

A study of VOIP technology getting preference over international calling cards

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MASTERS DISSERTATION

**A study of VOIP technology getting
preference over international calling cards**

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Declaration

I declare that no portion of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of these or any other university or other institute of learning. Further, all the work in this dissertation is entirely my own, unless referenced in the text as specific source and included in the bibliography.

19th March 2009.

Dublin, IRELAND.

Acknowledgment

This dissertation has emerged out of my on-going urge for technological advancements and theory lying behind them

I am especially grateful to Enda, who as a supervisor for his evocative help and for his inspiring support in completion of this dissertation.

Thank you to my Dad and Mom for their support throughout the course of my study.

And finally to the God almighty.

Abstract

In this globalised world where population is at the rise and there is always a need seen in terms of effective communication systems, technologies are becoming increasingly obsolete. This is predominantly for the reason that new technologies are invented which sometimes gradually overtake the old ones or otherwise totally gets replaced.

The purpose of this study was to understand the perceptions of International Students based in Ireland in relation to the newly invented VOIP technology and whether they prefer the VOIP technology over the telephone calling cards which were earlier increasingly used for making long distance international calls. A primary research was conducted using qualitative and quantitative techniques among the International students from Dublin Business School. Two focus group interviews were conducted and Sixty nine International students were approached within the area of the sample population with predetermined criteria and were requested to fill up the self administered questionnaires during the month of January 2009. The outcome from the focus groups and questionnaires were used in assessing the perceptions towards the usage of VOIP technology and it replacing the calling cards.

The results revealed that respondents felt that Calling Cards and VOIP technology both have questionable potential towards reliability issues. The respondents felt that undoubtedly VOIP technology has much better value for money compared to Calling cards as they are very competitive in whatever countries they are operating. The respondents felt, although not in a majority that the voice qualities in Calling cards are better compared to the VOIP technology. The respondents also felt that compared to Calling cards the VOIP technology providers provided better value for money in terms of providing value added services like discounts on calling for some countries and tailor made services to individual customers depending on their call density and choice of countries. Finally, most of the respondents in a majority felt that flexibility was another issue besides the value for money aspect which made them use VOIP technology compared to Calling cards.

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CHAPTER ONE: INTRODUCTION

Chapter One: Introduction

1.1 Background

Communication is a process in which the information is sought, encoded and transferred from one end to the other. Globalisation has led to advance in communication resulting in new technologies, which are much faster, cheaper, reliable and effective when compared to history where unpredictable times were taken to send information across the globe.

Communication can be transmitted in several ways such as voice, letters, computers etc. Telephone today has become one of the most important means of communication. The best example would be landline, mobile phones and satellite phones. In the year 1975, calling cards were invented in Europe.

Calling cards were a big success as it could be used to make international calls and were comparatively cheaper. But the continuous growth and innovation in the communication industry led to new technology called VOIP (Voice over internet protocol calls).

Jaiswal and Raghav (2004) opine that the current developments in telecommunications are premised on technological advancements, deregulation and changing customer needs. It is also true that despite a slowdown in the economy in certain parts of the world, telecom as a whole is a prominent sector attracting investments because of its sheer size and growth prospects. Current international traffic of 180 billion paid minutes worldwide has grown at a compound annual growth rate of 15 percent over the last five years (Jaiswal and Raghav, 2004).

When considering the situation of the telecommunication sector Frederikson (2005) puts forward the fact that, since the liberalization of the European telecommunication sector in the 1990s and the privatization of the incumbents, the sector has been heavily regulated. From the start, the sector-specific regulation was only intended as a remedy during a period of transition, until the market forces were able to govern the sector, assisted by the general rules from competition legislation. However, he further provides the fact that the

EU directive from spring 2002, implemented in member countries since July 2003, recognize that the potential market failures in the telecommunication sector in the form of monopoly/oligopoly power and externalities may prevail. Thus, a more permanent set-up is necessary: if and when a segment of the telecommunication sector is fully competitive, the sector-specific regulation should be withdrawn. But when market failures are observed in the form of players with significant market power (SMP) status remedies to correct these failures should be applied, proportionate with the size of the problem (Frederikson, 2005).

The introduction of VOIP in Europe will influence this whole regulatory regime. Firstly, the internet is inherently an unregulated, almost anarchistic global market, also in relation to price issues, interconnection and so on. When the internet and telecommunications domains merge, the big question is whether it will be the unregulated tradition from the Internet regime or the heavily regulated telecommunication rules that take over (Hart and Rolletschek, 2003; Meisel and Levin, 2003 as recited by Frederikson, 2005). Secondly, Frederikson (2005) opine that the introduction of VOIP will by itself create new solutions because of a different technology that will change the conditions for regulation of access, prices and interconnection. The EU set-up in a coming second round may be able to cope with these challenges, because new market definitions can be used compared to the present 18 markets.

To conclude Zubey et al (2002) suggest that the success of new technologies in the market depends, in part, upon consumers finding the technology offerings relevant to their needs. In new technology markets with underdeveloped preference structures, technology managers and developers must match the capabilities of the new technology needs of the target consumers. A new technology in the telephony market takes advantage of the internet to provide new telephony related services at lower costs (Zubey et al, 2002).

1.2 Interest in the Subject

The researcher hails from India. India being one of the fastest growing economies in the world and with its enormous human power, the communication industry is believed to be one of the most prosperous fields its market being valued in billions of dollars. This initially was the drive that the researcher obtained to embark on the research problem area. The young people from the developing countries are increasingly travelling to the west for higher education and use a lot of new communications technology in order to keep in touch with their near and dear ones in the home country.

Ireland is also very well known for its education and nowadays a huge amount of surge is seen in the students travelling to Ireland for higher studies. Hence a study of the International students' behaviour in relation to usage of VOIP technology over calling cards was highly relevant.

The researcher holds a Bachelor Degree in engineering and has interest in the communication industry. He aims to return back to his home country after the completion of the course and start researching into the communication industry seriously to look on for a career in the same.

All the above mentioned reasons have been involved in the researcher choosing to take the present research area for analysis and primary research.

1.3 Objectives of the Research

Saunders et al (2007) emphasises that formulating and clarifying the research topic is the starting point of a research project. Therefore to achieve a successful project, the researcher has spent quality time in framing and analysing the objectives of the research very clearly.

The first and the most important aspect towards this were formulating a good research topic. In regards to the above mentioned interest that the researcher had, the following thesis statement was derived:

A study of VOIP technology getting preference over International calling cards.

Along the same lines it was also very important to frame a very specific and clear research question. Hence, the researcher derived the following research question:

Has the new VOIP technology impacted over International calling cards in relevance to its usage by International students in Ireland?

In order to derive a clear sense of purpose and direction in relation to the research question and research problem, it was very important that the research objectives were determined. The following five research objectives were framed by the researcher:

- 1. To understand VOIP Technology.***
- 2. To analyze the International students' behaviour over the changing technology trends.***
- 3. To determine the advantages and disadvantages of the VOIP calls over the calling cards.***
- 4. To draw conclusions about the popularity of VOIP technology over calling cards.***
- 5. To establish consumers' perception towards fruits procured from third world countries.***

In order to provide a very efficient adequacy for the research's purpose and make it testable the researcher then deduced a hypothesis as follows:

VOIP technology has replaced International calling cards due to its flexibility and cost of usage.

1.4 Approach to the dissertation

The objectives derived were obtained systematically in the research. Firstly, secondary research is conducted using relevant sources to understand the research problem area in depth. Primary research was conducted using questionnaires administered to the respondents and focus group interviews held at various levels of the sample population. The quantitative data thus obtained was analyzed statistically using Microsoft Office Suites like MS Word and MS Excel and results were drawn. It was then checked if the results proved or disapproved the hypotheses. Based on the findings appropriate conclusions and recommendations were put forward.

1.5 Organization of the dissertation

In order to explain how the entire dissertation has been organized by the researcher brief information about what are covered in each of the chapters of the research has been mentioned below:

Title and Table of Contents: Initially the title of the dissertation has been mentioned including all the details required by the university as well as the reader for more information which is followed by the table of contents. Table of contents provided in great details the side headings with page numbers just in case the reader wants to skip through the page. The same holds good for the list of tables and figures followed.

Acknowledgements and Abstract: The acknowledgement as drafted by the researcher is being printed after this. The abstract which follows the acknowledgment provides an overview of the entire research study for readers to understand what the researcher intends to do using this dissertation.

Introduction: This chapter provides information regarding the following:

- Background of the problem and definition of the problem(s)
- The reason for the researcher's interest in the topic/subject area and what he intends to achieve (aim & objectives or the hypothesis to be tested, etc).
- Approach to the dissertation
- The organization of the dissertation

- The scope and limitations of the research; and
- The major contributions of the study

Literature review: This chapter aims at justifying and highlighting the reason for including each of the topics, theories, concepts, models etc and their relevance to the aims/objectives of the study using previous studies conducted by various authors and writers. Some inconclusive evidences from the various sources are also referred wherever required.

Research Methodology and Methods: This chapter reflects upon the underlying assumption(s) about the research methodology employed during the course of the research. In addition, the research method(s) used are also discussed in great detail with the corresponding strengths and weaknesses, and the activities to be carried out. The literature on research methodology/methods to support the researcher's choice of methods is used wherever deemed necessary.

Data Analysis and Findings: This chapter simply presents and illustrates the findings fairly descriptively without trying too hard to draw general conclusions. Different sections, each addressing the aims/objectives of the Dissertation are mentioned using graphs and tables showing the respondents' responses to each question while undergoing primary research.

Conclusion: This chapter attempts to draw general conclusions by summarizing the findings, pointing out the ways in which these particular findings illuminate/explore/explain/unpack and clarify the general issues and/or concepts raised in the literature review section of the research. This chapter also aims to be reflective, critical, coherent, and analytical and integrates the theories and concepts.

Self reflection on Own learning and Performance: The reflective learning account will encompass the International MBA Dissertation process and will focus on how the programme has added value to the researcher and in the future to the researcher's employing organization. The learning account will also include the researcher's plans to sustain and extend this learning process gained during the course of this study.

1.6 Limitations and Scope of the Research

This research has a few limitations which are mentioned in this section for the information of the readers. Since the research has been conducted in view of consumers based in Ireland, the results and findings of this research has to be limited to the scenario in the Republic of Ireland only. Another limitation is that of the sample population interviewed. The sample population, although all International Students based in Ireland, but are from Dublin Business School and Postgraduate Community only. Hence, it would not be entirely correct to say that the perception of all the International students based in Ireland have been put forward in this research.

It would be advisable to conduct a further research involving all the schools and colleges of the Republic of Ireland to understand the perception clearly and with more depth. The researcher also proposes that a similar study be conducted in various other countries to see how the international students in other countries use the VOIP technology and whether it has managed to overlap the Calling Cards.

1.7 Contributions of the Research

This research has many contributions in its kitty towards the International students' perceptions in relation to the usage of VOIP Technology and it virtually being replaced from Calling cards. This research provides an in depth view of how the international students which are not considered a huge market are now coming into the foray of using better communication areas in order to communicate with their people in the different home countries. This provides the communication companies to consider this as a huge market and to understand their needs and aspirations in relation to the invention of new technologies.

*CHAPTER TWO:
LITERATURE REVIEW*

Chapter Two: Literature Review

2.1 Introduction

In this chapter, revision of the relevant literature is undertaken to provide the readers of an overview of the secondary data referred for the development of this research. The chapter is divided into various sections. Through the secondary research an attempt is made to analyze the objectives of the research and provide a background to the research problem area.

The first section starts on with the telephone. A brief discussion about the telephone, its history and its relation with the social life is conducted. The second section then addresses the advent of cell phones and its impacts on the younger generations. The next section provides information on the advent of calling cards, how it operates and its advantages and disadvantages. The next section deals with the Internet, its boom and the operation of the Internet Telephony System. The next section attempts to understand VOIP technology where a discussion on its invention, operation, usage, flexibility is conducted. The last section discusses the telephone related consumer behaviour. In the end, a summary of the gaps in relation to the literature reviewed is discussed.

2.2 The Telephone

2.2.1 Telephone and its history

Zerdick (2004) opines that since its inception billions of years ago, the evolution of life on earth has been shaped by two highly consistent physical constraints:

- (1) *Physical Proximity* was always a precondition for organisms to initiate and maintain interactive relations. On the human level, this is reflected in racial, ethnic-linguistic and many other differences along geographical lines- as well as in the high salience of face to face gatherings for the maintenance of social collectivities and institutions, and for the satisfaction of individual needs.
- (2) *Stable Dwelling places* were necessary for the development of more complex forms of communication and cooperation. Evidently, the increasing stability of

settlement made possible by horticulture in the Neolithic period created favourable conditions for the emergence of more complex organizational structures and differentiated occupational roles, and the evolution of sedentary farming patterns in irrigated valleys was certainly a precondition for the emergence of higher level civilizations. In more recent times, the importance of tightly organized factories and densely populated urban areas for the emergence of industrialized societies has again demonstrated that the achievement of higher levels of societal complexity is still based on the physical proximity of many human individuals in very stable locations.

Bellis (1997) reinstates that, in the early 1870's, after a legal battle between Elisha Gray and Alexander Graham Bell, the latter was acclaimed the inventor of the first of its kind of communicating device. Little did they know that it would revolutionize the whole world with this technology? The early device could transmit speech electrically calling it a telephone. During the invention of the telephone, telegraph was already into existence for some thirty years.

Although a highly successful system, the telegraph, with its dot-and-dash Morse code was basically limited to receiving and sending one message at a time. Bell's extensive knowledge of the nature of sound and his understanding of music enabled him to conjecture the possibility of transmitting multiple messages over the same wire at the same time. Although the idea of a multiple telegraph had been in existence for some time, Bell offered his own musical or harmonic approach as a possible practical solution. His "harmonic telegraph" was based on the principle that several notes could be sent simultaneously along the same wire if the notes or signals differed in pitch (Bellis, 1997).

2.2.2 Telephone Technology and Social Life

Fischer (1994) puts forward the topic discussed in the 1926's Knights of Columbus Adult Education Committee which asked the question "Do modern inventions help or mar character and health?" Among the specific questions the committee posed, were:

“Does the telephone make men more active or more lazy?” and

“Does the telephone break up home life and the old practise of visiting friends?”

The questions the Knights pondered were widely addressed. Many, especially representatives from business communities, gave rousing answers then. They proposed that modern inventions liberated, empowered and ennobled the average American. The American Telephone and Telegraph Company (AT&T) issued a public relations announcement entitled “The Kingdom of the Subscriber”. It declared:

In the development of telephone system, the subscriber is the dominant factor. His ever-growing requirements inspire invention, lead to endless scientific research, and make necessary vast improvements and extensions....

The telephone cannot think or talk for you, but it carries your thought where you will. It's yours to use.....

The telephone is essentially democratic; it carries the voice of the child and the grown up with equal speed and directness.....

It is not only the implement of the individual, but it fulfils the needs of all the people.

Manning (1996) argues that while the technology is becoming mature, our social definition of it is still undergoing social interpretation and definition. Ling (2000) further reinstates that as the adoption of technology continues and as its use creeps into more and more non-traditional areas of life, one is forced to reinterpret and expand their notions of telephony. He further clarifies it is advantageous for sociologists as it allows them to peek behind the curtain and see the development of normal development.

2.3 The Cell phones

2.3.1 The advent of the cell phones

As the increase in population density is forcing the world to move towards globalisation, it also has certainly facilitated for the increase in primary interpersonal communications.

On the other hand Zerdick (2004) argues that increments in locomotion have reduced the interpersonal communications because whenever individuals are walking on the streets, driving on the roads, cruising on ships or flying in planes, their communicative capacities are sharply reduced.

When the situation is viewed with this very broad evolutionary perspective, the significance of the advent of mobile phones can be realised. The cell phones have contributed immensely in empowering people to engage in communications; which are at the same time free from the constraints of physical proximity and spatial immobility. As it responds to such deeply ingrained and universal social needs, it is no surprise to see the mobile phone expanding worldwide at breathtaking speed (Zerdick, 2004).

Zerdick (2004) also puts forward the major impacts of the advent of cell phones which is its capacity to include mass population in poor countries who are partly illiterate, who will never have the means to buy a computer, and who hitherto were not even connected to the traditional networks of landline phones. Zerdick (2004) recites an empirical study conducted by the International Telecommunication Union in the year 2001. It provides striking evidence of how the cell phone has contributed to narrowing century old gap in telephone usage between highly developed and less developed countries. It shows that in 2001, about 100 nations (among them many African) had more mobile than landline phones in service, and that cell phone technology is far more potent than computer technology in connecting poorer populations to the sphere of digitalised information.

2.3.2 Cell phones and the young generation

Cell phones at the moment are especially lured by the younger generations for various reasons. Berg et al (2005) opine that the younger generation have been brought up with mobile telephony and some of the older generation have become dependent on the younger generation to help them understand and use the technology, partly because they do not understand or read the manuals but also because it is a new way to communicate which is changing everyday life for just about everyone. The younger generations are at

ease with high tech, they use their mobile telephone even if they have a fixed line telephone in the same room, because they have all the information in their mobile handset, telephone numbers, text messages, names, pictures and other kinds of information (Berg et al, 2005). Wynn and Katz (2000) further suggest that the younger generations rarely discuss the cost of having a mobile telephone, one reason being that it appears they do not compare the mobile telephone with a fixed line telephone.

2.4 Calling Cards

2.4.1 Calling Cards and its invention

Over the decades, world has become a much smaller place due to advancement in the communications making very much easier for the people to talk to people on the other end of the globe without a great deal of expense. Prepaid phone cards or Calling Cards as sometimes they are referred to, were first developed in Italy in 1976 to compensate for the shortage of coins. People just insert the cards with magnetic strips in the payphone and they can start calling right away which would avoid the usage of coins. While on a call, call credits are deducted at rates that depend to where they are calling.

More than 30 years after its development, prepaid phone cards still exist and they have been improved on a large scale. Unlike before, prepaid phone cards nowadays use smart chips instead of magnetic strips. Also, prepaid phone cards can be used with any phone, anywhere and at any time (etribes.com, 2008).

Basically calling cards are used to make international calls for a cheaper rate. Prepaid cards are famous among the calling cards compared to the chip based or smart card. The invention led to the rapid increase in sales exceeded and reached a whopping figure of \$ 3 billion in the year 2000. The estimated growth of the calling cards is expected to reach a magic figure of \$ 10 billion in the coming years (etribes.com, 2008).

A pre-paid telephone calling card allows a person to make a telephone call without making a payment at the time the call is made. Rather, the cost of the telephone call is

debited from a corresponding account during each call. Prior to making the telephone call, the person purchases the card in exchange for a payment that represents the initial balance of the account. The seller may be the company that provides the telephone service or may be a reseller of cards purchased from such a service provider or sold on behalf of the service provider. To make a telephone call to another party, the purchaser first makes a telephone call to the service provider, typically through a toll-free connection. The toll-free telephone number is typically printed on the card. The person then provides information to the service provider that identifies the account. Typically, the person simply uses the buttons of the telephone keypad to enter a number that is printed on the card. Such a number is commonly known as a personal identification number or PIN as it may be called (Najour and Brauer, 2001).

Nevertheless, other types of pre-paid telephone calling cards have a magnetic stripe or similar medium that stores the PIN or other identifying information on the card in an electronically readable manner. Telephones having a means for reading a magnetic stripe can thus read the number or other identifying information automatically. The service provider's computer telephony system or switch receives and compares the identifying information to information in a database to verify the authenticity of the account. If the account is authentic, the system instructs the caller, typically by means of voice prompts, to dial the telephone number of the party to whom the caller wishes to speak. The system then completes the call by making the connection through the appropriate telephone companies and debits the caller's account by an amount proportional to the duration of the call. When the account balance falls to an amount not sufficient to pay for a call, the system prevents any further telephone service. The person may then discard the card and purchase a new card. Some service providers provide a feature that allows a person to recharge a card, i.e., increase the balance of the corresponding account, by making further payment. Nevertheless, the vast majority of telephone calling cards are considered disposable. Such a card has no further function once the balance of its corresponding account is depleted (Najour and Brauer, 2001).

2.4.2 Calling Cards and its operation

A prepaid calling card system enables customers to access a telephone network and obtain long distance telephone service.

Stimson and Beshear (1996) explain the working of a typical Calling Card as follows:

The system includes four main functional components: a plurality of calling cards, a host computer, a plurality of on-site activation terminals and a call processor. Each of the calling cards preferably includes a body portion and a read only memory stripe having stored there in a security number.

The card is typically formed of cardboard or plastic and may include the security number in clear text under a suitable blackout. The main management and processing of the system is effected by the host computer, which is connectable to the telephone network. The host includes a database for storing security numbers associated with authorised calling cards. The data terminals are remote from the host computer and connectable thereto for transmitting data between the terminals and the host computer. The call processor is controlled by the host computer for interfacing one or more customers to the telephone network using the authorised calling cards.

2.4.3 Advantages and Disadvantages of Calling Cards

More than 30 years after its development, calling cards still exist and they have been improved on a large scale. Prepaid calling cards now use smart chips instead of magnetic strips. Also, calling cards nowadays can be used with any phone, anywhere and at any time.

In spite of its improvements, debate about its convenience goes on. A single calling card can hold a hundred dollars worth of prepaid phone credits. It's slim and almost paper-like structure; give users the convenience of putting it in any of the pockets.

Some of the excellent features of a prepaid calling card is that a person can, call using any phone, anywhere at any time. Also, mobile phones with no talk time can use a prepaid calling card to call anybody in the world.

Some of the Major advantages of calling cards are (top-callingcards.com, 2008)

- Consistency of the service provider
- No concealed fees
- Connectivity
- Easy to buy
- Easily available
- Available in smaller price range also
- Offers services to most countries as almost standard rates
- Works from cell phones also
- Has the same rate at anytime -day or night
- Works from any place to any other place in the world
- Easy to use
- 24/7 customer support
- Allows different currencies
- Allows bank transfers

Some of the major disadvantages of calling cards are that it can be easily lost or misplaced which means losing a hundred bucks in a moment. There is generally a tendency of scams happening. Scams happen when a person asks about the information about a card; like a few digits, which people unsuspectingly reveal. From the technological convenience a few digits can mean a whole lot of things and before the person realizes he will be scammed. There are also calling card companies and brands that charge more than they should do and thus fraud takes place. The calling card service providers sometimes do not inform customers properly regarding call rates that certain calling cards have.

2.5 The Internet

2.5.1 Internet and its boom

Development of the Internet was funded by the US Federal Government for research and defense applications. In the spring of 1995, the bulk of funding was shifted to a new experimental network called the Very-High-Speed-Backbone Network Service. The main Internet backbone, NSFNET, was sold to America Online (AOL). However, maintenance of the Internet backbone today is handled by AOL and commercial providers like MCI and Sprint. Thus, Internet development, once a government controlled and tax-supported endeavor, is now evolving through private costs based on commercial value (Feher and Towell, 1997).

Feher and Towell (1997) suggest that the rapid adoption of the Internet over the last few years can be compared with other technologies such as the telephone and the personal computer. They further put forward the phases of technology adoption in organizations have been characterized by the following stages:

- Identification and initial investment
- Experimentation and proliferation
- Control of the proliferation, and
- Widespread technology transfer.

The use of the Internet by businesses and people has entered a proliferation stage with an immense potential for growth. This will most likely be followed by some control of the proliferation and, eventually, maturation. Feher and Towell (1997) conducted a study which was designed to look at current and planned practices and the major benefits of communication-intensive information system applications. The survey results made it clear that many information technology (IT) managers are, as yet, unable to evaluate the contribution of this new technology to their organizations.

In the recent times, internet has become one of the main forms of communication in the world. Heung (2003) further suggest that the Internet is considered as a technology asset

because of its ability to disseminate large volume of information quickly and efficiently. In the beginning of the 21st century, internet was mainly used in the companies because the service was very expensive. Later in the recent times, the internet usage saw a gigantic growth because of the new internet provider companies venturing into the market. According to Neison (2005), the internet users in the world are increasing at a rate of 18 % annually. A current figure shows that there are about 1 billion internet users and expected to reach 2 billion in a decade time. This led the service providers to reduce the pricing in the service because of the huge competition in the market. The demand for the internet was hugely growing because it was inexpensive and the flexibility in usage.

Internet has become an important tool in every sector such as industries, education, hospitals, hotels, banks, etc. Heung (2003) emphasises that internet has more advantages over any other media as an information gathering tool. Internet plays a vital role in the field of education. According to Spennemann (2007), Internet has become an important tool to support various activities of universities ranging from research work to teaching. In the academics, internet has become as a research tool, which helps in finding the journals and also the access to electronic library. The development of internet usage shows that the nature of the activity has changed from application such as file transfer to be dominated by web browsing. (Ghita, Furnell, Lines, Le foll and Ifeachor: 2001 as recited by Spennemann, 2007) Internet has gained more popularity among users because of the services like emails, chatting, online games and entertainment such as listening to music, watching movies, voice chat etc.

2.5.2 The Internet Telephony Systems (Foo and Hui, 1998)

The fast growth of Internet has resulted in the birth of many new useful tools, one of which is the Internet telephony system. Although it is still far from being a substitute for the conventional telephone at this current stage of development, it has become more and more popular among Internet users. This growing enthusiasm stems mainly from huge potential cost savings by making it possible to make transcontinental telephone calls at the prices of local telephone calls plus nominal standard Internet connectivity charges.

The extent of interest of Internet telephony systems has resulted in the recent formation of an Internet Telephony Consortium (ITC) which is a research organization focused on providing interoperability between the Internet and the public switched telephone network. Among its many functions and information services, it documents a comprehensive list of both research prototypes and commercial versions of Internet telephony software and services that are currently in existence.

These systems primarily offer real-time voice communications and other value added services. They can either be half or full duplex systems although the latter is more desirable due to its ability to emulate a conventional telephone. With the computer's high computing power and graphics capability, the basic telephony system can be further expanded into a visual audio conferencing system in future. Internet telephony systems are at their infancy stage without any form of standardization that will allow interoperability among systems. In addition, there is a lack of a proper framework to allow the evaluation or comparison between systems to take place. Although there appears to be some development in the area of standardization, gaining some momentum and acceptance, an evaluation framework for these systems remains lacking today. Currently, it is left to each new system claiming its superiority over others in some manner in its sales literature or user documentation.

Alternatively, there exist a small number of articles that are mainly found in computing magazines that will evaluate and report on a selection of existing. Although such tests utilize a set of standard equipment and test conditions, they are generally more focused on comparing features and functionality, user interface, gauging the ease-of-use, user-friendliness and quality of voice through largely subjective means by one or two evaluators. This is clearly inadequate and a systematic evaluation framework becomes useful and necessary.

Figure 01 shows the basic architecture of an Internet telephony system. Two host computers acting as caller and recipient are required. In using the standard Internet Transmission Control Protocol/Internet Protocol (TCP/IP), each host computer is

identified by a unique IP address. The host computer can either be a workstation or a personal computer with sufficient computation power and audio capabilities. The telephone software system which resides on each host computer facilitates the real-time voice communication across the Internet. In the basic communication process, the caller's software system will acquire the real-time voice data through an audio input device and convert the analog signals into digitized form which is then compressed and optionally encrypted before being transmitted to the recipient through the Internet using the TCP/IP. Compression is necessary to reduce the bandwidth requirement of the voice data. At the recipient's end, the software system carries out the reverse process.

Incoming data are first decrypted, decompressed and played back in real-time on the audio device of recipient's computer. All existing systems basically make use of the existing TCP/IP and use new mechanisms and descriptors to extend the TCP/IP to deliver real-time service. Such an approach will at best simulate real-time but does not guarantee real-time delivery due to the underlying nature of the existing protocol. The software system is thus constrained by this major limitation in delivering real-time service. The TCP/IP protocol provides two kinds of network services. Both are utilized in Internet telephony systems. The Transport Control Protocol (TCP) which is a connection-oriented protocol with guaranteed delivery of data is generally used to pass control messages and other important data. However, this is normally not used to deliver audio data due to speed considerations. Instead, the User Datagram Protocol (UDP), which is a connectionless- oriented protocol with no guarantee of arrival of data, is used. Additional information and mechanisms (such as packet loss replacement, packet ordering, and incoming data buffer management) have to be supplied to describe and construct the real-time nature of the service.

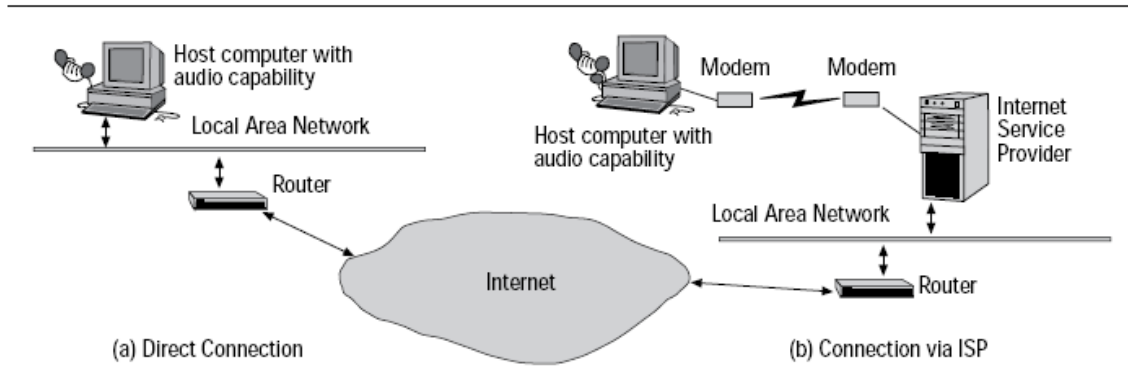


Figure 1 : The basic architecture of the Internet Telephony system

2.6 The VOIP Technology

2.6.1 Threats to calling cards

The popularity of calling cards is in the verge of fading away due to the new VOIP technology. VOIP technology is becoming more popular among the students because it was cheaper and easily accessible. This is primarily because the Internet technology is easily accessible to the students. Some of the VOIP providers allow its users to make calls free calls from computer to computer and also to make calls to phone for a cheaper pulse rate. Presence of various VOIP technology service providers is an alarming situation for calling cards. The VOIP technology is discussed in brief henceforth.

2.6.2 VOIP Technology and its invention

VOIP stands for "Voice Over Internet Protocol" and it converts the analog phone signal to a data signal for transmission using software called codec. (Jaiswal and Raghav, 2004). This technology uses internet as the carrier for the transmission of voice. VOIP technology avoids the unnecessary telephone regulatory charges compared to the conventional phones According to Zuby, Wagner and Oto (2002), the VOIP technology allows the user to make calls from computer to computer, telephone to telephone, computer to telephone.

One of the advantages of VOIP telephony is that calls can be received anywhere as long as the person is connected to the internet. However, this is also one of the disadvantages because the VOIP service completely depends on the reliability of the internet provider, Despite this, there are many who predict that VOIP phone service will eventually create a monopoly in the market and replace old fashioned conventional telephones.

2.6.3 Usage of VOIP

In the recent times, the telephone industry has been forced to deal with the cost issue of international calls. The introduction and wide spread use of VOIP phone service has been the reason. VOIP is used by most of the internet users to make calls and is become one the popular telephony service. In the beginning, VOIP was not reliable because of the poor sound quality and drop offs due to connection problems but presently the quality of sound is improved. Hence across the world there are about millions of VOIP users and is growing continuously. Students find the internet easily accessible and the additional features like chatting, video sharing make them use VOIP telephony services more. Even the businesses are getting into VOIP telephony to cut their expenses. VOIP telephony helps company to communicate with a large volume of customers. VOIP telephony can be also used for video conferencing.

2.6.4 VOIP and its operation (Federal Communications Commission, 2008)

VOIP services convert your voice into a digital signal that travels over the Internet. If you are calling a regular phone number, the signal is converted to a regular telephone signal before it reaches the destination. VOIP can allow you to make a call directly from a computer, a special VOIP phone, or a traditional phone connected to a special adapter. In addition, wireless "hot spots" in locations such as airports, parks, and cafes allow you to connect to the Internet and may enable you to use VOIP service wirelessly.

A broadband (high speed Internet) connection is required. This can be through a cable modem, or high speed services such as DSL or a local area network. A computer, adaptor, or specialized phone is required. Some VOIP services only work over your

computer or a special VOIP phone, while other services allow you to use a traditional phone connected to a VOIP adapter. If you use your computer, you will need some software and an inexpensive microphone. Special VOIP phones plug directly into your broadband connection and operate largely like a traditional telephone. If you use a telephone with a VOIP adapter, you'll be able to dial just as you always have, and the service provider may also provide a dial tone.

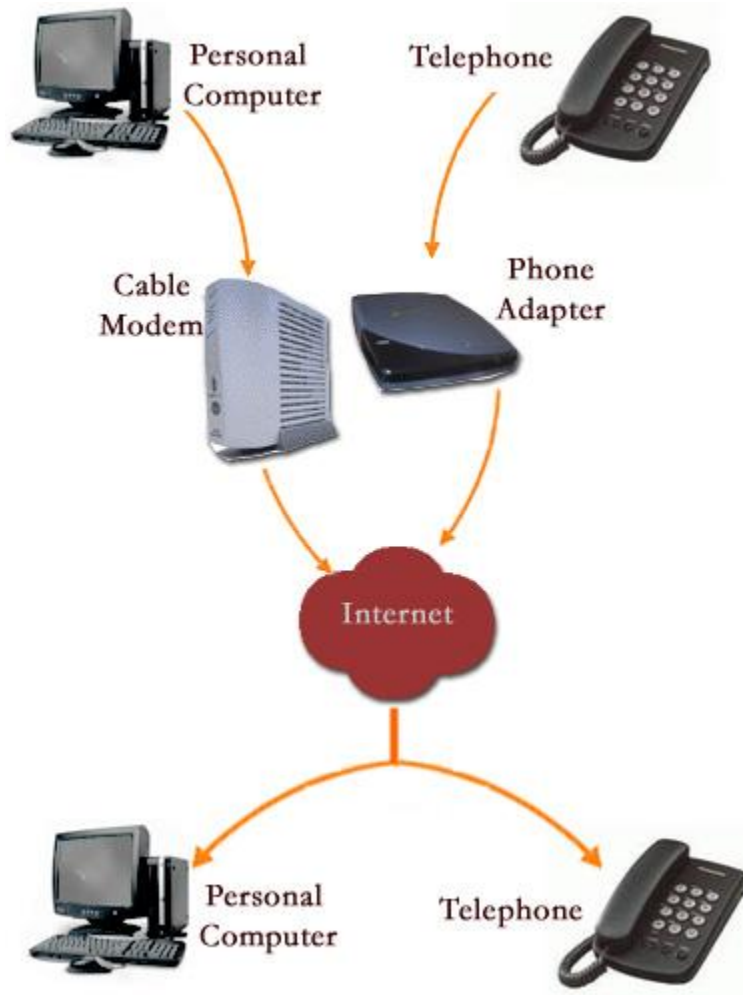


Figure 2: VOIP System Operation

2.6.5 VOIP and its flexibility

A new segment of customers can be created and a convergent network could fulfil the need for low cost, value-enriched services. Jaiswal and Raghav (2004) suggest that Voice over Internet can promise a new charging pattern for subscription-based services which

would be distance independent. They further suggest that by making services more customer' friendly, the providers can "move up the value chain' –thus creating more opportunities for reselling and relationship management. The study conducted by Jaiswal and Raghav (2004) found that the contribution of voice over internet is far reaching. It is only a matter of absorbing a new technology and taking limited risk. The process of open competition will ensure that services with innovation and customer care will only qualify, the rest will get eliminated.

The study also concluded that, three prolonged telecom strategies could be proposed:

- (1) Postulates of customer friendliness
- (2) Cost advantage; and
- (3) Network strengths.

In addition, the VOIP technology proposed the following advantages over other technologies:

- International calls can be made to any country
- VOIP uses internet as carrier and the regulatory charges are avoided
- Call routing based on time of day, least cost, etc
- No physical phone is required because the calls can be made or received over the computer or laptop.
- Easy to access even from a remote position provided uninterrupted internet connection.
- VOIP calls from computer to computer are free.
- VOIP calls can be made with video sharing.

Skype is an excellent example for a VOIP technology provider. Wallingford (2005) says that Skype is an instant messaging program that happens to have a peer-to-peer (modeled after Kazaa) global voice network at its disposal, so you can use it to call people on your buddy list using your PC or Mac. A person needs a broadband, a microphone, and a pair speakers or headphones for it to work. Voice calling alone doesn't set Skype apart from other IM applications like AIM or Windows Messenger--they also support voice. But

Skype supports voice calling in a way that those applications can only dream of: Skype works in almost any broadband-connected network environment, even networks with firewalls that often break other voice-chatting apps. In addition, Skype's variable-bit rate sound codec makes it less prone to sound quality issues than its predecessors.

The world has noticed 150 million downloads after the Skype was put in the market, Skype now offers the ability for its users to call regular phone numbers from their PCs, a feature known as Skype Out. Skype also offers a voicemail service and can route incoming calls to a certain phone number right to a user's desktop PC. There's even a Skype API that allows Windows and Mac programmers to integrate the Skype client with other applications. Videoconferencing add-ons, Outlook integration, and personal answering machines are just some of the cool software folks have developed using the Skype (Wallingford, 2005).

2.7 The telephone and consumer behaviour

2.7.1 The advent of new technology and its impacts

Berg et al (2005) argue that people design and produce technology for other people with different purposes. He further suggests that most of the people do not ask where the technologies come from and why they are designed in a special way but, the development and use of technology emanates from and remains linked with human values, dreams, needs and circumstances prevalent in society. The designers' visions of the future system are created within discourses, discourses where gender and technology are both reconceptualised and reconstituted since systems designers "act and are inside this world, not some other" (Haraway, 1997), that is, an unequal society. Stolterman (1991) contends that visions come into view very near the beginning of the design process before the present domain or situation is analyzed. The designers' ideas, values and understandings are intertwined with their visions of the choice of a certain functionality, structure or technology of the future system, service or artefact. But the result, a new IT-system, artefact or mobile service, is not always what the producers expect when they introduce it, people do not always do what the developers expect them to do (Edenius, 1996). Berg

et al (2005) contends that the usage of text messages (SMS) offered in the Global Mobile System is an example of an unexpected use of a technology or mobile service by consumers.

Berg et al (2005) argues that technology advancements have social implications for people, who have experienced changes in their habits and in their way to communicate. Mobile technology has had an impact on people's way to speak and relate to one another, and some of them use mobile technology as a social prosthetic, they have become dependent on the technology for their social life. Hence Foo and Hui(1998) conclude that whilst consumers do not question the technology, at the same time they have created space for their own definitions. The discourse seems to be that technology will lead to something positive for everyone and the question is whether that always happens (Wallingford, 2005).

2.7.2 The telephone and adolescents

Ling (2000) states that in the contemporary industrial society, much of adolescence is the process of the child's movement from the home of their parents to their eventual role as independent adults in society. He further insists that the period is one in which they are allowed, and even encouraged to test out various identities. In traditional societies there is often a rite of passage often involving segregation from the group, the acquisition of special knowledge and a ceremony of reemergence. It is in this way that the individual becomes recognized as an adult. As Genep (1960) recited by Ling (2000) found, there is often little connection between such rituals and physical maturation.

The child cannot expect to simply take up the profession and life experience of their parents. Rather, as Hogan notes, the pressure for highly skilled laborers has meant the expansion of the educational system and the resulting expansion of the period of youth. A consequence of this is that significant portions of socialization are carried out in the school. The cohort grading of the school system means that one's peer group becomes relatively more important in the youth's activities and in their orientation. The sum of this

is what we have come to know as adolescence (Hogan, 1985). It is in this period that the child gains the pragmatic knowledge of how they should orient themselves as independent individuals. There is the need to acquire various types of technical and practical knowledge as well as information on the role set that they come to assume as an adult. Ling (2000) notes here that the specific things they need to learn include management of one's personal economy, how to interact with various groups and individuals, the role of gender and sex in one's life, the expectations of employers and the working world, a sense of personal style and integrity and, recently, an understanding of how one interacts and uses interactive communications technology (ICT).

Another dimension of contemporary adolescence is that the rapid development of institutions and technology means that it is more difficult to rely on intergenerational knowledge. Where in traditional societies there is little difference between one generation and the next, in industrial society the life experience of the child is different from that of the parent. While technology means rapid shifts in the material culture, the non-material culture is less fluid (Ogburn, 1950 as recited by Ling, 2000). This results in a cultural lag wherein the values are not always in synchronization with the material situation. Thus, people are always concerned about the work of developing norms that are appropriate for the current circumstances. In addition, neither the culture nor one's socialization can be assumed to be received. The adolescent must be, in some ways, active in their own socialization.

Adolescents may work to reject aspects of the culture that impinge on their sense of freedom while older generations may hold on to traditions for the sake of tradition. In this connection Ling (2000) recites Glaser and Strauss (1971) talk of shaping transitions implying that both parties have a say and that the experience is interactive. The development of new ICTs has had ramifications for the experience of adolescence. The process of adoption and embedding of ICTs is a new card in the deck. It changes the way in which the generations interact, the issues with which they are concerned with the symbolic meaning of electronic devices and it creates new styles of interactions (Ling, 2000).

In relation to the same Wynn and Katz (2000) conducted a study of twenty-six individuals about teenage phone use which in turn illuminated the telephone's critical role in making often-invisible means of social control more obvious, and thus more contested. The study also highlighted new service directions that might be addressed to meet the diverging and often conflicting communication needs of both teens and parents.

The study was conducted in spring, 1994, which sought to identify how teenagers might use group call facilities. Using informal methods of interviewing local teenagers, parents and teachers, an attempt was made to examine a convenience sample of twenty-six middle-class individuals who composed of the following:

3 teen boys;

11 teen girls; and

12 parents of 8 boys and 12 girls (Two parents are knowledgeable about teen developmental processes).

Overall the study highlighted findings related to the creation and marketing of new telecom services and to the issues that new technology of communication introduce in the modern American family. In terms of the first, Wynn and Katz (2000) identified a set of differentiating features for potential group telephone services directed to the teen market.

The optimal age for an envisioned service would be the pre-teen group of sixth graders. Gender is an important dimension. In this regard, girls make a natural market due to their current phone use patterns, their extensive relationship work on the telephone and the strong emphasis on verbal dimensions of relationship. For boys there is an emerging demand for modem communications. In various ways the study participants emphasized the role the telephone plays in establishing teen independence from parents, and in doing important 'social work' of developing intimate relationships with friends of the same sex, as well as learning to relate to the opposite sex in a safe framework.

2.8 The Summary of gaps

All the above researchers have identified that the VOIP technology being far more superior and flexible to use. But there are absolutely very few researchers who have conducted research on International students using VOIP technology and their preference of the same compared to Calling Cards. The author through primary research attempts to find out the same in the Irish context. Primary research is conducted using both qualitative and quantitative techniques and an attempt is made to prove or disapprove the hypothesis set.

CHAPTER THREE:
RESEARCH
METHODOLOGY AND
METHODS

Chapter Three: Research Methodology and Methods

3.1 Introduction

A combination of both primary and secondary research was carried out in order to achieve the objectives of this research and answer the research question. This section describes the various tools used throughout the research and also highlights the rationale behind choosing each one of those tools.

Kumar (2005) defines research as one of the ways to find answers to the questions posed. He further insists that when a research is conducted the following process needs to be followed:

- The research is undertaken within a framework of a set of philosophies
- The research uses procedures, methods and techniques that have been tested for their validity and reliability
- The research is designed to be unbiased and objective.

Saunders (2007) proposes a research onion in order to derive a research methodology. This research would adopt the research onion approach, wherein each layer of the research process will be discussed in order to derive an appropriate research methodology.

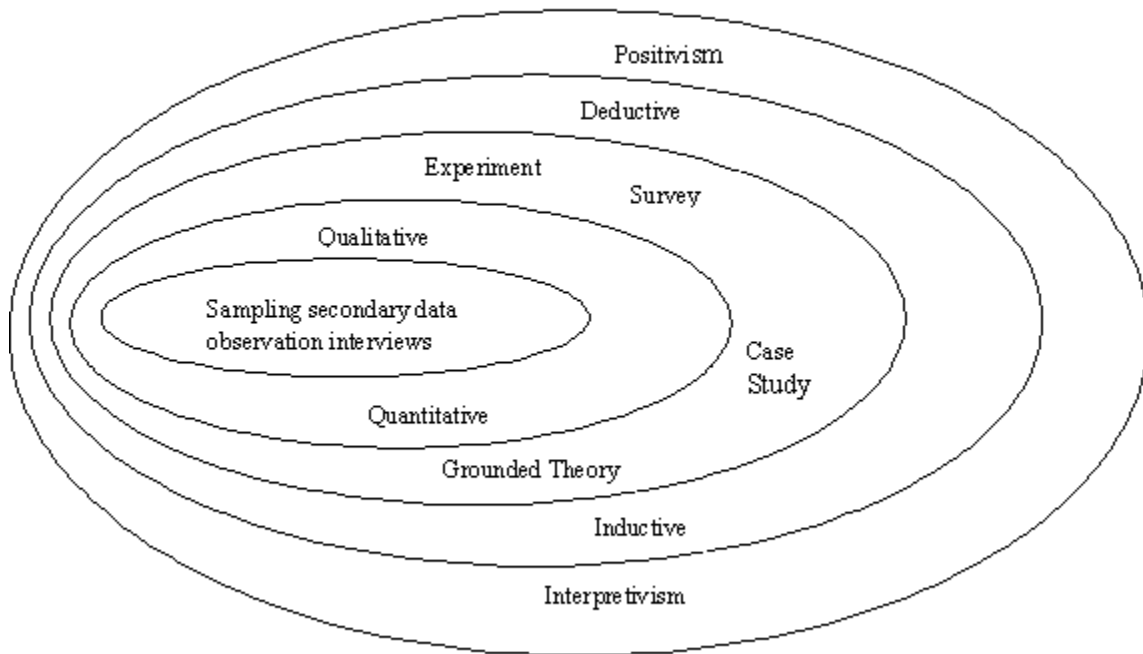


Figure 3: Research Onion (Saunders et al., 2007:132)

This section explains in detail, the manner in which the research has been conducted; describing the research approach adopted the research strategy, the population and sample design, sample frame and finally the formulation of the questionnaire based on the results of the pilot test.

Research Approach

3.2 Research Philosophy

Saunders et al. (2007) generally suggests that the overarching term “research philosophy” relates to the development of knowledge and the nature of that knowledge. He further suggests that the research philosophy adopted by the researcher contains important assumptions which will later on underpin the research strategy of the research and the methods chosen as a part of that strategy.

Saunders et al. (2007) proposed three research philosophy methods which are Positivism, Realism and Interpretivism.

The research philosophy of a positivist reflects that the researcher will probably adopt the philosophical stance of a natural scientist and will prefer working with an observable social reality with the end product being law like generalizations similar to those produced by physical and natural scientists (Remenyi et al, 1998). Hussey and Hussey (1997) further insists that positivist philosophy reflects to the research objects, which should have existed before the research process and should continue to exist after the research.

Realism assumes a scientific approach to the development of knowledge and relates to scientific enquiry. It states that reality is the truth that objects have an existence independent of human mind (Saunders et al., 2007). Usually business and management research is concerned with the social world and the philosophy is that knowledge of reality is social conditioning.

Interpretivism philosophy suggests that it is necessary for the researcher to understand the differences between humans in their roles as social actors. This type of philosophy is very important for researchers who adopt an empathetic stance. The challenge of the researchers is to enter the social world of research subjects and understand the world from their point of view. This approach in addition is accepted based on that the circumstances of today may not apply in the three months of time, and then the some of the value of the generalization is lost (Saunders et al., 2007).

The research philosophy of this dissertation will suggest an interpretivist approach by understanding the world from the researcher's point of view. In the case of present research, there is a need of knowing the impact of VOIP technology over the calling cards and the students changing attitudes towards the new technology. The research needs subjective interpretation of new technology and students changing attitudes towards the same. It is also true that the development of technology is extremely fast and

in no time does technologies are seldom used or declared obsolete. Hence this approach is accepted only at the present circumstances of more number of callers using VOIP technology which can become obsolete with the discovery of new and advanced technologies. Hence an interpretivist approach is appropriate for this research.

Saunders et. al. (2007) suggests that a research approach means the extent to which the researcher is clear about the theory at the beginning of the research, whether the research should use the deductive approach; in which a theory is developed and research strategy is designed to test the hypothesis or the inductive approach; in which the data is collected and a theory is developed as a result of the data analysis.

Robson (2002) proposes five sequential stages through which the deductive research will progress:

- Deducing a hypothesis from the theory
- Expressing the hypothesis in operational terms, which propose a relationship between two specific concepts or variables;
- Testing this operational hypothesis
- Examining the specific outcome of the inquiry.
- If necessary, modifying the theory in the light of the findings.

Saunders et al (2007) lists the following factors which emphasize an inductive approach:

1. Gaining an understanding of the meanings humans attach to events.
2. A close understanding of the research context.
3. The collection of qualitative data.
4. A more flexible structure to permit changes of research emphasis as the research progresses.
5. A realization that the researcher is part of the research process
6. Less concern with the need to generalize.

In the present research the hypothesis was first derived using the secondary literature. Then the hypothesis is expressed in operational terms and as a result of which the

hypothesis is again tested using primary research. The outcomes of the inquiry is then examined and checked against the hypothesis. Hence a deductive approach is considered for the present research.

3.3 Research Strategy

Saunders et al (2007) suggests that a research strategy decision should be undertaken based on research question and objectives.

Saunders et al. (2007) lists the following research strategies:

- Experiment
- Survey
- Case study
- Action research
- Grounded theory
- Ethnography
- Archival research.

He further suggests that no research strategy is inherently superior or inferior to another. It is important that the research strategy chosen should enable to answer the research question and objectives.

The present research uses survey strategy. Saunders et al (2003:92) states that a survey strategy requires large collection of data and uses interviews and questionnaires for data collection. He further argues that survey method links with problems relates to bad capacity of formulating questionnaire but these will be overcome by usage of appropriate wording, logic and language while framing the question.

To answer question posed and to fulfil objectives, the present research requires collection of large amount of reliable data from the international students in Dublin Business School.

Hence using survey strategy for the research is valid.

Using a survey strategy gives more control over the research process, when sampling is used; it is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for whole population (Saunders et al., 2007).

3.4 Research Choice

Saunders et al. (2007) suggests that quantitative and qualitative research choices are widely used in business and management research to differentiate both data collection techniques and data analysis procedures.

Bryman and Bell (2007) define quantitative research as one that can be construed as a research choice that emphasizes quantification in the collection and analysis of data and that:

- Entails a deductive approach to the relationship between theory and research, in which the accent is placed on the testing of theories;
- Has incorporated the practices and norms of the natural scientific model and of positivism in particular; and
- Embodies a view of social reality as an external, objective reality.

Again by contrast Bryman and Bell (2007) suggest that qualitative research can be construed as a research choice that usually emphasizes words rather than quantification in the collection and analysis of data and that:

- Predominantly emphasizes an inductive approach to the relationship between theory and research, in which the emphasis is placed on the generation of theories;
- Has rejected the practices and norms of the natural scientific model and of positivism in particular in preference for an emphasis on the ways in which individuals interpret their social world; and

- Embodies a view of social reality as a constantly shifting emergent property of individuals' creation.

Saunders et al. (2007) suggest that a researcher can use either mono method, multiple methods or mixed method of data collection technique.

The present research uses Mini Group as a qualitative research and self administered questionnaires as a quantitative research. Hence it is a mixed method which will be used in the present research.

Saunders et al. (2007) recites Tashakkori and Teddlie (2003) mentioning two advantages associated with mixed methods of research.

- Different methods can be used for different purposes in a study. This enables the researcher confidence that he is addressing the most important issues.
- It enables triangulation wherein data can be triangulated against each of the data collection technique employed to get a satisfactory outcome.

3.5 Time Horizon

An important question that needs to be asked while planning the research is whether the research needs to be a snapshot taken at a particular time or does the research needs to be similar to a diary and represent events over a given period (Saunders et al., 2007). The snapshot taken at a particular time in the above statement is called a cross-sectional study, whereas the diary approach refers to as a longitudinal one.

The hypothesis in the present research can be proved and the research can be completed within the stipulated time. Hence the research is undoubtedly cross sectional.

Data Collection

3.6 Data Collection Methods

To answer the research question and derive the hypothesis the researcher uses both primary and secondary data collection methods.

3.7 Secondary Data Collection

Cooper and Schindler (2001) define secondary sources as interpretations of primary data. Encyclopaedias, textbooks, handbooks, magazines, newspaper articles and most newscasts are considered secondary sources. Data collected from all such sources are called secondary data.

Cooper and Schindler (2001) suggest that before collecting information from secondary sources it is very important to conduct a source evaluation. They further list the following five factors for source evaluation:

- Purpose: The purpose of the source is what the author is trying to accomplish.
- Scope: This relates to the date of publication, time period involved and depth of the topic discussed etc.
- Authority: This relates to the authority of the source
- Audience: This relates to the audience the source is focused on.
- Format: Format relates to how the information is presented and how easy is to find a specific piece of information.

For the present research secondary sources like textbooks, journal articles, conference papers and online resources were evaluated. All the above factors for source evaluation were considered before any such source was referred. All the details have been discussed in detail in the Bibliography section of this dissertation.

3.8 Primary Data Collection

Cooper and Schindler (2001) suggest that all data collection techniques don't have an equal value. They further present that relying on the source level indication primary sources have more value than secondary sources. The present research collects primary data for the answering the research question.

3.8.1 Focus Groups

Bryman and Bell (2007:511) define focus groups as follows:

“It is form of a group interview in which: there are several participants (in addition to the moderator/facilitator): there is an emphasis in the questioning on a particular fairly tightly defined topic; and the accent is upon interaction within the group and the joint construction of meaning”

Bryman and Bell (2007) further lists the advantages of using Focus group interview technique as follows:

- The dynamics of group discussion could lead individuals to define business problems in new and innovative ways and stimulate creative ideas for their solution.
- This technique allows the researcher to develop an understanding about why people feel the way they do when compared to structured interviews.
- In focus groups, participants are able to bring to the fore issues in relation to a topic that they deem to be important and significant.
- In focus group interviews unlike in structured interviews there is a wide scope for the participants to challenge each other thoughts thus giving rise to new issues.
- The focus group offers the researcher the opportunity to study the ways in which individuals collectively make sense of a phenomenon and construct meanings around it.

Saunders et al (2007) suggests that focus group interview encourages the participant to relax and to initiate the discussion if only conducted in a neutral environment.

Bryman and Bell (2007) further lists certain disadvantages incorporating Focus groups:

- The researcher probably has less control over proceedings compared to an individual or a structure interview.
- As a huge amount of data is quickly produced it is often difficult to analyse.
- As a lot of people management is required to undertake a focus group it is usually difficult to organize.
- The transcription of recordings takes a longer time compared to that of an individual interview.
- As a lot of disagreements may arise in a focus group this might sometimes lead to group effects.

The researcher conducted two focus group interviews with appropriate amount of questions asked in each of them with group strength of five persons each.

3.8.2 Self Administered Questionnaires

Questionnaires can be exclusively and of great use in survey method (Saunders et al 2003).The type of questionnaires will be self administered, which will be delivered by hand to each respondent and collected later after completion. The rationale behind this is to enhance the respondent's participation in a small number of people to increase the respondent rate highly.

Bryman and Bell (2007) list the following advantages of using a self administered questionnaire:

- They are cheap to administer.
- Time taken for them to administer is less compared to any other method.
- These types of questionnaires do not suffer from the problem of interviewee asking questions in a different order or form.
- They are more convenient for the respondents considering the fact that they can fill it whenever they want and they can go.

However the disadvantages are

- The researcher cannot prompt in case the respondent does not understand any question/s.
- There are no situations for probing the respondents further for any questions depending on their answers.
- It is not possible to ask many questions that are not salient to respondents.
- The respondents can read the whole questionnaire as a whole first and then start answering giving scope to bias.
- These questionnaires cannot make sure that the right person has answered the questionnaire and they might not sometimes be appropriate to ask for certain category of respondents.

The final questionnaire has been drafted after editing the initial draft. The issues that were taken care while designing the questionnaire is as mentioned below:

- The questions were framed in such a way that they were very clear and easy to understand.
- The layout of the questionnaire was designed in such a way that it was easy to understand, pleasant to the eye and sequence of questions are easy to follow.
- The questions were framed so as to gain highest interaction with the respondent as if someone is talking to them.
- Pilot tests were conducted prior to administering the final questionnaire.

After the final draft was ready a pilot test was conducted with the questionnaire. Bryman and Bell (2007) highly recommends conducting of a pilot test for self administered questionnaires before it is administered to the sample population. They further suggest that a pilot test would make sure that the questionnaire as a whole functions well. Considering this suggestion a pilot study of questionnaire was conducted with six respondents, three each from both the genders to check for the potential weaknesses and assess the validity of the questionnaire.

In light of the feedbacks obtained from the respondents during the pilot study, some questions were altered and rephrased to be easily comprehensible by the sample population. Please refer Annexure 1 and Annexure 2 for the two drafts of the questionnaires.

The following table summarizes the scales of items of the questionnaire.

<i>Sections</i>	<i>Scale items</i>	<i>Answering Scale</i>
Section 1: Classification section	<ul style="list-style-type: none"> - How old are you? - What gender are you? - In which country were you born? 	Nominal scale 15-30 years 31-50 years 51 years and over Male Female India Pakistan Nigeria China Peru Brazil Any other
Section 2 Frequency of Calling Section	<ul style="list-style-type: none"> - How frequently do you yourself call your home country these days? - How frequently do you yourself make any international calls these days? - How often do you use calling card for making international calls these days? - How frequently do you use internet for making international calls these days? 	Forced Likert scale More than once a week About once a week Once a fortnight Once a month Less often Never
Section 2 continues Frequency of Calling Section	<ul style="list-style-type: none"> - Which provider do you use most often for making international calls through internet these days? 	Interval scale Skype Gtalk Voip Voice Yahoo

		Windows Any other
Section 3 Factors affecting VOIP technology usage Section	<ul style="list-style-type: none"> - Comparing Calling Cards and Internet Calling/VOIP technology which one do you think you use most often these days? - Comparing Calling Cards and Internet Calling which one do you think is more reliable? - Comparing Calling Cards and Internet Calling which one do you think is better value for money? - Comparing Calling Cards and Internet Calling which one do you think has better voice quality? - Comparing Calling Cards and Internet Calling which one do you think has better value added services? - Comparing Calling Cards and Internet Calling which one do you think is easily accessible? - On overall terms, comparing Calling Cards and Internet Calling taking everything into account which one do you think is flexible for operating? 	Interval scale Calling cards much more Calling cards a little more Neither of them Internet calling a little more Internet calling much more
Section 3 continues Factors affecting VOIP technology usage Section	<ul style="list-style-type: none"> - Is there any other reason that makes you feel that Internet Calling is better than Calling cards? 	Open answer

Table 1 : Scale of items of questionnaire

Later on, the questionnaire was introduced to the respondents.

The questionnaire was designed to understand the preferences of international students in relation to calling cards and VOIP Technology. The first few questions were adopted to find out the profile of the students briefly in relation to their ethnicity and age. The next few questions were introductory and asked the respondents if they were using VOIP technology often compared to any other means. The next few questions attempts to identify the preference with VOIP of respondents in relation to cost, voice quality, reliability and value added services. The last section was asked to find out what the

respondents prefer in relation to overall flexibility between calling cards and VOIP technology.

The questionnaire consists of 14 closed ended questions with one open ended question. Preliminary questions were added to make sure that the right samples of respondents are selected to answer the questionnaire as mentioned in the Annexure 1 and Annexure 2.

3.9 Population and Sampling Methods

3.9.1 Population

Saunders et al. (2007) suggests that whatever is the research question and objective, data needs to be collected to answer them. The process of data being collected and analysed from every possible case or group member is called census. The full set of cases from which a sample of taken is called the population. The target population is a complete group of objects or elements relevant to the research project (Hair et al., 2007)

The population for this research is defined and expressed in terms of students pursuing International MBA and studying in Dublin Business School from December 2007 and January 2008 batches.

The target population finally considered for the study is classified in the groups of genders, age and place of birth as mentioned in the tables below:

AGE	COUNT
15-30 years	66
31-50 years	03
51 years and above	0
Total	69

Table 2: Population classified in terms of age

GENDER	COUNT
Male	53
Female	16
Total	69

Table 3: Population classified in terms of gender

COUNTRY OF BIRTH	COUNT
India	41
China	11
Nigeria	8
Pakistan	6
Peru	1
Brazil	2
Total	69

Table 4: Population classified in terms of country of birth

3.9.2 Sampling Methods

For many research question and objectives it would be impossible to collect and analyse all the data available due to shortage of time, money and access to the source. Sampling methods provide a range of methods that enable to reduce the amount of data to be collected by considering only data from subgroups rather than all possible cases and elements (Saunders et al., 2007).

Cooper and Schindler (2001) suggest that the members of a sample are selected either on a probability basis or by another means. Probability sampling is based on the concept of random selection- a controlled procedure that assures that each population element is given a known nonzero chance of selection.

In contrast, non probability sampling is arbitrary and subjective. Each member does not have a known non zero chance of being included, allowing interviewers to chose sample

elements at random. Cooper and Schindler (2001) suggest that only probability samples provide estimates of precision.

The researcher uses the list of students in January 2008 and September 2007 which was obtained by individually counting them during the class hours. The total strength of students for both the intakes is 140 making it probability sampling.

*CHAPTER FOUR:
DATA ANALYSIS AND
FINDINGS*

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

In this section the researcher will present the findings from qualitative research carried out by semi structured focus group interview and quantitative research carried out by giving questionnaire to the students of Dublin Business School.

The focus group was made of 8 students each from different countries and carried out in the researcher's place of stay. It went on for a period of half an hour. The data and key points gained from the qualitative research were used to check whether the researcher have achieved the dissertation objective.

The questionnaire was administered after the focus group results were recorded on the 16th of January 2009 to be precise. The researcher emailed the questionnaire as time was an issue for the both the researcher as well as the respondents. Out of the total 120 questionnaires emailed the researcher received 73 completed questionnaires out of which 4 were not completed fully or termed invalid. Hence the total number of questionnaires that are used for the analysis is 69. Although there was not a very good response initially but, a subsequent reminder by the researcher yielded fruitful results.

4.2 QUALITATIVE DATA ANALYSIS FROM FOCUS GROUPS

The researcher was interested in understanding the students' perceptions in relation to their preference of VOIP technology usage over Calling cards at the moment. It was also attempted to find out in general the students' awareness in relation to the VOIP technology issues and the like

4.2.1 Short background

The focus group included students from the sample population who were selected in such a way that an equal participation in terms of the gender, age and place of birth were take care of. All persons invited in the focus group were given an introduction by the

researcher in relation to the reason for the focus group, the research's aims and objectives. A short introductory note was given to all the members of the focus groups so that they felt comfortable about their presence in the situation.

4.2.2 Focus Group Interaction Highlights

○ Do you think Calling cards are less used now?

The respondents expressed but not in a majority that Calling cards are less used now. Some of the respondents said that Calling Cards used by them as a backup facility rather than something that they would use pretty often r as a part of their regular calling routine. Some respondents always expressed their concern about the availability of Calling Cards and their genuineness as most of them are available in outlets which are meant for buying grey market goods. Hence their reliability is highly questionable.

Some respondents also expressed the brands that cater to the Calling cards industry does not mention which is the company that manufactures them, there is no mention of any customer service numbers, or even if they are mentioned they seldom do not work when tried to contact them. Overall the discussion was very healthy and respondents had a lot of enthusiasm to talk about Calling Cards. This discussion gave a confidence to the researcher that most of them are knowledgeable about the research problem area and can give some useful comments.

○ How well are you accessible to the Calling Cards?

When put forward the question about the accessibility of Calling card one respondent said that although they are quite accessible but only for people who have been in the process of buying them regularly. It would be difficult for a newcomer into a new place and find out where the Calling cards are available as they are much scarcer than Sim cards of mobile phones.

○ **Do you think down the line Calling Cards can become obsolete?**

When asked about the chances of Calling cards becoming obsolete from the world one day, there was some kind of mixed responses. Some respondents said that they weren't aware that Calling Cards are still available as they have never used them in recent days. They considered that they are already obsolete. However for this statement some respondents argued and said that Calling Cards cannot become obsolete as there are still some countries where the prices of Calling Cards are the cheapest providing them an edge over other kinds of communication.

The respondents also said that it was easy for Calling Card companies to stay alive just by making sure that they keep their price competitive compared to other means of communication, this way they can become competitive as well. Some respondents said that the single largest threat for Calling Card companies are the local landline service providers in every country they operate as they seem to work under highly competitive prices compared to any other provider. The researcher realized that it is very difficult to conclude if Calling cards can become obsolete one day as they can still keep themselves floating by keeping their prices lower compared with their competitors.

○ **Is there any competition between Calling Card suppliers?**

Some respondents clearly expressed their ignorance in relation to any kind of competition between Calling Card suppliers as they don't buy Calling Cards with brands but rather with the country name and the amount of talk time the card enables to speak. Some respondents expressed their views when they said that Calling Card companies have reached in for some kind of understanding wherein they cater to some part of the continent only and they don't interfere with some other countries in which the other provider specializes in. Hence they have begun to co-exist so that rather than providing competition between themselves they keep themselves competitive with other providers. The researcher came to a conclusion that there is a very less amount of competition between Calling Card companies as they are more concentrating on co existence in the industry they are in.

○ **Have you heard of VOIP technology before today?**

Most of the respondents said they have heard of this term with a provider called “Voip Voice” which either they use or have heard their friends using. The researcher was asked by most of the respondents if the discussion about the same provider. Some respondents said they knew its abbreviation as “Voice Over Internet Protocol” calling. One respondent volunteered and explained what the VOIP technology is and then the others realized that their guess was right. Some respondents suggested that it is too technical a word and should rather be called as “calling through the internet” or “internet calling” and would make it easy to understand for common person and easy to interpret as well. The researcher realized that most of the sample population he has selected was aware of the VOIP technology but it has to be addressed in as a different word so that people identify it very easily.

○ **Do you think this has brought a revolution in the internet communication sector?**

Some respondents said that it has indeed created a revolution in the internet communication industry as it was something unimaginable some time but now reality and widely used. Some respondents felt that it has not only created a revolution but also has avoided the monopoly created by the telecommunications industry which were deciding the pricing and were keeping the consumers at their mercy. The researcher observed that a majority of the respondents agreed unanimously that VOIP technology or internet calling has been and remains to be very useful for international calling and created a revolution in the communication sector.

○ **What makes you prefer VOIP Technology for making International Calls compared to any other means?**

Respondents had a variety of answers for this question, in fact they were very unique and personality oriented. Some respondents said that the value of calling was the single reason why they preferred internet calling over calling cards, and it helped in saving money. Some respondents said that internet calling helped them to keep accountability of

the calls that they make using the option provided by the providers to save the call history.

Some respondents said that internet calling was very flexible as it could be done whenever required did not have any limitations like call credit getting finished without your knowledge. Some respondents said it was reliable in the sense that they could be reloaded using a credit card wherever you are and the providers provided the guarantee for the same. Some respondents said that for regular callers the service providers made available some value added service in accordance with the countries they called or depending on their call history. All in all, putting forth this question the researcher realized that the respondents had some very genuine reasons behind them using the internet calling method for most of their international calling needs.

○ **Do you think in the future VOIP Technology can also become obsolete?**

Some respondents said that there is all scope for VOIP technology becoming obsolete with the rate at which technology advancements are happening in today's world. These respondents also added that there might be some additional technologies which might come to the aid of VOIP to improve the voice quality or disconnection issues. The respondents said that the calls getting disconnected when used with internet calling was one area which needed a lot of improvement compared with calling cards, as it enabled uninterrupted conversation using the telephone. Hence, this was the issue which the new technology might come up with replacing VOIP or internet calling.

However, there were some respondents who felt that it is very hard for VOIP technology to turn obsolete as this is one of the most efficient and flexible ways internet can provide calls to be made. The researcher through this conversation realized that technology advancements had a strong impact over the respondent's mindsets that future is highly unimaginable.

4.3 QUANTITATIVE DATA ANALYSIS FROM QUESTIONNAIRE

4.3.1 Classification Section

This section consists of three questions which is primarily put forth to understand the profiles of the respondents who are interviewed. This would help the researcher in identifying the limitations and strengths of the research undertaken. These three questions were asked in the beginning of the questionnaire with an assurance to the respondents that they are asked just get the results in aggregate form and no replies will be linked to any respondent whatsoever. They will be both kept confidential and destroyed after the analysis of the study.

Question 1:

The classification questions were asked primarily to find out the profile of the students who were administered with the questionnaire during this research. The data obtained regarding the various groups and categories into which the respondents fall is going to be discussed using tables and chart diagrams.

	<i>How old are you?</i>	
	Count	Percentage
15-30 years	66	95.65%
31-50 years	03	04.35%
51 years and above	0	00.00%
Total	69	100.00%

Table 5: Question one responses

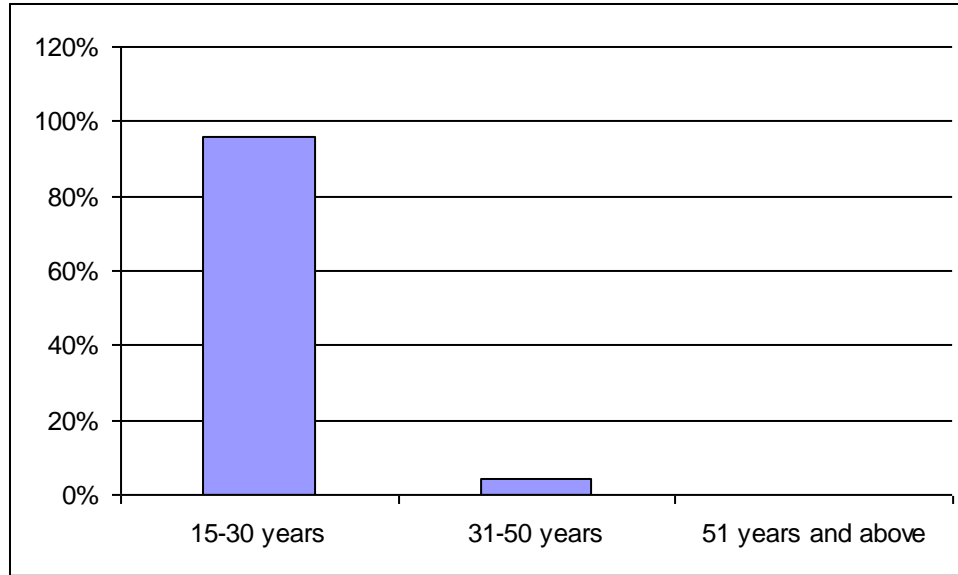


Figure 4: Question one response representation in bar chart

The above table and pie chart clearly shows the age percentage of respondents interviewed during the course of this research. 95.65% of the respondents were in the age group of 15-30 years and only a 4.35% were in the age group of 31-50 years. None of the respondents being present in the age group of 51 years and above clearly shows that the profile of the students is really young. This also helps considerably in ascertaining the perception of technology innovations as youngsters seem to be much more interested in technological advancements than middle and old aged.

Question 2:

	<i>Are you a?</i>	
	Count	Percentage
Male	53	76.81%
Female	16	23.19%
Total	69	100.00%

Table 6: Question two responses

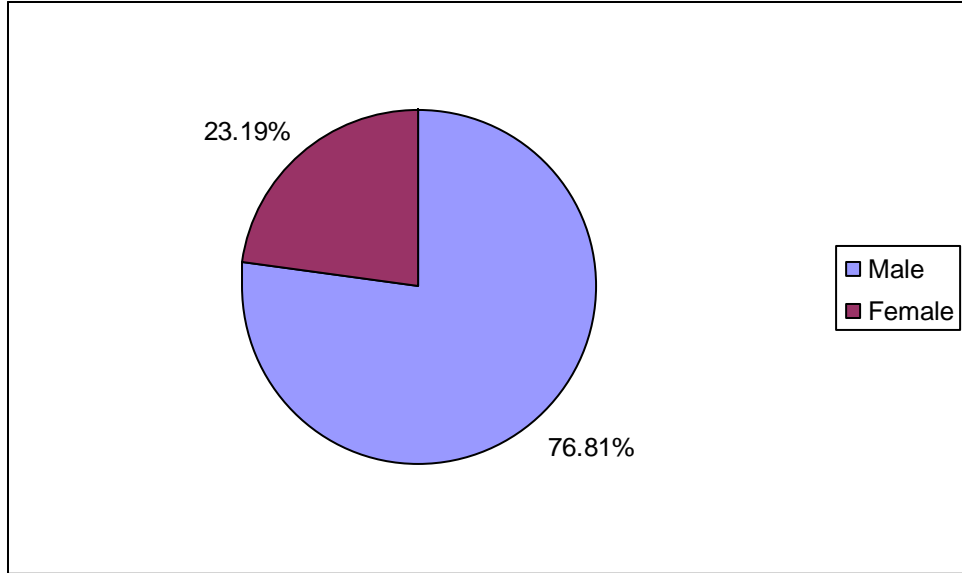


Figure 5: Question two response representation in pie chart

The above table and chart clearly shows the gender classification of the respondents being interviewed as a part of this research. Out of the 69 respondents 76.81% of the students were male whereas 23.19% were females. This does not classify that there was a lower response from the female respondents. It is on the other hand a fact that there were a very few female students available in the sample population selected compared to the male respondents. It is also true that the response of the female respondents has been better than the female respondents.

Question 3:

	<i>In which country were you born?</i>	
	Count	Percentage
India	41	59.42%
China	11	15.94%
Nigeria	8	11.59%
Pakistan	6	8.70%
Peru	1	1.45%
Brazil	2	2.90%
Total	69	100.00%

Table 7: Question three responses

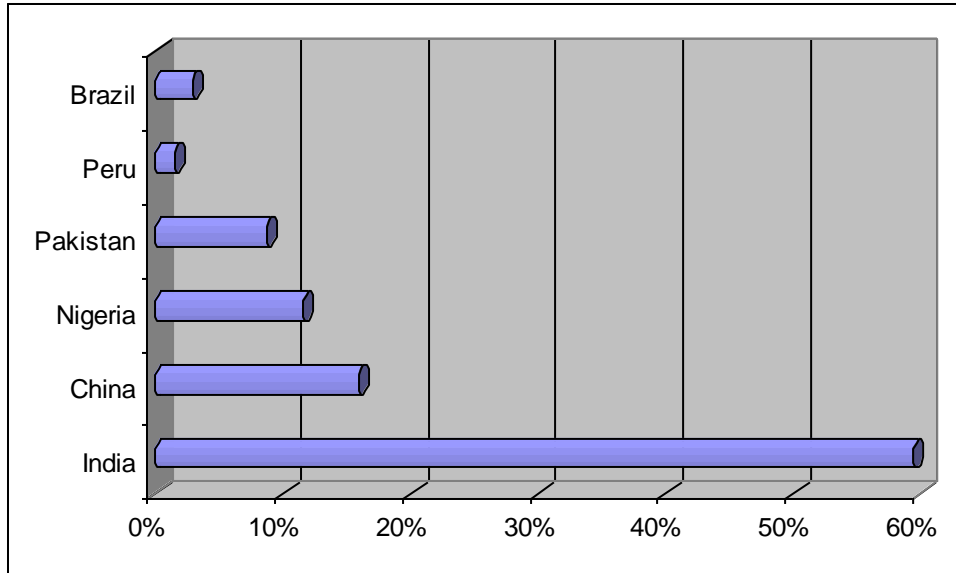


Figure 6: Question three response representation in cylinder chart

The above table and chart clearly shows the ethnicity of the respondents in relation to this research. Out of the 69 respondents a whopping 59.42% were born in India, whereas 15.94% were born in China. An 11.59%, 8.7%, 1.45% and 2.95 were respectively born in Nigeria, Pakistan, Peru and Brazil. This information is critical in relation to the countries to which the respondents are likely to make their international calls as part of their communication back home or friends/relatives. It is true in this case as well that the sample population had a very large size from the Asian subcontinent and thus is the profile.

4.3.2 Frequency of calling section

This section primarily asked questions in an attempt to find out the respondents frequency of making calls and especially international calls on the basis of which this research study stands. This section has two questions which asks about how frequently the respondent calls his/her home country and how frequently does he/she make an international call. The analysis of this information was important as this would ensure

that the respondents selected are frequent users of international calling facility and provide the correct perception which the study aims at finding out.

Question 4:

	<i>How frequently do you yourself call your home country these days?</i>						Total
	More than once a week	About once a week	Once a fortnight	Once a month	Less often	Never	
Count	18	37	9	3	2	0	69
Percentage	26.09%	53.62%	13.04%	4.35%	2.90%	0.00%	100%

Table 8: Question four responses

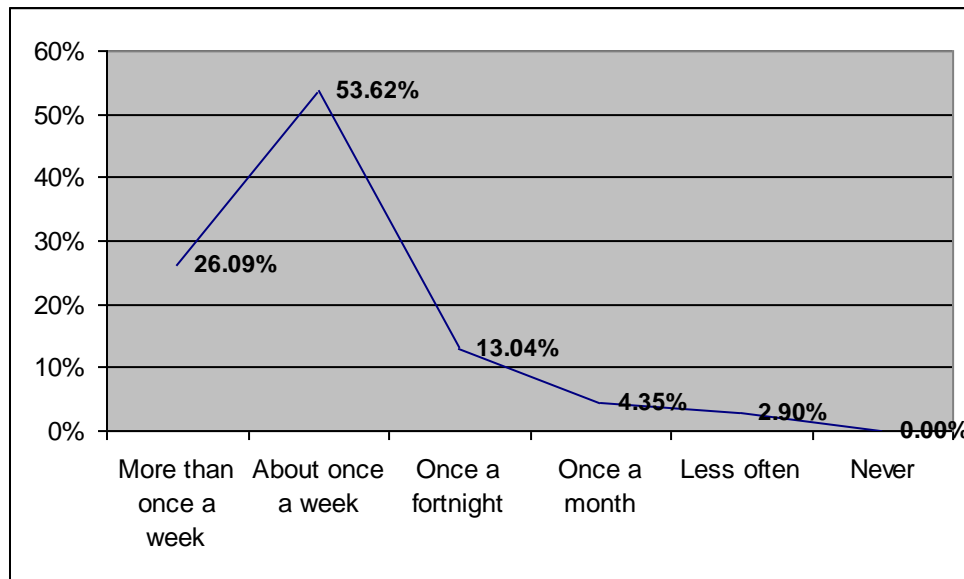


Figure 7: Question four response representation in line chart

The above table and chart shows the frequency with which the respondents call their home country for various reasons. It is notable that 26.09% of the respondents call their home country more than once a week and a whopping 53.62% call their home country about once a week. As the frequency diminishes it can be noted that the percentage of

respondents also decreases. This clearly indicates that a high percentage of respondents are frequent callers to their home countries.

Question 5:

	<i>How frequently do you yourself make any international calls these days?</i>						Total
	More than once a week	About once a week	Once a fortnight	Once a month	Less often	Never	
Count	17	39	9	2	2	0	69
Percentage	24.64%	56.52%	13.04%	2.90%	2.90%	0.00%	100%

Table 9: Question five responses

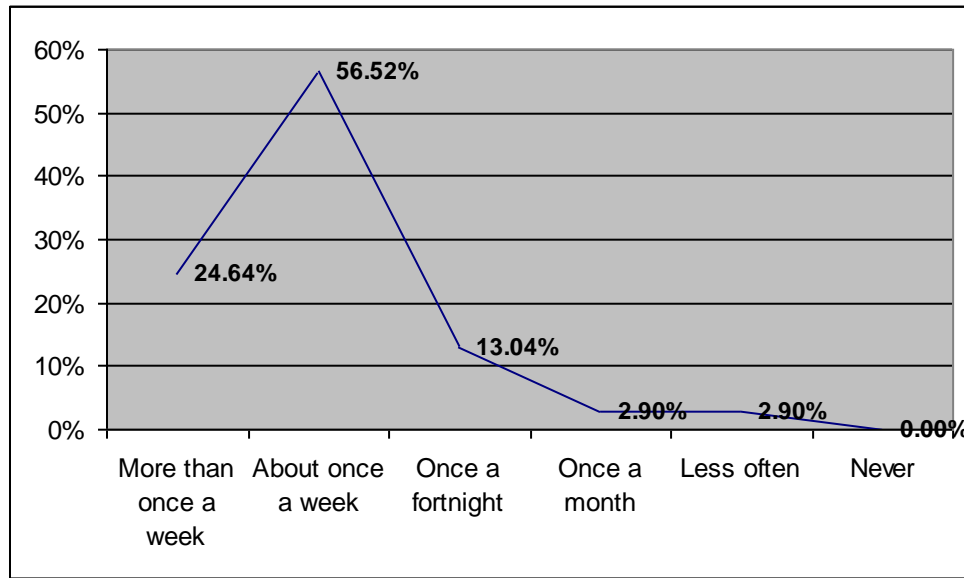


Figure 8: Question five response representation in line chart

The above table and chart shows the frequency with which the respondents make international calls for various reasons. It is notable that 24.64% of the respondents make international calls more than once a week and a whopping 56.52% call make international calls about once a week. Again, as previous table, as the frequency diminishes it can be noted that the percentage of respondents also decreases. This clearly indicates that a high

percentage of respondents are frequent international callers and the market potential for international calling among students is huge and cannot be ignored.

4.3.3 Mode of calling Section

This section asked questions which attempted to find out the means and mode with which the respondents made international calls. It also puts forth information about what provider the respondents use when they use internet calling/VOIP technology. The section has three questions in all and the respondents were asked to choose one answer against the choices provided. This section and information obtained from the answers were very important as it put forward the means that respondents used for making international calls.

Question 6:

	<i>How often do you use calling card for making international calls these days?</i>						Total
	More than once a week	About once a week	Once a fortnight	Once a month	Less often	Never	
Count	1	0	2	7	22	37	69
Percentage	1.45%	0.00%	2.90%	10.14%	31.88%	53.62%	100%

Table 10: Question six responses

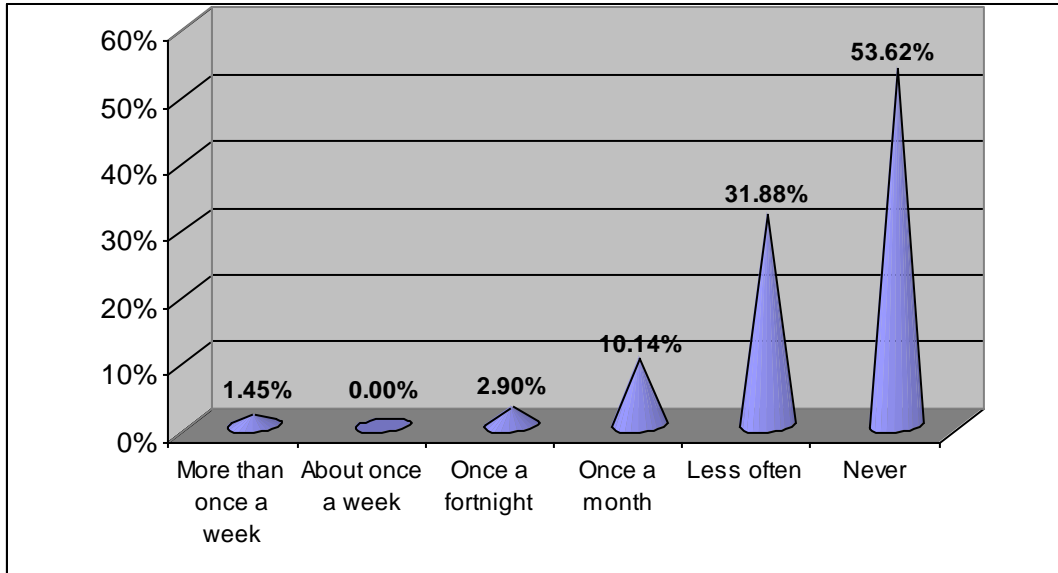


Figure 9: Question six response representation in cone chart

The above chart and table shows the frequency of respondents at the moment using Calling cards to make international calls. The respondent views are also designated in terms of cone graphs which clearly show that calling cards are at the verge of becoming obsolete. A majority of respondents (53.62% to be precise) say that they don't use calling cards these days whereas a 31.88% say that they use calling cards less often these days. Only 1.45% and 2.9% of the respondents say that they use calling cards more than once a week and once a fortnight respectively. None of them say they use calling cards once a week.

Question 7:

	<i>How frequently do you use internet for making international calls these days?</i>						Total
	More than once a week	About once a week	Once a fortnight	Once a month	Less often	Never	
Count	36	19	9	2	3	0	69
Percentage	52.17%	27.54%	13.04%	2.90%	4.35%	0.00%	100%

Table 11: Question seven responses

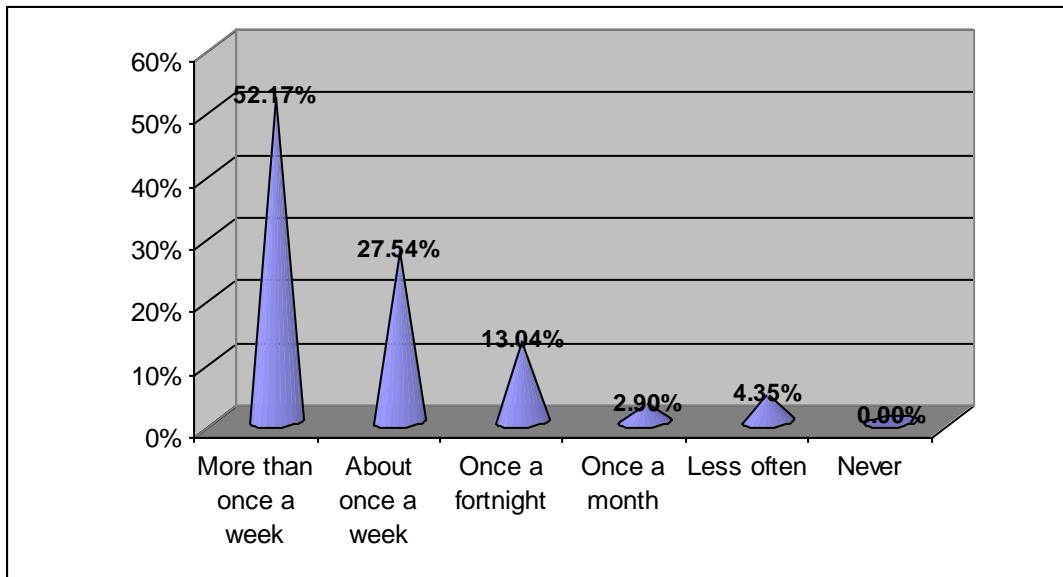


Figure 10: Question seven response representation in cone chart

The above table and chart shows how frequently the respondents use internet calling or VOIP technology for making international calls. The result as it can be seen in the cone chart is the other way round compared to the previous questions. More than half of the respondents (52.17% to be precise) use internet calling more than once a week to make international calls. 27.54% of the respondents use internet calling about once a week for making international calls. About 13.04%, 2.9% and 4.35% of the respondents use

internet calling once a fortnight, once a month and less often respectively for making international calls. This clearly shows that internet calling is in vogue at the moment among the students used for the research study.

Question 8:

<i>Which provider do you use most often for making international calls through internet these days?</i>		
Brand names	Count	Percentage
Skype	18	26.09%
Yahoo	01	1.45%
Gtalk	03	4.35%
Voip Voice	31	44.93%
Windows	02	2.90%
Any other	14	20.29%
Total	69	100.00%

Table 12: Question eight responses

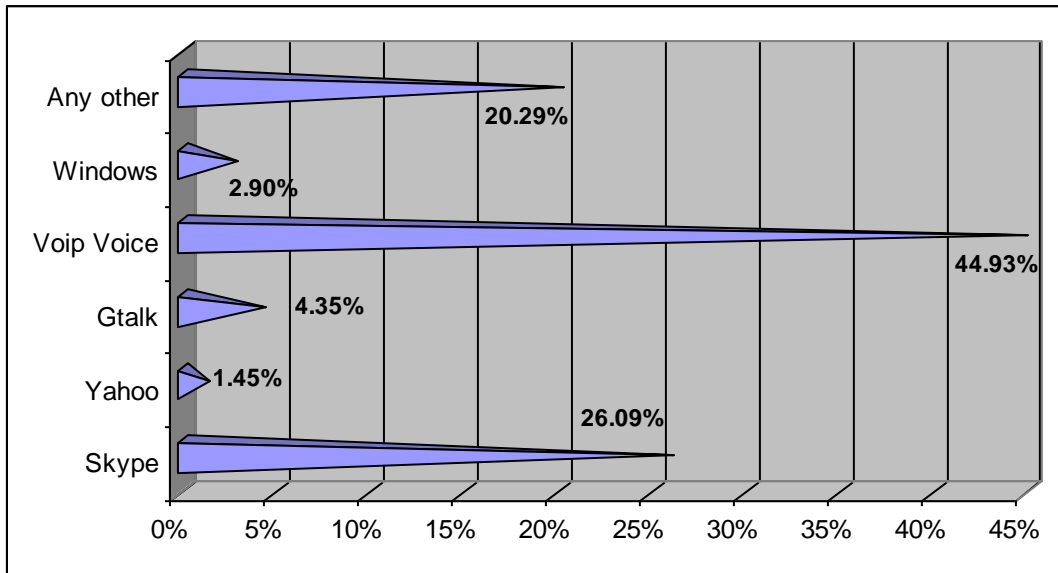


Figure 11: Question eight response representation in pyramid chart

The above table shows the responses of the respondents in relation to the providers they use for making internet calls for international locations. The same responses have been shown in a pyramid chart followed. It is clear from the responses that a majority (44.93% to be precise) use Voip Voice as their provider for making international calls. This is

followed by Skype which is used by 26.09% of the respondents. Providers which were not provided in the list were used by 20.29% of the respondents. 4.35%, 2.9% and 1.45% has been respectively been using Gtalk, Windows messenger and Yahoo Messenger to make their international calls. The results clearly indicates that Voip Voice and Skype has been the most popular Voip technology providers used by most of the respondents in this research study for making international calls.

4.3.4 Factors affecting Voip Technology Usage Section

This section was the most important section which attempted in understanding the reasons why the respondents preferred Internet calling/VOIP technology over Calling Cards. Each of the reasons which were highlighted in the secondary research was put forward one by one and the respondents were asked to tick their preference in relation to the same in comparison with Calling cards. The respondents were given five options to select against each statements including one neutral choice. The section had eight closed ended questions with one open ended question asking for the respondents if they felt they had some other reason apart from the ones asked for their preference of Internet Calling/ VOIP technology over Calling cards.

Question 9:

	<i>Comparing Calling Cards and Internet Calling/VOIP technology which one does you think you use most often these days?</i>			Total
	Internet calling more frequently	Neither of them	Calling Cards more frequently	
Count	59	7	3	69
Percentage	85.51%	10.14%	4.35%	100%

Table 13: Question nine responses

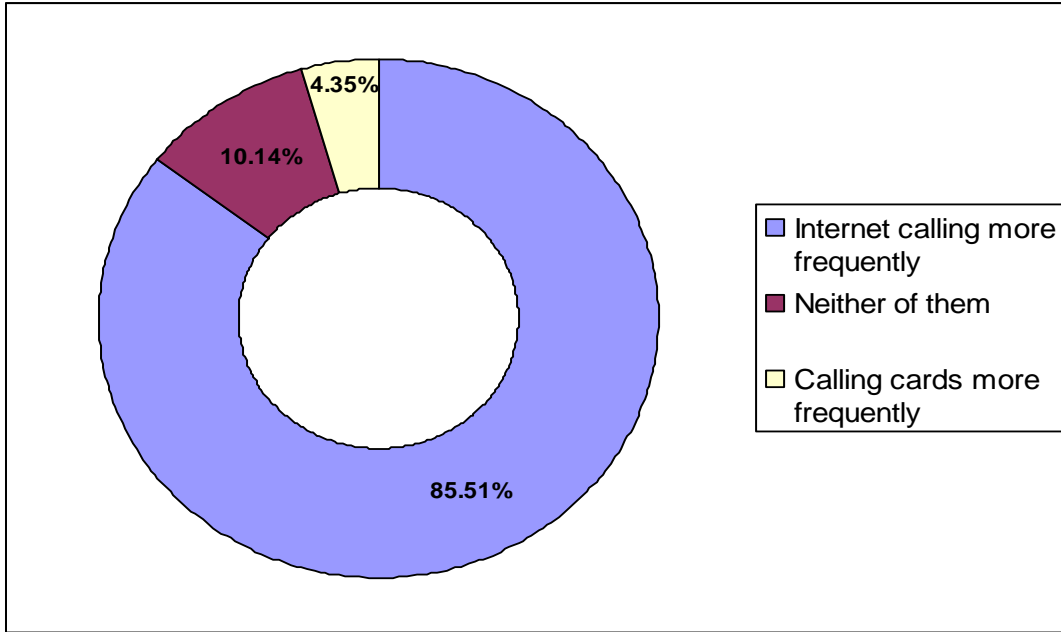


Figure 12: Question nine response representation in terms of doughnut chart
The above table shows the respondents responses when they were asked about which one they would use most often comparing calling cards and internet calling these days for making international calls. The results clearly indicated that a majority (85.51% to be precise) used internet calling or VOIP technology more frequently compared to calling cards which were used by only 4.35% of the respondents. About 10.14% of the respondents responded that they use neither of them. The results clearly indicate that internet calling has been used widely compared to calling cards by the respondents undoubtedly.

Question 10:

	<i>Comparing Calling Cards and Internet Calling which one do you think is more reliable?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	15	23	9	10	12	69
Percentage	21.74%	33.33%	13.04%	14.49%	17.39%	100%

Table 14: Question ten responses

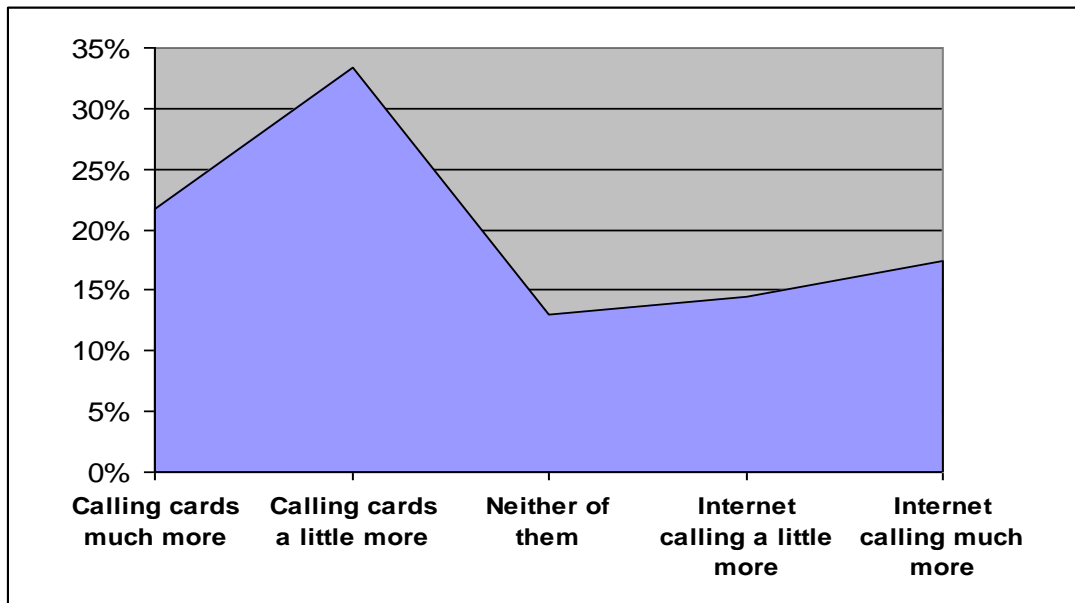


Figure 13: Question ten response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling would they feel more reliable while usage. It was astonishing that 21.74% and 33.33% of the respondents felt that Calling Cards were much more and a little more reliable compared to Internet Calling. A 13.04% of the respondents felt that neither of them was reliable. On the other hand a 14.49% and

17.39% of the respondents felt that Internet Calling was a little more and much more reliable compared to Calling Cards. The Area Diagram above clearly shows that a majority of respondents felt that Calling Cards were more reliable compared to Internet Calling.

Question 11:

	<i>Comparing Calling Cards and Internet Calling which one do you think is better value for money?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	1	2	7	22	37	69
Percentage	1.45%	2.90%	10.14%	31.88%	53.62%	100%

Table 15: Question eleven responses

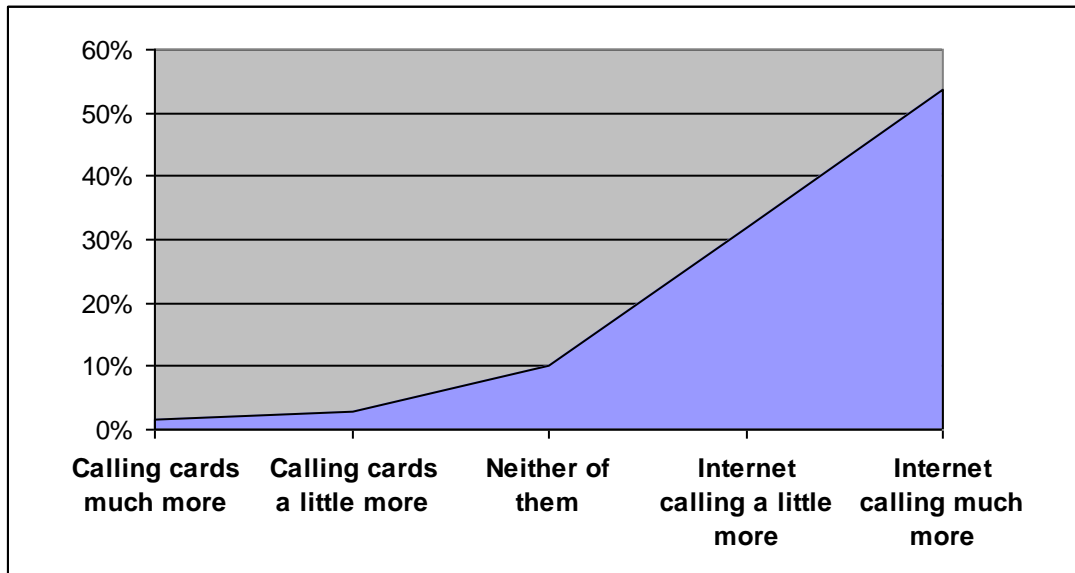


Figure 14: Question eleven response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling would they feel are better value for money. A

whopping 31.88% and 53.62% of the respondents felt that Internet Calling provided a little more and much more value for money compared with Calling Cards. A 10.14% of the respondents felt that neither of them provided better value for money. On the other hand a mere 1.45% and 2.90% of the respondents felt that Calling Cards provided a little more and much more value for money compared to Internet calling. The Area Diagram above clearly shows that a majority of respondents felt that Internet Calling undoubtedly provided a better value for money compared to Calling Cards.

Question 12:

	<i>Comparing Calling Cards and Internet Calling which one do you think has better voice quality?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	21	12	0	16	20	69
Percentage	30.43%	17.39%	0.0%	23.19%	28.99%	100%

Table 16: Question twelve responses

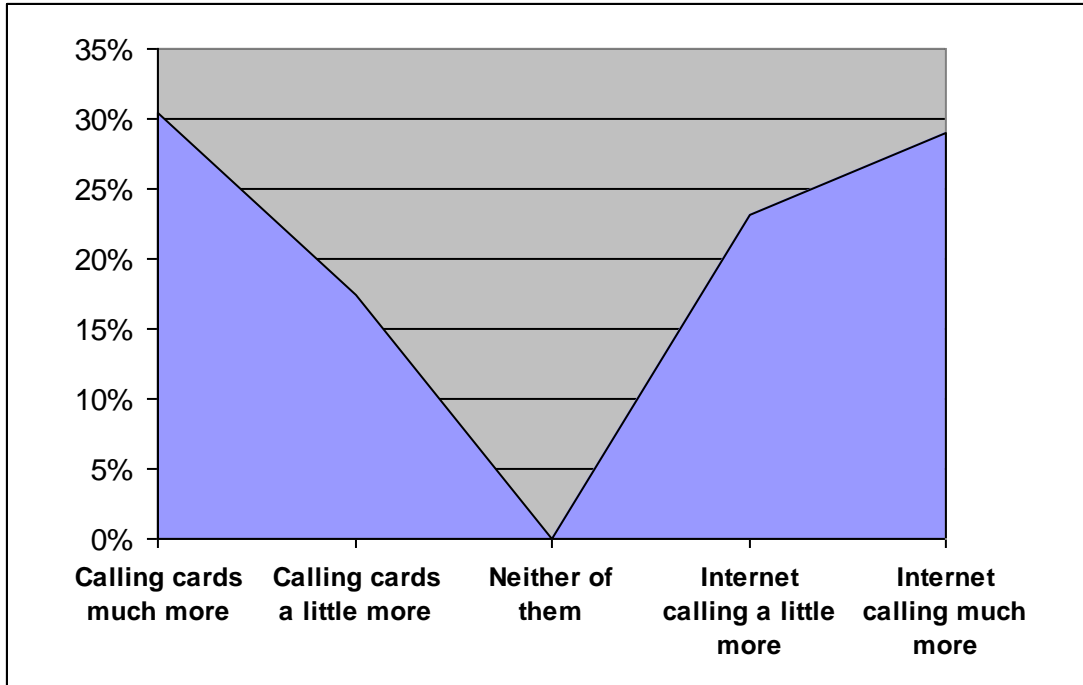


Figure 15: Question twelve response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling provides a better voice quality. A 30.43% and 17.39% of the respondents felt that Calling Cards provided a little more and much more voice quality compared with Internet Calling. None of the respondents felt that neither of them provided better voice quality. On the other hand a 23.19% and 28.99% of the respondents felt that Internet calling provided a little more and much more voice quality compared to Calling Cards. The Area Diagram above clearly shows that respondents had mixed responses and almost equal number of them felt that either of them provided better voice quality if considered for usage.

Question 13:

	<i>Comparing Calling Cards and Internet Calling which one do you think has better value added services?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	0	0	16	26	27	69
Percentage	0.00%	0.00%	23.19%	37.68%	39.13%	100%

Table 17: Question thirteen responses

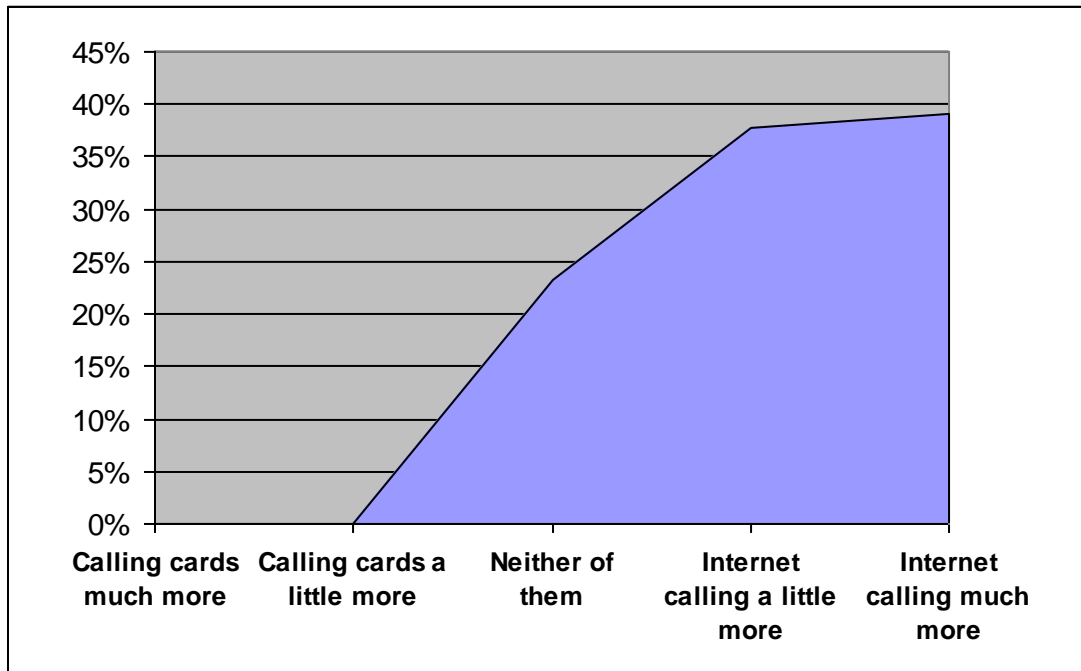


Figure 16: Question thirteen response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling provides a better value added services. A whopping 37.68% and 39.13% of the respondents felt that Internet Calling provided a

little more and much more value added services compared with Calling cards. A 23.19% of the respondents felt that neither of them provided better voice quality. On the other surprisingly none of the respondents felt that Calling cards provided a little more or a much more value added services compared to Internet calling. The Area Diagram above clearly shows that respondents had a total agreement that Calling card at the moment doesn't provide any value added services when compared to Internet Calling.

Question 14:

	<i>Comparing Calling Cards and Internet Calling which one do you think is easily accessible?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	3	12	0	33	21	69
Percentage	4.35%	17.39%	0.00%	47.83%	30.43%	100%

Table 18: Question fourteen responses

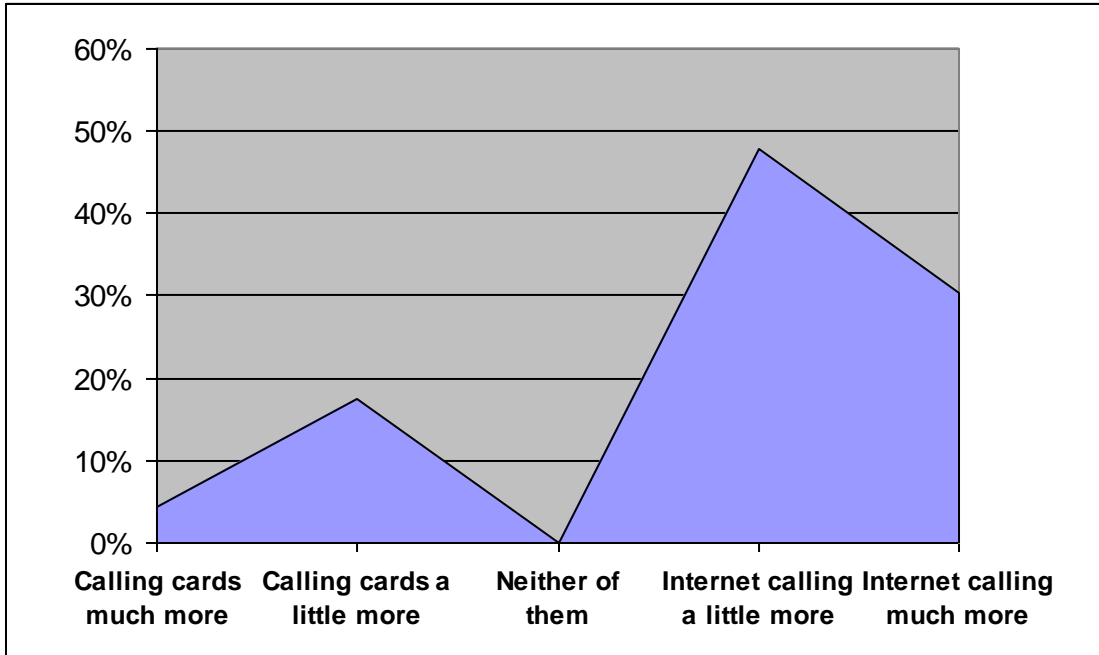


Figure 17: Question fourteen response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling can be easily accessible for users. Only 4.35% and 17.39% of the respondents felt that Calling Cards provided a little more and much more accessibility for users compared with Internet Calling. None of the respondents felt that neither of them provided better accessibility. On the other hand a whopping 47.83% and 30.43% of the respondents felt that Internet calling provided a little more and much more accessibility for the users compared to Calling Cards. The Area Diagram above clearly shows that respondents felt that Internet calling is accessible easily compared with calling cards.

Question 15:

	<i>On overall terms, comparing Calling Cards and Internet Calling taking everything into account which one do you think is flexible for operating?</i>					Total
	Calling Cards much more	Calling Cards a little more	Neither of them	Internet Calling a little more	Internet Calling much more	
Count	2	5	3	26	33	69
Percentage	2.90%	7.25%	4.35%	37.68%	47.83%	100%

Table 19: Question fifteen responses

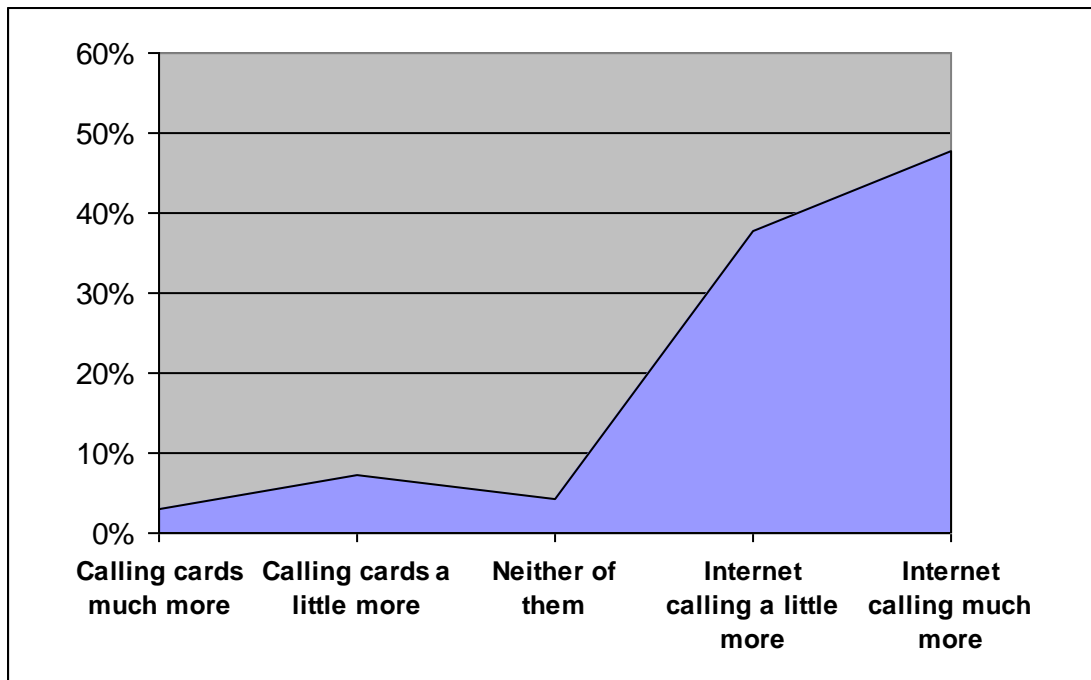


Figure 18: Question fifteen response representation in area chart

The above table shows the responses of respondents regarding their view of which one between Calling cards and Internet Calling provides better flexibility for operation. Only

2.90% and 7.25% of the respondents felt that Calling Cards provided a little more and much more flexibility for operation compared with Internet Calling. A 4.35% of the respondents felt that neither of them provided better flexibility for operation. On the other hand a whopping 37.68% and 47.83% of the respondents felt that Internet calling provided a little more and much more flexibility for operation compared to Calling Cards. The Area Diagram above clearly shows that respondents felt that Internet calling is flexible for operation compared with calling cards.

CHAPTER FIVE
CONCLUSIONS

CHAPTER FIVE: CONCLUSIONS

In this section the researcher will discuss all the conclusions that are drawn in relation to three different perspectives. In the first section conclusions from findings are briefly discussed followed by general conclusions drawn. Some managerial implications will then be discussed briefly to end the section.

5.1 Conclusions from Findings

The findings are discussed by referring to both the research objectives and research questions mentioned in the Research Methodology and Methods section. In this section, the researcher will draw on from the quantitative and qualitative analysis conducted using questionnaires and focus groups. The literature review is referenced wherever applicable linking the secondary research with the primary research conducted. Each research objective and research question will be examined separately to show how it has been researched in terms of the analysis and the literature reviewed.

5.1.1 In relation to the Research Objectives

The research objectives were identified as essential in answering the research question and deriving the research hypotheses. In total there are five objectives.

Objective 1: To understand VOIP technology.

This objective was reviewed mostly using literature review and qualitative analysis. The main aim of the researcher in relation to understand the working of VOIP technology was to make sure that the research gains a good in depth foundation before the practical aspects are considered in relation to the issue. The secondary literature provided in great detail what VOIP technology actually meant. The analysis was conducted using the viewpoints of various authors in the literature review section. The qualitative analysis

using the focus groups enabled the researcher to identify if the respondents were well aware of the VOIP technology which they use as a part of their usage for international calling. Although considerable amount of knowledge was demonstrated by the respondents, they predominantly identified VOIP technology with the service providers like VOIP voice or Skype that they used generally and preferred to call it as internet calling than VOIP technology.

Through a detailed examination of the data available to the researcher using the secondary and qualitative data obtained using focus group, the objective of understanding VOIP technology was achieved.

Objective 2: To analyze the international students' behaviour over the changing technology trends.

Although not much literature was reviewed in relation to this objective, primarily because there was absolutely very little literature analyzed in relation to international students' behaviour over the changing technology trends. A much of this objective was adhered during the qualitative analysis conducted using the focus groups. The international students demonstrated a great degree of vulnerability towards changing technology trends.

The respondents also demonstrated that although they were ready to accept the changing technology trends provided it had a very good value for money with quality of service. Value for money was communicated as the most important aspect as international students were away from their home and had concern towards their living expenses in the foreign countries they are living in. Particularly in relation to the VOIP technology international students showed a great deal of interest and communicated that they use it primarily because it was flexible for usage and very cheap to operate. Through the detailed examination of the primary data the researcher could arrive at answering the objective of analyzing the behaviour of international students towards changing technology trends.

Objective 3: To determine the advantages and disadvantages of the VOIP calls over the calling cards.

This objective was primarily ascertained using secondary literature dealt already by a lot of writers in this area. Later on, against all the advantages and disadvantages available in the secondary literature, the same were tested with the respondents in the qualitative and quantitative analysis for proving or disproving them. Using the qualitative and quantitative analysis it was found that all the literature reviewed were proved. But, there were certain reservations. Because of the reason that the sample population was international students, the focus of usage in the research was mainly on making international calls to their home country. The advantages which were proved were in relation to their reliability, value for money, value added services, accessibility and flexibility. Majority of the respondents felt that usage of VOIP technology provided them with better value added services and flexibility for usage. In addition due to the sheer reason that it can be used from the computer wherever internet is available respondents felt that it was better accessible. There was not a full agreement towards VOIP Technology being fully reliable among the respondents which maybe was the reason for certain degree of skepticism towards it.

Voice quality was one area where the respondents felt that the VOIP technology or Internet calls have to improve a lot. The main concern was the abrupt ending of calls maybe either due to the technical failure from the service providers or due to the interruption in the internet connection or the Wireless Fidelity services used by the user. Through the analysis of all the primary and secondary data available to his disposal could achieve this objective of finding out the advantages and disadvantages of VOIP technology.

Objective 4: To draw conclusions about the popularity of VOIP Technology over calling cards.

Although the literature review analyzed in this study revealed this objective to a certain extent it was very essential for the researcher to analyze this objective using primary research mainly because popularity was a phrase which often was short lived especially with technological trends.

Using the qualitative analysis and quantitative analysis the respondents communicated that compared to Calling cards, the advantaged provided by the VOIP technology was so far more that it was undoubtedly popular. It was also analyzed using the primary research in relation to how many respondents were using VOIP technology at the moment and there was a majority of them using it at the moment indicating that Calling cards were moving towards becoming obsolete. Although, it was also noticeable that the popularity of the VOIP technology can remain evergreen simply due to the reason that technology is meant to get advanced as days pass by. The same thoughts very shared by the respondents in the focus group when they had skepticism for VOIP technology remaining as an edge over any other technology in the future for making international calls.

Hence the researcher achieved the objective that at the moment VOIP technology is more popular than Calling Cards.

5.1.2 In relation to the Research Question

The research questions are aimed at feeding the results into the overall research problem. There was one research question which formed the epicenter of the research.

Research Question: Has the new VOIP technology impacted over International calling cards in relevance to its usage by international students in Ireland?

The secondary literature reviewed suggests that the advent of VOIP technology has revolutionized the communication industry in a way that consumers have now better choices in relation to their calling needs. It also suggested that VOIP technology enables a consumer to use the internet and make calls at his time and without any hassles just by clicking a few options in the computer. Although there was very little literature which put forth the views of international students in relation to this issue, the researcher thus went on to prove the same using the primary research.

Primary research was conducted with Qualitative Analysis using focus groups and Quantitative Analysis using questionnaire. Both the analysis proved undoubtedly that there was a huge implication of the advent of VOIP technology over the sample population which was the international students from Dublin Business School. It also revealed the implications were so profound that it has led to some students completely abandoning Calling cards and using VOIP technology predominantly.

As a result of all the analysis conducted using primary and secondary data highlighted in the Literature Review and Data Findings chapter of this research, the researcher concludes that VOIP technology has impacted highly over the usage of Calling cards in relevance to international students in Ireland.

5.2 General Conclusion

The aim of this research is to investigate the research objectives, research questions and hypotheses as discussed in the Research Methodology and Methods chapter. However, the research objectives and research questions have been analyzed in relation to the findings in the previous sections. Hence the aim of this section will be to draw general conclusions by summarizing the findings and make an assertion whether the hypotheses previously developed are held true or not.

At the beginning of this study, the researcher had assumed the following research hypotheses:

“VOIP technology has replaced calling cards due to its flexibility and cost of usage”.

The respondents felt that Calling Cards and VOIP technology both have questionable potential towards reliability issues. Respondents feel that Calling Cards are not reliable due to the reason that their sources are sometimes untraceable as they do not have customer service numbers or have numbers which do not operate. In addition the talk time that is mentioned in the calling cards do not work for the time it promises to deliver. On the other hand, VOIP technology’s reliability is also questionable for the reason that they are very much dependent on the internet facility that the user possesses.

The respondents felt that undoubtedly VOIP technology has much better value for money compared to Calling cards as they are very competitive in whatever countries they are operating. The respondents also felt that this was the primary reason why they have dejected Calling cards over VOIP technology.

The respondents felt, although not in a majority that the voice qualities in Calling cards are better compared to the VOIP technology. The major areas of concern are the abrupt disconnection of calls, time gaps in the voice signals receiving and the like in the VOIP technology when used with the internet.

The respondents also felt that compared to Calling cards the VOIP technology providers provided better value for money in terms of providing value added services like discounts on calling for some countries and tailor made services to individual customers depending on their call density and choice of countries.

Accessibility was also an issue which most of the respondents felt was very good in VOIP technology compared to Calling cards, as it was sometimes very difficult to identify Calling card suppliers. It was also a well known fact that Calling cards are

increasingly sold at the areas where most of the grey market goods were sold, raising questions about the reliability of their genuineness.

Finally, most of the respondents in a majority felt that flexibility was another issue besides the value for money aspect which made them use VOIP technology compared to Calling cards. Some issues like call time, place of calling, call period and call history were something that could easily be available with VOIP technology when compared with Calling cards.

Considering all the above points and their analysis clearly proves the hypothesis previously drawn.

5.3 Managerial Implications

With the help of the above analysis a lot of managerial implications can be derived. The international students interviewed as a part of this study have clearly demonstrated that they have accepted VOIP technology to a great extent. Hence it is very important for managers of service providers to consider this segment very seriously and try to provide some tailor made value added services to the students in addition to the presently available ones.

The students as a part of this study also clearly indicated that voice quality is one aspect which acted as a hindrance for them for totally accepting VOIP technology. This clearly implies that managers of service providers should make sure that continuous improvement in the area of voice quality improvement must be made as a company policy and the targets achieved should be clearly communicated to the consumers so that they are always kept in confidence.

The research study as a whole has many implications in the technological advancement arena for both corporations and consumers using them. VOIP technology has

undoubtedly replaced Calling Cards but it is also true they are keeping themselves afloat by specializing in certain country locations. So, it is very important for providers to keep themselves competitive and provide new and refresh their present value added services so that they remain clearly ahead of the competition.

*CHAPTER SIX:
REFLECTIONS ON
LEARNING AND SKILL
DEVELOPMENT*

CHAPTER SIX: REFLECTIONS ON LEARNING AND SKILL DEVELOPMENT

This section provides and insight of how the researcher has learnt throughout the MBA International course in an organized way and to examine the skill development in relation to the same. In the entire course it develops ideas about formal business skills along with other forms of skills in the areas such as time management and communication.

Kolb (1984) defines learning as a process whereby knowledge is created through the transformation of experience.

6.1 Background

The researcher considers that in the past five years reflecting upon all the happenings, the MBA international course has changed the way in which the thinking process has changed and the behaviour with regard to certain situations. Before this course, the researcher has completed his Bachelor in Engineering in 2003. After graduation the researcher had been working in different positions in different capacities for a couple of organizations. It is after this that the researcher decided to embark on formal education.

Following some research, the researcher chose the Masters in Business Administration program in Dublin Business School. The aim of this course is to equip the students with the skills required to employ statistical and quantitative methods used to support decision making and planning purpose. This also helps the students to get more and more detailed ideas to analyze every aspect of this specific problem encountered during the process of implementing a business plan, to examine potential source of business ideas and to learn how to apply management tools for new ventures.

6.2 Learning Cycle and Learning Styles

Honey and Mumford (2000) puts forward the following steps in a learning cycle:

- Having an experience

- Reviewing the experience
- Concluding from the experience; and
- Planning the next step

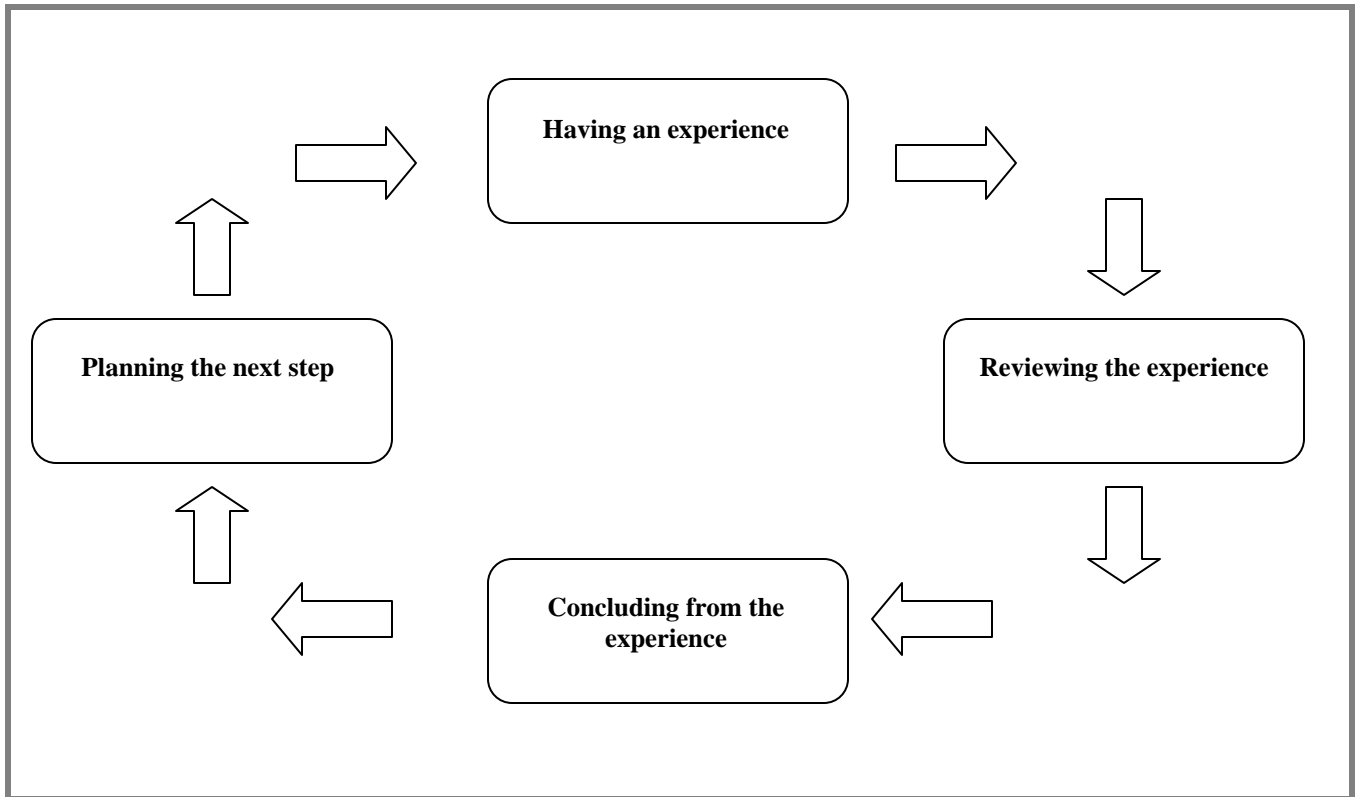


Figure 19: The Learning Cycle (Honey and Mumford, 2000)

The first stage involves rising to the challenge of new experience and getting the task done relying on the researcher's concrete experience. In the next stage the researcher is needed to stand back from what had been achieved so far and look at the different perspectives of the data and information collected. In the third stage, the theory covered is interpreted helping in understanding what had already been assimilated and the learning achieved. Finally a plan of action is formed, gained from the previous stages and converted into how the task would be completed.

Honey and Mumford (2000) suggests that if everyone followed the learning cycle by giving sufficient attention at each stage of the cycle then one could increase the chance of learning effectively.

Honey and Mumford (2000) recommend that in order to maximize ones learning one need to be aware of the learning style and also seek out opportunities to learn using that particular style.

The following figure demonstrated four such learning styles being:

- Activist
- Reflector
- Theorist
- Pragmatist

The researcher identifies himself to be an activist through the use of words such as ‘enthusiastic’, ‘challenges’ and ‘experiences’ which matches with his views highly.

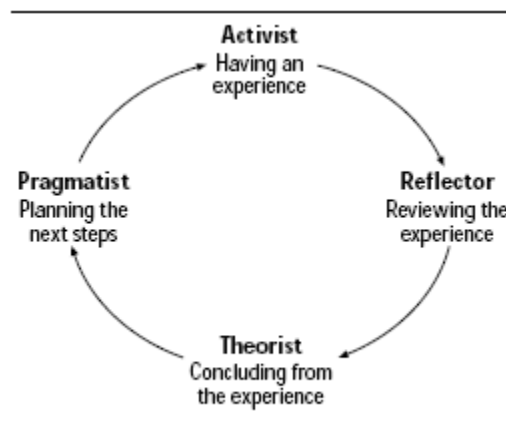


Figure 20: Experienced Learning Style (Honey and Mumford, 2000)

6.3 Reflection from the course

The course of Masters in Business Administration had two semesters with various subjects aimed at covering all the important areas of strategic business management.

Some of the instances which helped me in improving my own learning and performance are put forward.

The researcher's professional career back in India required him to browse Internet and use basic levels of Microsoft Word software. However, apart from the above there were hardly any areas where the researcher had knowledge or expertise, in terms of my Information technology skills. This sometimes proved detrimental for future career prospects.

All the assignments during the course, was required to use Microsoft suites to the best possible way to gain maximum marks in terms of presentation skills. The learning process was dealt with using Graphical User Interface and some by the help of the librarian and friends. A full time study helped the researcher in discovering certain technologies which in turn helped immensely in developing those skills. The International Management module in the first semester was focused at developing in depth knowledge of the uses of ERP Systems, MIS Systems, Information Processing and such other IT skills which were used extensively in today's businesses for gaining greater heights in terms of efficiency and profit generation.

Although the researcher worked in teams in his previous job experiences, but the profile and demographics from the places where the people came from were almost the same. This allowed easy communication without any much hassles. However, it was always a matter of concern when the researcher was sent to onsite projects to various other locations in India where the language abilities were one of the barriers among others for effective communication. Most of the assignments and class work in the MBA International program required group work. This group was formed with people from different countries and different geographical locations. Some of them were fresher and some of them experienced. This group work not only allowed the researcher to develop the communication skills but also interpersonal skills to a great extent.

When the researcher joined the MBA International course, he was working and was basically out of touch from full time studies for a while. In the first semester the researcher had great difficulty in time and work management. The result of this was clearly visible in the low scores scored by him in the first semester. The major reason for this was lack of organization and time management. Although this led to disappointing results in the first semester, it determined him to change the scenario entirely in the second semester. The researcher in order to obtain better organization and time management derived with a time management schedule. The time and work that need to be done in the time allotted was set well in advance and astonishingly enough this provided a great motivation and allowed the researcher to finish his assignments and revision much before time.

Back in India during the researcher's graduate studies, much of the course work was provided by the curriculum. There was very less scope for any further research. However, the postgraduate studies in Ireland for the MBA International program required to research and investigate every aspect of the modules covered under the curriculum. Although, there wasn't any need for this kind of research to the researcher in his previous professional experience maybe because it was highly subjective but, now there was a understanding that these skills can help me immensely for occupying positions of management which are highly challenging and unpredictable. The Research Skills and Analysis module undertaken by various lecturers was path breaking in during the course in developing Research and Investigative skills. The dissertation proposal required the researcher to look in for academic journal articles, books, newspaper articles and conference papers. Initially exploring a good topic for the dissertation was itself a great motivation for developing Research and Investigative skills.

6.4 Reflections from the Literature Review

Reviewing the accurate literature is the most important factor while doing a dissertation. It is necessary to read through a lot of information although they do not relate to the dissertation directly. These factors triggered the researcher for the first skill that was

developed during this dissertation which was the ability to investigate topics in detail and to get exactly the right type of information that supports the hypothesis. Although it was difficult initially in trying to swift through the information that was not appropriate but as the skills developed in the area the researcher was able to focus on narrower topics in areas like library searches, journals and other reports.

The area which was interesting during the dissertation phase was the organizational dissent scale of which I had a very little prior knowledge. Having reviewed the current body of literature and reports and recommendations that exists on the topic the researcher considers him to have a very good knowledge in the area. This would also enable him to stand focused in his future career endeavors. The academic writing skills have also improved exponentially as a result of various thesis and assignments submitted during the course of the study.

6.5 Reflection on Research Methodology

Research Methodology section enabled the researcher to understand the practicalities and the underlying theories while conducting a dissertation. Conducting the mini groups, designing the questionnaire and administering them would be the most prominent ones that enabled the researcher in developing the skills.

Conducting a mini group was truly challenging, as this required a totally unbiased role by the researcher and handles the groups very efficiently. Recording all the conversations accurately and deriving prominent observations from them was also essential. In relation to the nil experience of the researcher in conducting such a focus group it was truly inspiring and educative.

Designing the questionnaire required the researcher to be very focused as it had to essentially answer the research question, perform all the research objectives and derive at the pre assumed hypothesis. Using the design steps for designing the questionnaire was a very challenging process and required great amount of patience and concentration. Conducting the pilot test was very interesting as the feedbacks from the people were truly astonishing and made great sense. Considering the feedbacks and using them back into the tested questionnaire for designing into an efficient one although took a lot of time but

was very inspiring. Later on, the questionnaire administering with the people and persuading them to answer all the questions in relation to the importance of the survey helped the researcher in building confidence while talking to the people. It also enabled in developing the convincing skills which are very important in today's world.

6.6 Reflection on General Areas

Apart from the above mentioned areas the researcher was also able to develop his skills in general areas like better time and project management. The entire dissertation is like a project which requires logical and analytical skills to finish it with the required time and equal concentration on all the areas of the modules. Timely submission of this dissertation meant that all the modules were given equal and appropriate time much before the actual work is being progressed. After successful completion of this dissertation the researcher is now confident that if provided an opportunity in the future for management of projects, the foundation areas that need to be taken care of are well understood and dealt with proper time management.

6.7 Future Application of Learning and Skill Development

A human being can never stop learning. One of the most important things that the researcher has learnt is to reflect on what has been done and to use the skills acquired for self analysis and try to assess whether things could be done differently for improving the process. All the skills mentioned in this section have cumulatively contributed for to the researcher's all round personality development. But there are certain other skills like self awareness, independent research and interpersonal skills which have not been discussed in detail.

This section clearly indicates that the MBA (international) program has equipped the researcher in making a better manager. The researcher's investment in terms of time, money has truly yielded the expected results. The researcher is now confident that he can take control and manage the career much more efficiently by applying the skills and knowledge that he has gained throughout the course and achieve target driven results. All

the skills that the researcher has acquired during the MBA International program have both helped him directly and indirectly in the overall development of his stature and career profile. In addition to the same there are certain skills that he needs to further work on to excel in my career.

**CHAPTER SEVEN:
BIBLIOGRAPHY**

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CHAPTER EIGHT
APPENDICES

CHAPTER EIGHT: APPENDICES

8.1 Appendix One: Questionnaire Draft One

Dear friends,

Thank you in advance for your valuable time to answer a few questions for this survey. This research is conducted as a part fulfillment of Masters in Business Administration Program in Dublin Business School by Mr. Naveen Kallimane Sidappa.

Questionnaire

To begin with some preliminary questions for classification purposes.

(1) How old are you?

15-30 years

31-50 years

51 years and above

(2) Which country were you born?

India

China

Nigeria

Any other

Please mention.....

(3) How frequently do you yourself call to your home country these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....
- Never

(4) How frequently do you yourself make any international calls these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....
- Never

(5) How often do you use calling card for making international calls these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....

(6) How frequently do you use VOIP technology for making international calls these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....

(7) Which provider do you use most often for making international calls using VOIP technology these days?

- Skype
- Yahoo.....
- Gtalk
- Voip Voice.....
- Windows
- Any other

(8) Comparing Calling Cards and VoIP technology which one do you think you use most often these days?

- Calling Cards more frequently
- Neither of them
- VoIP technology more frequently

(9) Comparing Calling Cards and VoIP technology which one do you think is more reliable?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- VoIP technology a little more.....
- VoIP technology much more

(10) Comparing Calling Cards and VoIP technology which one do you think is better value for money?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- VoIP technology a little more.....
- VoIP technology much more

(11) Comparing Calling Cards and VoIP technology which one do you think has better voice quality?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- VoIP technology a little more.....
- VoIP technology much more

(12) Comparing Calling Cards and VoIP technology which one do you think has better value added services?

Calling Cards much more

Calling Cards a little more.....

Neither of them.....

VoIP technology a little more.....

VoIP technology much more.....

(13) Comparing Calling Cards and VoIP technology which one do you think is easily accessible?

Calling Cards much more

Calling Cards a little more.....

Neither of them.....

VoIP technology a little more.....

VoIP technology much more.....

(14) Is there any other reason that makes you feel that using VoIP technology is better than Calling cards?

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(15) On overall terms, comparing Calling Cards and VoIP technology which one do you think is flexible for operating?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them.....
- Internet calling a little more.....
- Internet calling much more.....

8.2 Appendix Two: Questionnaire Draft Two

Dear ladies and gentleman,

Thank you in advance for your valuable time to answer a few questions for this survey on **VOIP technology getting preference over international calling cards**. This research is conducted as a part fulfillment of Masters in Business Administration Program in Dublin Business School by Mr. Naveen Kallimane Sidappa.

Your participation in this study is completely voluntary. All information received in this questionnaire will be treated confidentially. If you have questions at any time about the survey or the procedures, you may contact Naveen by email at naveenks81@gmail.com .

Questionnaire

To begin with some preliminary questions for classification purposes.

(1) How old are you?

- 15-30 years
- 31-50 years
- 51 years and above

(2) Are you a

Male

Female

(3) Which country were you born?

India

China

Nigeria.....

Any other Please mention.....

(4) How frequently do you yourself call to your home country these days?

More than once a week

About once a week

Once in a fortnight.....

Once a month.....

Less often.....

Never

(5) How frequently do you yourself make any international calls these days?

More than once a week

About once a week

Once in a fortnight.....

Once a month.....

Less often.....

Never

(6) How often do you use calling card for making international calls these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....
- Never

(7) How frequently do you use internet for making international calls these days?

- More than once a week
- About once a week
- Once in a fortnight.....
- Once a month.....
- Less often.....
- Never

(8) Which provider do you use most often for making international calls through internet these days?

- Skype
- Yahoo.....
- Gtalk
- Voip Voice.....
- Windows
- Any other

(9) Comparing Calling Cards and Internet Calling/VoIP technology which one do you think you use most often these days?

Calling Cards more frequently

Neither of them

Internet Calling more frequently

(10) Comparing Calling Cards and Internet Calling which one do you think is more reliable?

Calling Cards much more

Calling Cards a little more

Neither of them

Internet calling a little more

Internet calling much more

(11) Comparing Calling Cards and Internet Calling which one do you think is better value for money?

Calling Cards much more

Calling Cards a little more

Neither of them

Internet calling a little more

Internet calling much more

(12) Comparing Calling Cards and Internet Calling which one do you think has better voice quality?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- Internet calling a little more.....
- Internet calling much more.....

(13) Comparing Calling Cards and Internet Calling which one do you think has better value added services?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- Internet calling a little more.....
- Internet calling much more.....

(14) Comparing Calling Cards and Internet Calling which one do you think is easily accessible?

- Calling Cards much more
- Calling Cards a little more.....
- Neither of them
- Internet calling a little more.....
- Internet calling much more.....

(15) Is there any other reason that makes you feel that Internet Calling is better than Calling cards?

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(16) On overall terms, comparing Calling Cards and Internet Calling taking everything into account which one do you think is flexible for operating?

Calling Cards much more

Calling Cards a little more

Neither of them

Internet calling a little more

Internet calling much more