexible to accommodate their ambitions. They accepted detailed process and believed benefits arising from this model. In addition, they agreed to start thinking about employees' training and to create more efficient documentations.

Chapter Seven

Conclusions and Recommendations

7.0 Overview

7.1 Research Conclusions

7.2 Research Implications and Recommendations

7.3 Theoretical Contributions

7.4 Research Limitations

7. 5 Directions for Future Research

Chapter Seven

Conclusions and Recommendations

7.0 Overview:

This chapter examines the study's findings in relation to the research objective. The purpose of this chapter is to draw conclusions from the literature review and empirical research before it addresses the main objective of this research which is the development of the risk management model. It also contains the suggestions, recommendations and possible future research. Contributions of this research to the body of knowledge and practice are also addressed. This is followed by a review of the research's limitations and difficulties. With this in mind the chapter is structured along three main topics. Firstly, the introduction will briefly review the research objectives that have been achieved. Secondly, the main findings from the literature review and the empirical research are reviewed. Thirdly, the contribution to the body of knowledge and to the wireless operator in Palestine is briefly discussed with some directions for future research. As indicated at the beginning of this research, the main goal of this research is to develop a risk management model for Palestinian wireless operators. To achieve the main goal, the following objectives have been set:

- To explore relevant existing theories and approaches related to risk and risk management and control, as they affect mobile businesses in general.
- To analyze and study the main risks that face mobile companies in Palestine which involves some of the following:

  - Immaturity of customer loyalty.

  - Constraints of new technology providing.

  - Difficult environment conditions.

- To study the existing risk management practices in the Palestinian communication companies.
- Build up a comprehensive system for the risk management based on literature findings, current Palestinian practices and research's outcomes.

This research explored risk management, an area of theoretical knowledge and professional practice in Palestinian wireless operators. Importantly, this research offers a starting point for the better implementation of risk management by those operators.

7.1 Research Conclusions:

The research revealed that all Palestinian wireless operators are required to be more aware of risk management as a strategic plan and objective. However, the majority of respondents believed that risk management is very important and they must implement risk management in their normal practice. This research identified that the levels of knowledge and development of risk management among Palestinian wireless operators and their customers in Palestine were low. Analysis results from this research revealed broad and significant agreement on the importance of risk management in Palestinian wireless operators.

The findings also showed that, Palestinian wireless operators implemented risk management activities in very similar ways as suggested in the literature. Some activities were missed and some others were immature. This study suggested that, for risk management to be successful in the business, Palestinian wireless operators must understand and know their customers' needs and behaviors in-depth, and to involve all employees in related training. Moreover, feedback from customers is very important to be included and updated periodically to keep success touch with customers that will help in satisfying them. In addition, documentation and reporting must be done professionally and all risk management activities must be updated and reviewed frequently and periodically. All that is very

important because wireless communication field is changing radically and it is becoming the nerve of the life nowadays.

The research consisted of two parts; the first part was a study of the current risk management practice of wireless operators in Palestine, while the second part was concerned with a customers' perception and feeling about their Palestinian wireless operators and their priorities with requirements. The final step was to recommend a development risk management model for Palestinian wireless operators.

Generally, it is concluded that current risk management concept is still immature for many reasons; competition of Palestinian wireless communication operators is recent to the market. Obstacles by Israeli occupation that affect negatively the Palestinian companies' strategies and plans are other reasons for the process immaturity. There are unclear political restrictions towards new equipments entrance to Palestinian side, beside other restrictions towards adopting new technologies and using frequency spectrum for wireless communication. Finally; most of the time, Palestinian wireless operators react to Israeli providers, who are competing illegally and providing wireless services to Palestinian subscribers without respect to international agreements. The second part of research is customer perception analysis that aimed to understand their requirements and their satisfaction level. Thus, Findings of the questionnaire analysis demonstrated that Palestinian wireless operators must tend to enhance their

relationships with customers and their provided services with best offers to eliminate gap between actual perceived service and customers' expectations. Therefore, operators must keep customers' loyalty and avoid the main risk imposed by customers switching factor.

Finally, researcher believed that the proposed risk management model should be built and successfully implemented by Palestinian wireless operators. Such model considered evolving of wireless communication field and compromising of different circumstances.

7.2 Research Implications and Recommendations:

This is the first study of its kind in the wireless communication field in Palestine. It presents and adds knowledge to the field of risk management strategy in general. Therefore, this study establishes that wireless communication companies should continually strive to improve and maintain good customers' relationships by deploying customers' loyalty programs based on good understanding of specific customer needs. Based on research's findings, wireless operators in Palestine did not utilize databases in a systematic fashion which has specific practice implications. Those operators need to develop systematized database about customers to increase customer satisfaction and loyalty. Therefore, they must consider this issue as a main part in the risk management activity. Moreover, managers must significantly consider customers' switching barriers when making their plans or focusing efforts in customer retention.

Concerning risk management conceptually, the researcher suggests that operators need to approach risk management activities more professionally to capitalize on its benefits. If operators fully understood risk management activities, they would implement it more strategically, systematically and professionally. The researcher advices Palestinian operators by this study a very important thing which is a documentation issue to be included in their main risk management activities.

One of the main obstacles of wireless communication field in Palestine is related to Israeli occupation. Wireless operators have to consider another plan to reduce the impact of restrictions by the occupation. On the other hand, operators have to support every effort aimed to demonstrate restrictions imposed by Israeli occupation on the Palestinian wireless communication field in various international hubs. This could be achieved by supporting related researches and studies that reveal the impact resulted from the occupation restrictions and obstacles. Risk management activities must be updated or modified within the wireless operator periodically. In the other words, the continuous development of the activity is vital to sustain future improvement. However, interviewees commented on the importance of periodic risk management strategies review towards overall success of the process. Finally; research's results considered feedback from customers as a trigger towards very well throughput during continuous iterations.

7.3 Theoretical Contributions:

This thesis provided significant and potentially influential contributions to the practical knowledge of risk management in the wireless communication field in Palestine. It is the first research of risk management and risks' impacts on Palestinian wireless operators. The following points allude to some of those research's original and unique contributions.

- This research identified some types of risks that could have an impact on the Palestinian wireless communication field.
- This research demonstrated for Palestinian operators that lowering the cost of call's tariff is the most significant factor to keep customers loyal to them.
- Moreover, this research revealed that it is a very essential action to update periodically Risk management activities to be more mature and to concern professionally the customers' feedback.
- This research explained to Palestinian wireless operators how much is important to involve all employees in all levels in risk management wide and general knowledge after training them very well about that aspect.
- It is discovered by this research that in Palestinian wireless communication field, a good relationships with customers and

understanding their needs are a vital thing in establishing their retention and trust.

- One of the most interesting findings of this study was that risk management is an important function in maintaining, not only gaining, customers' loyalty to Palestinian wireless operators because one of risk management activities is referring to customer feedback that will help to closely understand their requirements and thus satisfying them to finally achieve their loyalty which was seen as highly beneficial to the wireless operators.

- The development of a comprehensive model for risk management that suits the environment of Palestinian wireless operators as a part of the Palestinian services industry.

Finally, this thesis has satisfied all the research objectives originally proposed.

In summary, the research did not only confirm that risk management had a demonstrable impact on wireless operators' behavior in Palestine, but also constructed a more nuanced understanding of that aspect, thus contributing significantly to the existing body of theoretical and practical knowledge of risk management in Palestine.

7.4 Research Limitations:

This research has some limitations that can be summarized as below:

- Time limitation, the total time available for the research was very limited. It is difficult to keep on schedule as the planned of the research work because the researcher maintains full-time employment while doing the research. Time limitation in researches and studies is the most commonly cited limitation, and this research was no exception. With flexible time, contributions from the respondents would have been greater and the outcomes are more in-depth. The issue involved hard time management to meet schedules of both the selected respondents and the researcher. Moreover, as the researcher was employed full-time as said before during the research, maintaining timetables became very complicated. However, implementation required considerable and noticeable efforts and time.

- Interrupted interviews were another kind of limitations. All managers were very busy with limited time available for interviews. Consequently, this pressure sometimes affected their concentration and also the natural flow of interviews may be sometimes affected.

- Moreover, interviews have their own intrinsic limitations as well as advantages. Its advantages were gaining access to core feelings and thoughts, which was an important issue to obtain deeply the required

information. However, implementation, particularly transcription, required considerable time and efforts.

7. 5 Directions for Future Research:

There are many future research issues and topics emerged from this research and can enrich current findings. It is recommended to have further investigations in the following areas:

- This research has concentrated on managing risks that are likely to occur and their impacts on the wireless operators. As the different fields may be affected differently by the various risks that may happen and will thus rate the significance differently, it is recommended that an analysis of the risks in the different fields of the business in Palestine should be conducted.

- Although this research confirmed that risk management is important to keep customers' loyalty to Palestinian wireless operators. Further research is required to develop an in-depth understanding of customers' needs, expectations and behaviors and how they might be induced to strengthen their loyalty towards staff and Palestinian operators.

- The influence of risk has been documented poorly in Palestinian operators. However, future research is required to study the real

advantages of professional documentation on risk management success.

- Specific research about competitions and challenges of wireless communication in Palestine is recommended. And discussing the role of Palestinian wireless communication regulator in managing the risk.

- This research found that "Trust" was crucial in wireless communication field; the researcher recommends a further definition and exploration of this attribute in those operators. Investigation would cover the factors influencing trust and its measurement in this field. Clearly, this would present interesting results.

- Further future studies could investigate whether and how risk management creates competitive advantages in different Palestinian services sectors. The outcome from this research could provide a starting point for the development of a general model of best risk management practice in Palestine.

- More research about obstacles by Israeli occupation toward wireless communication field in Palestine, and how it can impact this business performance and overall economy in Palestine.

- From a methodological point of view, data in this research were obtained from universities' students. It would be useful to obtain a broader sample of respondents in future studies.
- New research to investigate characteristics of the customer loyalty factors, and how it can impact development of risk management in Palestinian wireless operators.
- It is necessary to do an empirical research to understand deeply customer relationship management within an internet or e-commerce context.
- Specific research about trends of wireless communication field in Palestine during the coming 10 years.

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Appendices

Appendix- A

Interview's Questions for Managerial level In Mobile Communication Comp.

1) How do you define Risk and Risk Management (R.M) from your experience and perspective?

1.1) how important is R.M to your Comp.?

2) Does your Comp. have a clear strategy to deal with different types of risk?

2.1) which treatment strategy your Comp. follow to manage risk?

2.2) Does your Comp. take the cost into account when it selects the preferred treatment options?

2.3) Does your Comp. allocate the required resources to handle risk based on strategy or treatment option that be selected?

3) Is there a specific office or section in your Comp. for R.M activities?

4) Does your Comp. have a key person for R.M?

5) Does your Comp. train employees for R.M aspects?

6) Are the goals and objectives of the Comp. very well known and identified?

7) Do you agree that communication skills of the employee are important attribute of the company image?

8) How does your company define and recognize the list of different types of risks? Is it periodic activity?

8.1) State common risks your Comp. encounters during risk definition?

8.2) What is the main risk that considered by your Comp. when identifying the risk?

8.3) Does your Comp. have good business strategies to overcome this main considered risk?

9) What are the involved activities that your Company follows to deal and manage the risk that face mobile communication field?

9.1) Do these activities effectively reduce the risk to the acceptable level?

10) What are the indicators that your Comp. follows to determine and to evaluate risk?

11) are risk strategies evaluated, reviewed and updated formally and periodically?

12) does your Comp. document the reason of risk and report clear decision about the risk?

12.1) does your Comp. refer to these documentations (if any) for further risk assessment?

13) does your company get a feedback from its customers during defining the risk?

14) how can your company build a good relationship in order to retain existing customers and to keep their loyalty?

15) Is your company concerned with Appling new technology to its customers? do you consider not up-to-date technologies as a risk?

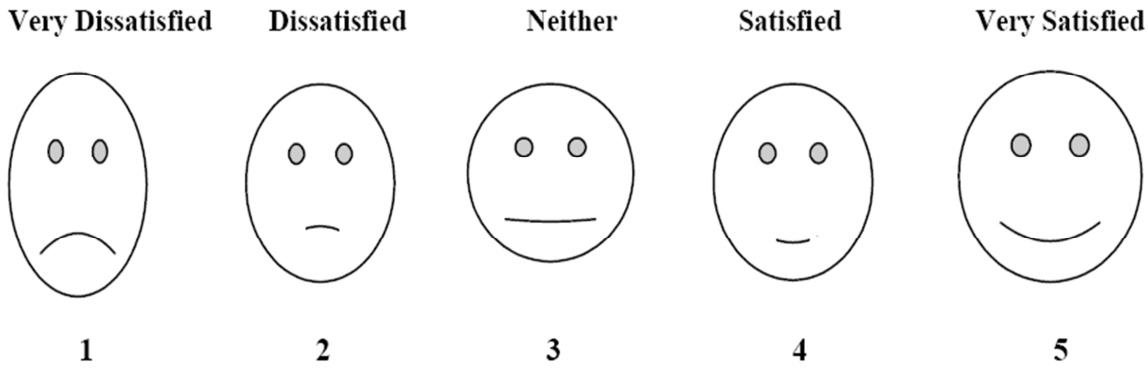
16) does your company prefer winning new customer, or caring for current customers as a top priority?

17) does your company have an Electronic Customer Relation Management (E-CRM) to improve provided customer services?

18) does your company have a clear process and specific section to deal carefully and immediately with customers' complaints?

19) are the competitive environment and economical conditions affect your Company's strategies and plans? How does it deal with them?

20) how can customer satisfaction with your service quality be described from your company perspective?



Thank you for your valuable time you gave to complete this Interview.

Appendix- B

Questionnaire for Customers Of Mobile Communications



Dear Mobile Operator's Customer;

Thank you so much for agreeing to participate in this questionnaire. The purpose of this research is to develop a model for managing the risk in mobile communication in Palestine. This questionnaire will be used to gather required information from customers in mobile communication field in Palestine. Your responses will be treated confidentially and used only for academic purpose.

Information from this questionnaire will be used to help in writing the outcome of this thesis about managing risk in mobile networks companies in Palestine. I am a master's student of An - Najah National University. I confirm that respondents' anonymity is fully assured and that your participation in this research is voluntary.

بعد التحية...

أنا الموقع أدناه (أحمد معزوز الحاج علي) أقوم بتحضير أطروحة لنيل درجة الماجستير في الإدراة الهندسية في جامعة النجاح الوطنية بعنوان **(تطوير إدارة المخاطر في شركات الإتصالات الخلوية في فلسطين)**.

وبناءا على ذلك أود معرفة رأيكم في بعض التساؤلات ذات العلاقة بموضوع الدراسة بهدف إثرائها و تعزيزها. وعليه أود التأكيد لكم أن غرض الدراسة لا يتعدى البعد الأكاديمي، و أن جميع المعلومات والإستفسارات تهدف إلى المساعدة ت ه ا را .

و تفضلوا بقبول فائق ا حترام. الباحث/ احمد

الحاج علي

A: Institutional Information.

1) gender? [ ] Male [ ] Female

2) age group

[ ] below 20 years [ ] 20-25 [ ] 25-30 .

3) education level?

[ ] Bachelor's degree [ ] Master's degree or above.

4) duration of using your operator's services?

[ ] less than 1 year

[ ] 1-2

[ ] 2-3

[ ] 3-4

[ ] 4-5

[ ] more than 5 years.

B: Questionnaire Statements.

1) The operator you belong to cares about customers.

[ ] Extremely agree [ ] agree [ ] Neutral [ ] Disagree [ ] Extremely Disagree.

2) You have the intention of switching to use a better operator's services.

[ ] Extremely agree [ ] agree [ ] Neutral [ ] Disagree [ ] Extremely Disagree.

3) I will switch to another operator if I find: (select one of them)

[ ] Better cost (Lower)

[ ] Better quality in the service.

[ ] Better customer care .

[ ] Quick customer complaint handling.

[ ] Nothing will affect my retention to my operator.

4) Received services from your operator met your expectation.

[ ] Extremely agree [ ] agree [ ] Neutral [ ] Disagree [ ] Extremely Disagree.

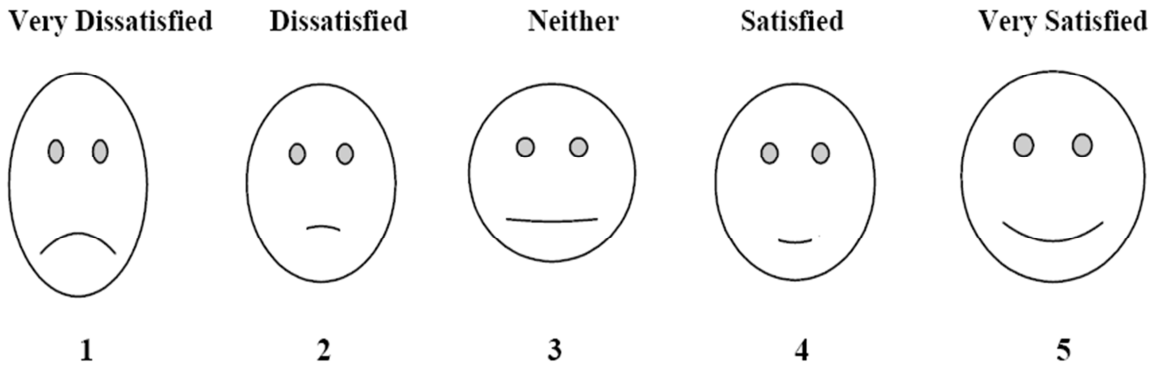
5) Your operator provides efforts to understand your needs?

[ ] Extremely agree [ ] agree [ ] Neutral [ ] Disagree [ ] Extremely Disagree.

6) Your operator takes your opinion as a feedback to improve its services?

[ ] Extremely agree [ ] agree [ ] Neutral [ ] Disagree [ ] Extremely Disagree.

7) What is your overall satisfaction with provided services from your operator? (Select)



Thank you for your valuable time you gave to complete this Questionnaire.

Appendix- C

استبانة لرأي المشتركين في شركات الإتصالات الخلوية في فلسطين



بعد التحية...

أنا الموقع أدناه (أحمد معزوز الحاج علي) أقوم بتحضير أطروحة لنيل درجة الماجستير في الإدراة الهندسية في جامعة النجاح الوطنية بعنوان **(تطوير إدارة المخاطر في شركات الإتصالات الخلوية في فلسطين)**.

وبناءا على ذلك أود معرفة رأيكم في بعض التساؤلات ذات العلاقة بموضوع الدراسة بهدف إثرائها و تعزيزها. وعليه أود التأكيد لكم أن غرض الدراسة لا يتعدى البعد الأكاديمي، و أن جميع المعلومات والإستفسارات تهدف إلى المساعدة في صياغة توصيات هذه الدراسة .

و تفضلوا بقبول فائق الإحترام.

الباحث/ احمد الحاج علي

 # المعلومات الشخصية:

1) ا___ : [ ] ذآ [ ] أ .

2) ا___ :

[ ] أ 20 [ ] 20 -25 [ ] 25 -30

3) ا___ ى ا___ :

[ ] ر س [ ] .

4) ___ة ا ا ا ا ___ :

[ ] أ 1

[ ] 1 - 2

[ ] 2 - 3

[ ] 3 - 4

[ ] 4 - 5

[ ] 5 ات آ .

 # أسئلة االإستبانة:

1) ا ا ي آ .

[ ] أوا ة [ ] أوا [ ] رأي [ ] أ ض [ ] أ ض ة.

2) ا أ م أ .

[ ] أوا ة [ ] أوا [ ] رأي [ ] أ ض [ ] أ ض ة.

3) م ا وا ل ا ل و ت:

[ ] أ (أ) .

[ ] دة أ .

[ ] أ .

[ ] ا وى ا آ .

[ ] آ ا ا .

4) ءم و ا ا ت ا ي ا ا ي

[ ] أوا ة [ ] أوا [ ] رأي [ ] أ ض [ ] أ ض ة.

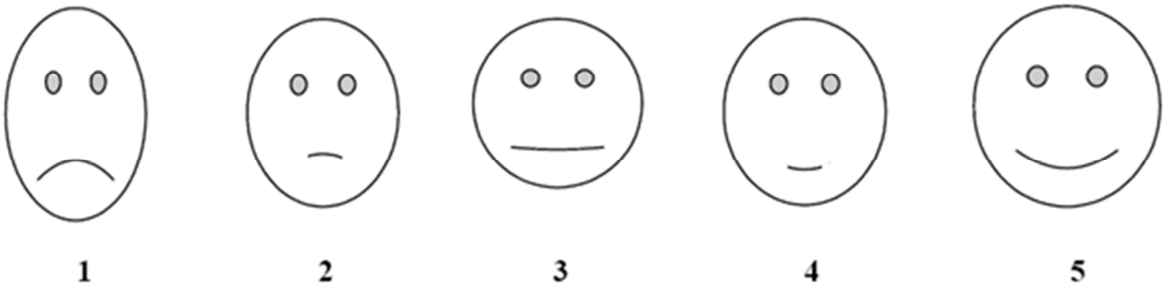
5) ا ا ي ل دا وا ا ت ا آ

[ ] أوا ة [ ] أوا [ ] رأي [ ] أ ض [ ]
أ ض ة.

6) ا ا ي ص أ رأي ا آ أ ا ت

[ ] أوا ة [ ] أوا [ ] رأي [ ] أ ض [ ]
أ ض ة.

7) د ا ل أد ى ر ك ا ت ا ا ي



ا و وو ا ي رآ إ م ه ا .

جامعة النجاح الوطنية
كلية الدراسات العليا

تطوير ادارة المخاطر للشركات الاتصالات الخلوية في فلسطين

"دراسة خاصة لجوال و وطنية"

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إشراف
د. أيهم جعرون

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.

2014م

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إشراف

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الملخص

تزداد أهمية ادارة المخاطر في معظم قطاعات الأعمال في العالم، كما و أن سمعة الشركات والمؤسسات تعتبر عامل مهم ليس فقط للنجاح غلى مستوى الجمهور، بل تتعدى ذلك الى المستثمرين والشركاء والموظفين. قطاع الأعمال بشكل عام يتعرض لأشكال متنوعة من المخاطر.

قام الباحث في هذا البحث بتفحص المواضيع المتعلقة بالمخاطر وكيفية ادارتها، وفي نفس الوقت قام بمراجعة ما تم كتابته سابقا حول هذا الموضوع، فبعد دراسة أنواع متعددة من المخاطر التي ممكن أن تؤثر على قطاع الاتصالات الخلوية الفلسطينية وكذلك دراسة الخبرات العملية العالمية المتبعة لادارة هذه المخاطر، بدأ الباحث بالتعرف على استراتجيات وطرق ادارة المخاطر المتبعة في شركات الاتصالات الخلوية في فلسطين، حيث ان الدافع وراء هذا البحث هو الحاجة لتطوير نموذج لادارة المخاطر المتعلقة بقطاع الاتصالات الخلوية الفلسطينية وخاصة في ظل ظروف البيئة التنافسية القوية والمتغيرة تحت ظل الاحتلال الاسرائيلي. اتبع الباحث في هذه الرسالة نهج بحث علمي مختلط من خلال اجراء المقابلات مع خبراء فلسطينيين في مجال الاتصالات الخلوية لدراسة الواقع العملي حول هذا الموضوع في هذه الشركات، وبعد ذلك تم طرح استبيان للجمهور لفهم احتياجاته ومعرفة مدى رضاه.

بعد تحليل البيانات توصل الباحث أن عملية ادارة المخاطر في هذه الشركات قد أعدت داخليا ولكنها غير ناضجة كما يجب، وتحتاج لتطوير وتحسين، ولذا كان الهدف من هذه الرسالة

هو صياغة وتقديم نموذج متطور ومناسب يعتمد عليه في ادارة المخاطر في هذا القطاع في فلسطين، علما أن شركة جوال و شركة الوطنية للاتصالات الخلوية كانتا هما محور وتركيز هذا البحث ونتائجه. ان هذا النموذج سيساعد هذه الشركات على تحيق ميزاتها التنافسية ونموها في هذا المجال. لقد كانت هذه الدراسة هي الأولى من نوعها في هذا المجال في فلسطين، وقد بينت أهمية التطوير المستمر لعملية ادارة المخاطر الى جانب الاهتمام بعمل قاعدة بيانات بشكل مهني ، مع أهمية الرجوع لرأي الجمهور.ومما أشارت اليه كذلك هو الحرص على تدريب الموظفين حول مفهوم ادارة المخاطر بشكل عام.