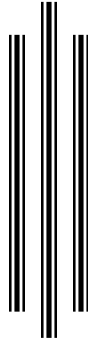**Thesis**
MIS in Medical Transcription

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Partial Fulfillment for Master of Business Studies
(Management Science)
Faculty of Management

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RECOMMENDATION

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VIVA VOICE SHEET

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And found the thesis to be the original work of the student written according to the format. We recommend the thesis to be accepted as partial fulfillment of the requirements for the degree of Master of Business Studies (MBS).

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DECLARATION

I hereby declare that this thesis entitled MIS in Medical Transcription done in the partial fulfillment of requirements for the degree of MBS. This report is conducted under strict supervision of Kishor Maharjan.

_____

Jasmin Karki

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Jasmin Karki
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Abbreviations

MIS: Management Information System.
DSS: Decision Support System.
DFD: Data Flow Diagram
MT: Medical Transcription
TAT: Turn Around Time
GIS: Geographic Information Systems
VRS: Voice Recording Software
MRP: Medical Resource Planning
AHA: American Hospital Association
MGMA: Medical Group Management Association
CPR: Cardiopulmonary Respiration
MRI: Magnetic Resonance Imaging
CVA: Cardiovascular Accident
CEO: Chief Executive Officer
HRM: Human Resource Management

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND:

1.1.1 BACKGROUND OF MIS/DSS:

Information Systems researchers and technologists have built and investigated Management Information System (MIS) for many years. This paper chronicles and explores the developments in MIS beginning with building model-oriented MIS and on its basis developing a well Decision Support System (DSS). It documents the origins of Executive Information Systems and Business Intelligence. Finally, the discussion ends with the implementation of MIS systems to our subject matter of study that is on the field of Medical Transcription.

Information collection and decision-making are major components of living, therefore, a fascinating topic for discussion and investigation. Several fields in science also occupy themselves with the nature of different aspects of information management and decision-making philosophy, psychology, sociology, economics, etc. There are many types of decision-making and all types are equally intriguing, e.g.: How do people react when they are threatened or how should one select a spouse? In this short list we already recognize the distinction between individual decision-making and institutional decision-making. In the last 50 to 60 years, institutional decision-making has attracted much attention, particularly for decisions regarding the design and control of military operations. Later, similar ideas were used and extended for decisions in trade and industry. Policy making in the public and semi-public sectors of society also began to be based more on systematic analysis. In most institutional decision-making problems, there are three main aspects of concern: The information about the current situation and, possibly, about the past. For instance, decision making concerning acid rain illustrates the above three aspects clearly, that are the information consists of huge amounts of data regarding industrial, agricultural, and automotive activities. It also consists of data about wind and sun activities and about the types of power stations used. The processes to be influenced by the gathering of information consist of the production and emission of polluting material, together with the atmospheric transformation (chemical reactions and transportation) and the deposition process. Therefore the processes are basically of a physical and economic nature.

The information gathering (MIS) and decision-making (DSS) process consists of several interacting sub-processes at the local, national, and international levels. In the history of MIS and DSS i.e. decision analysis; one sees that many tools and methods have been developed to help make decisions. We also see that most of these methods and tools concentrate on one of the three main aspects of institutional information gathering or decision-making problems. For instance, in most college textbooks dealing with operations research, we find several generic models describing the relation of the basic processes with the possible decisions. Each model is usually presented together with at least one technique for constructing a most favorable decision. Linear programming models and the simplex method provide the most classical example. The first aspect, information, has been the source of inspiration for particular types of information systems that consist of one or more databases and special methods for arranging the information. Typical examples are geographic information systems (GIS) and management information systems (MIS), each with their own way of structuring and storing the information and with their own way of dealing with the information. Finally, the decision-making process has inspired several approaches to the structuring of the process of reaching decisions and ways of comparing different alternatives. The process of reaching decisions may be complex because the decisions themselves are complex and consist of many sub-decisions, which should be taken in the right order (decision trees can be an appropriate tool to model this type of situation). The process of reaching decisions may also be complex because of the number of persons, departments and other groups involved, each with their own interests, constraints, and ambitions. In such cases, group decision-making methods or even negotiation support can be helpful. One of the most striking features of the existing decision support methodology is that most tools and methods concentrate entirely on one of the three aspects and often only on a part of that aspect. This is understandable, because often it is difficult to integrate the other aspects. For instance, GISs are able to handle a wealth of information in a very user-friendly and enlightening way. However, it is difficult to translate this information for the basic processes to models in order to use this information for deriving consequences of possible decisions. A direct linkage is possible only if the process models are closely related to the information structure, as in guiding car-systems, where an optimal route is indicated on a map. This decision selection can easily be adapted if information about traffic jams or blocked bridges becomes available.

For more strategic decisions, however, it is unlikely that the process models relate so closely to the information structure. Even if something can be done, the approach is probably specific to a particular problem and therefore not generally applicable. One reason for this situation is that there are accepted standards for keeping information in data bases, but there are no accepted standards for model building. Quite often, methods are implemented as if the designers are not even aware of the other aspects. As a result, implementations have been developed that are practically infeasible.

For example, approaches to modeling and optimization of the basic processes have been commonly advertised that do not fit with the way information becomes available, or, more seriously, with the way the decisions are chosen. Many institutional decision processes relate to well-defined processes of a technical, physical, or economic nature. This is particularly true for environmental problems, like the acid rain problem. In such cases there is usually a lot of knowledge about the basic processes and about the way they are influenced by sources of information gathered. However, not all institutional decision processes possess this property. Consider, for instance, the structuring of the funding organization for research in Poland. In such a case there is certainly a basic process to be influenced by the choices to be made, namely, the research process in Poland including quality, quantity, and distribution of research topics. However, there is not much accepted hard knowledge about the basic process and the core of the decision problem consists of a careful structuring of the influences of relevant institutions and of the decision process. On the other hand, if there is a well-defined basic process and if the core problem essentially consists of deciding how to influence that basic process, then it is obvious that the starting point for any reasonable approach should be the modeling of the basic process, including the changes caused by possible decisions. As stated above, environmental policy problems usually belong to this class. The aim of this study is to present a decision support methodology for Medical Transcription Workers for the efficient and well formatted working environment. For that, a well Management Information System (MIS) needs to be developed. There are many problems faced by the Medical Transcriptionists due to the poor coordination of Information or say because of lack of proper information saving. Not only in this field, this is a problem all over the world, which is growing each day, as by every second millions and millions of new data are being produced and each and every organization needs to filter these new data and select and use the appropriate data.

Failure to do so makes the organization in great loss. Talking on aspect of Nepal, we generally see no such coordination in the government offices. Private sectors are working a bit better regarding information management but that is also not sufficient for the growing world. MIS is concentrated around the basic processes, taking into account the information aspect and, particularly, the process of reaching decisions. The methodology presented in this study is largely inspired by the experience at IIASA, the International Institute for Applied Systems Analysis. IIASA provided several environmental decision problems that helped develop our concepts. IIASA also provided the expertise about the basic processes together with the knowledge about the "decision environment." Many of the tools for implementing our concepts have been developed by several Polish groups of colleagues in a long-lasting cooperation with IIASA.

Methodology: In the first part of this thesis, we consider the circumstances under which information are gathered and filtered, these methods should fulfill their tasks and also what these tasks are. From these considerations we derive rules for constructing decision support systems. We concentrate on model-based decision support, that is, the relation between basic processes and possible decisions. However, the circumstances under which such decision support methods should work are highly co-determined by the available information and by the decision-making process. Therefore, these aspects strongly determine the rules. Thus, on the basis of above, we can say that MIS system is needed for a properly managing the organization. MIS supports for the gathering, saving, and using the information from the past experiences or model-driven etc. for a proper decision making no matter big or small.

Management Information Systems and Decision Support Systems evolved early in the era of distributed computing. The history of such systems begins in about 1965 and it is important to start formalizing a record of the ideas, people, systems and technologies involved in this important area of applied information technology. Today, it is still possible to reconstruct the history of Management Information System and Decision Support Systems from first-hand accounts and unpublished materials as well as published articles. History is both a guide to future activity in this field and a record of the ideas and actions of those who have helped advance our thinking and practice. In a technology field as diverse as MIS and DSS, history is not neat and linear. Different people have perceived the field from various vantage points and so they report different accounts of what happened and what was important. Some of this can be sorted out, but more data gathering is necessary.

The next few sections move from about 1965 to the mid-1990s. The DSS threads related to model-oriented MIS and DSS, expert systems, multidimensional analysis, query and reporting tools, Business Intelligence, Group MIS/DSS, and Executive Information Systems are traced and interwoven as they appear to converge and diverge over the years.

The Early Years

Prior to 1965, it was very expensive to build large-scale information systems. At about this time, the development of the IBM System 360 and other more powerful mainframe systems made it more practical and cost-effective to develop Management Information Systems (MIS) in large companies (cf., Davis, 1974). MIS focused on providing managers with structured, periodic reports. Much of the information was from accounting and transaction systems.

In the late 1960s, a new type of information system became practical – model-oriented MIS/DSS or management decision systems. Two DSS pioneers, Peter Keen and Charles Stabell, claim the concept of decision support evolved from "the theoretical studies of organizational decision-making done at the Carnegie Institute of Technology during the late 1950s and early '60s and the technical work on interactive computer systems, mainly carried out at the Massachusetts Institute of Technology in the 1960s. (Keen and Scott Morton, 1978 preface)." According to Sprague and Watson (1979), around 1970 business journals started to publish articles on management decision systems, strategic planning systems and decision support systems. For example, Scott Morton and colleagues published a number of decision support articles in 1968. In 1969, Ferguson and Jones discussed a computer aided decision system in the journal *Management Science*. In 1971, Michael S. Scott Morton's ground breaking book *Management Decision Systems: Computer-Based Support for Decision Making* was published. In 1966-67 Scott Morton had studied how computers and analytical models could help managers make a key decision. He conducted an experiment in which managers actually used a Management Information System (MIS) Management Decision System (MDS). Marketing and production managers used an MDS to coordinate production planning for laundry equipment. MDS ran on an IDI 21 inch CRT with a light pen connected using a 2400 bps modem to a pair of Univac 494 systems. Scott Morton's (1967) dissertation research was a pioneering implementation, definition and research test of a model-driven decision support system.

In 1974, Gordon Davis, a Professor at the University of Minnesota, published his influential text on Management Information Systems. He defined a Management Information System as "an integrated, man/machine system for providing information to support the operations, management, and decision-making functions in an organization." Davis's titled "Information System Support for Decision Making" and "Information System Support for Planning and Control" created the setting for the development of a broad foundation for MIS/DSS research and practice.

By 1975, J. D. C. Little was expanding the frontiers of computer-supported modeling. Little's MIS/DSS called Brandaid was designed to support product, promotion, pricing and advertising decisions. Also, Little (1970) in an earlier article identified criteria for designing models and systems to support management decision-making. His four criteria included: robustness, ease of control, simplicity, and completeness of relevant detail. All four criteria remain relevant in evaluating modern Decision Support Systems.

Klein and Methlie (1995) "A study of the origin of MIS/DSS has still to be written. It seems that the first MIS/DSS papers were published by PhD students or professors in business schools, who had access to the first time-sharing computer system: Project MAC at the Sloan School, the Dartmouth Time Sharing Systems at the Tuck School. In France, HEC was the first French business school to have a time-sharing system (installed in 1967), and the first MIS/DSS papers were published by professors of the School in 1970. The term SIAD ('Systèmes Interactif d'Aide à la Décision' the French term DSS) and the concept of DSS were developed independently in France, in several articles by professors of the HEC working on the SCARABEE project which started in 1969 and ended in 1974.

Developing Theory

In the late 1970s, both practice and theory issues related to MIS/DSS were discussed at academic conferences including the American Institute for Decision Sciences meetings and the ACM SIGBDP Conference on Decision Support Systems in San Jose, CA in January 1977. The first International Conference on Decision Support Systems was held in Atlanta, Georgia in 1981. Academic conferences provided forums for idea sharing, theory discussions and information exchange. MIT researchers including Peter Keen and Michael Scott Morton were especially influential. Keen and Scott Morton's DSS textbook (1978) provided a broad behavioral orientation to Decision Support System analysis, design, implementation, evaluation and development.

In 1980, Steven Alter published his MIT doctoral dissertation results in an influential book titled *Decision Support Systems: Current Practice and Continuing Challenge.* Alter's research and papers (1975; 1977) expanded the framework for our thinking about management MIS/DSS. Also, his case studies provided a firm descriptive foundation of Decision Support System examples. A number of other MIT dissertations completed in the mid- and late 1970s also dealt with issues related to using models for decision support.

1.1.2 INTRODUCTION TO ORGANIZATION AND THESIS TOPICS:

Miracle Technocraft is a US and India based Medical Transcription (MT) company situated in Biratnagar. So first of all before having an introduction of the company we need to have a general idea about Medical Transcription, how is it worked from Asian Countries like Nepal, what is the role of communication in Medical Transcription, what type of management information systems are generally used in the companies etc. So, first of all we need to know what medical transcription is before understanding any of the medical transcription company.

Medical Transcription (MT) means converting into written form, the dictation by the physicians and other healthcare professionals regarding patient assessment, workup, therapeutic procedures, clinical course, diagnosis, prognosis etc. in order to document patient care and facilitate healthcare services. A Medical Transcriptionist is a medical Language specialist who, using a computer and accessories like headphones and a footpedal, transcribes the recorded audio into electronic data. This data is further scrutinized for grammar and clarity by a proofreader. Let's start from the beginning. It flows from the need for documentation of medical records and the inability of hard-pressed doctors to sit and write those reports themselves. In Western countries, particularly the US, maintaining extensive medical records is mandatory-and vital-for each patient treated. The fact that medical insurance claims and lawsuits are decided on the documented case history makes this all the more necessary.

Further, doctors are frequently invited to deliver lectures at medical colleges. This implies preparing extensive notes on case studies to be handed out to participating students. So, what does a harried medico do? Simple: he or she just speaks into a tape-recorder, these days, into voice recording PCs. That's faster, and can be done even while walking from one hospital ward to the next. These tapes, or audio files, have to be converted into written statements, which is what medical transcriptions are all about.

With the rapid change of outlook in Indian healthcare and privatization of the insurance sector, documentation of all patient records will become mandatory in the future. Thus medical transcription will hold a vital link in altering the Indian job scenario. What the doctors do is to hand over their audio records to a company that gives them transcripts- in clean, perfect English- for filing and reference.

Naturally, these companies need people who know the language to do the actual transcriptions, and won't charge them the earth. India, given the high English literacy levels, and the weak rupee, provides the ideal location for conducting these transcriptions. The exhaustive oral reports are stored in a compressed format and transferred to India or any other country via data communication lines. The recordings are decompressed at the destination. And your job is to listen to these voice recordings, using special playback equipment that allows minute controls over voice play, and key in the commentary using word- processing software. The report is then proofread for errors, and sent back to the hospital of origin, or to the individual doctor, using the same communication links. The best thing is that you need no formal qualifications or even experience. Normally, you only need to prove that you can transcribe complex spoken sentences accurately. What do you need to bone up, though, are names and spellings of medical terms and medicines, which can be quite a mouthful. Picking up word-processing skills, if you aren't at home with a computer keyboard already, is a breeze. There's nothing to it. Add to that patience and concentration, and you're sure to emerge a winner.

Healthcare documentation existed at early age in ancient cave writings. The medium of writing changed from cave writings to metal plates, from metal plates to clay tablets, from clay tablets to temple walls, then to paper, and now to electronic files.

Until the 20th century, physicians had to do jobs of both providers of medical care and scribes. Because of the need for standardization of medical data , medical stenographers overtook the job of scribes. Those medical stenographers used shorthand to take dictations. Therefore, the stenographer had to work in the office of physician to take notes. Then, with the advent of technology, physicians and scribe did not need to work face-to-face and the career of medical transcription was born.

A person sitting in India can transcribe the file dictated by US Physicians in minutes. The voice files are sent over via Internet. Now, in the 21st century, medical transcriptionists are using speech recognition technology to transcribe the files, but the accuracy provided by this technology is not yet up to the mark. In the coming future, speech recognition will be used everywhere but still the need of medical transcriptionists will be there because such softwares cannot always give you 100% accuracy and one cannot rely completely upon such softwares in the field of medical transcription.

The demand for Medical Transcriptionists is very great. There is currently a shortage of qualified Medical Transcriptionists - and demographic trends suggest that the outlook will continue to be favorable for some time to come. Good Medical Transcriptionists typically have no problem obtaining and maintaining employment. Consider the following benefits of becoming a professional Medical Transcriptionist:

- In-demand Profession.
- Excellent Income Potential.
- Flexible Hours.
- Growth Industry.
- Exceptional Home Based Career Opportunities.
- Potential to get your own Clients and Build a Lucrative Business.

Basic Qualifications

Medical Transcription is a highly skilled profession. It requires an attention to detail and an ability to recognize and understand technical terminology. Good typing skills are a must. Typically an accurate typing speed of 50-70 words per minute is a prerequisite for most positions. Obviously the faster you type the more money you will be able to make as most pay is on a production basis.

Spelling and grammar skills are also vitally important. On-line dictionaries and spell checks are always available to assist you, but they should not be relied upon completely. You should feel relatively well grounded in spelling and grammar before you decide to enter this field. Most of the skill that you will acquire as a Transcriptionist will come over time. Experience is the great teacher. Prior to gaining hands on experience, it is usually wise to go through a formal course to gain a foundation of knowledge and practical experience.

Getting started with medical Transcription, it is a very specialized field and requires extensive training. Once trained, however, the demand is very great. One of the most difficult parts of breaking into this lucrative industry is receiving the requisite training. Your income potential will typically be determined by your skill level. And skill level will be a function of training and experience. Unfortunately, you will find that most employers will be reluctant to hire inexperienced individuals. The learning curve can be quite steep and it will be difficult to find an employer that is willing to invest the time and money necessary to train a person.

There are a number of opportunities to receive the in-depth training necessary to become a proficient Medical Transcriptionist. Many Technical Schools have full-time programs designed to provide a basic level of proficiency. The drawbacks with these programs are that they tend to be expensive and they generally require a full-time commitment - which involves quitting a job and foregoing income during the course of study.

An alternative to these full-time classroom-training programs is the Home Study Course. Home study certainly requires a more disciplined attitude, but the cost / benefits as well as the ability to work at your own pace and in your own home are appealing. With a Home Study Course there is no need to quit your present job - until you have achieved a basic skill level and are ready to begin your new career.

Indeed, it is often possible to begin your first Medical Transcription job on a part time basis in the evenings following completion of the home study course while maintaining your present employment. This "earn while you learn" approach is a good way to develop additional proficiency while still retaining the safety net of a full time job.

1.2. FOCUS OF THE STUDY:

Medical Transcription and its history in depth, the evolution of the systems dates back to the year 1960 as per Medical Transcription history. The systems in the yesteryears were designed to assist the manufacturing process. The first transcription that was developed in this process happens to be MRP (medical resource Planning) in the year 1975.This was followed by another advanced version namely MRP2 which is the acronym for Manufacturing Resource planning. None of them yielded the benefit of Medical Transcription.   Drawback of MRP Systems is these softwares were helpful in manufacturing process. Their benefits did not extend to other Sectors. Medical Transcription was developed as multifaceted transcription that gradually stretched its limits into other areas like human resource, finance, marketing and so on. Moreover Medical Transcription offered operational convenience and large reduction in costs coupled with other benefits when compared with earlier soft wares.   MRP solutions attained more fame.   In fact it became a hallmark of the manufacturing setups.   The MRP solutions did not render the expected results due to exorbitant costs and practical work problems. In addition it also called for a huge pool of technical expertise in terms of manpower and machines. Advent of Medical Transcription can be taken as, Medical Transcription came into being with effect from 1990 though the fact remained that many people are of the opinion that Medical Transcription existed from the year 1960 in the form of MRP1 and MRP 2. IN Fact MRP II was more or less and Medical Transcription except for its inability to coordinate departments other than marketing. The whole period from the year 1960 is denoted as the age of Medical Transcription. The benefit of Medical Transcription was slowly felt from this stage onwards.   Sap Medical Transcription history contains detailed study of SAP's association with Medical Transcription. Global Medical Transcription leader SAP technologies were established in the year 1972 by five engineers. This was followed by invention of Larson transcription, which was a built in model.   It was meant to replace the market practice of designing soft wares as per individual medical needs. Some more companies namely Oracle and Baan Corporation were included in the fray in 1970 and 1980's. This was followed by the invention of People soft and their transcription on Human Resource Management in the years 1987 and 1988 respectively. Baan Corporation specialized in rendering financial and management consultation services. Oracle was the first ever company ever to offer commercial and relational database management systems.

Market Information on Companies; Sap holds the privilege of being the world's largest medical company. JD Edwards and Oracle enjoy a whooping customer base of 4700(in 100 countries) and 41000 customers around the globe. People soft controls more than a half of the human resource market and has offices in many nations. Web friendly, while Medical Transcription is a technological innovation in itself its efficiency is multiplied by several times with the help of latest inventions. Nowadays Medical Transcription is tuned to make use of the Internet. This is to make sure that the buyers anywhere can have access to the database of the seller by a mouse click and that too by sitting anywhere in the world. This has become the trend in the 21st century. The latest Medical Transcription tool which is becoming the order of the day is Medical Transcription II which is discussed in detail as separate links in the website. SAP Medical Transcription History and Medical Transcription history are vital in understanding the origin of the subject matter.

Advantages disadvantages Medical Transcription:
The advantages and disadvantages of Medical Transcription is an interesting study. The foremost advantage of the Medical Transcription system is bringing down the costs and saving the valuable time, which would have otherwise been wasted in procedural maneuvers and unwanted delays. Different transcriptions maintained in the departments were proving to be a great hurdle. Since Medical Transcription is a uniform platform it ensures that there in no discrepancy in the information that is processed.

The advantage and disadvantage of Medical Transcription is best understood by studying them under different categories. Hence the next paragraph presents information on corporate as a whole because the advantage of Medical Transcription systems in a company is different when compared industry wise.

Advantages in a corporate entity are like the accounts department personnel can act independently. They don't have to be behind the technical persons every time to record the financial transactions. It ensures quicker processing of information and reduces the burden of paperwork. It serves the customers efficiently by way of prompt response and followup, for disposing queries immediately and facilitating the payments from customers with ease and well ahead of the stipulated deadline. It helps in having a say over your competitor and adapting to the whims and fancies of the market and medical fluctuations. The swift movement of goods to rural areas and in lesser-known places has now become a reality with the use of Medical Transcription.

Disadvantage goes like in spite of rendering marvelous services Medical Transcription is not free from its own limitations. Medical Transcription calls for a voluminous and exorbitant investment of time and money. The amount of cash required would even be looming on the management given the fact that such an outlay is not a guarantee to the said benefits but subject to proper implementation, training and use. In the ever-expanding era of information theft Medical Transcription is no exception. It is alarming to note the time taken to implement the system in the organization. These means large amounts of workers have to shun their regular labor and undertake training. This not only disturbs the regular functioning of the organization but also runs the organization in the huge risk of losing potential medical in that particular period. There are great benefits rendered by the system. On the other hand when one thinks of this information reach in the hands of undeserving persons who could do more than misuse, it is evident that there is no way of ensuring secrecy of information and larger chances of risk will be generated as long as they are in the public domain.

Finally after discussing the advantages and disadvantages of Medical Transcription, it is recommended in an organization not only because the advantages outnumber the disadvantages but also by keeping in mind the ways to overcome the disadvantages. An organization has to correctly weigh the advantages and disadvantages of Medical Transcription before going for them.

Exploring Medical Transcription fundamentals, we need to understand the problems faced by conglomerate before getting to know Medical Transcription Fundamentals. Medical houses always find great difficulty in quickly making out the required information because of the voluminous data, improper segregation, departmental arrangements and unprecedented delays. Organizations were constantly searching for some means or mode to overcome this debacle. The inconvenience was not only pinching on monetary profits but also antagonized customers who were made to wait for a long time for a small piece of data. Medical Resource Planning or Medical Transcription as it is shortly referred has come to overcome this menace. It is a boon to organizations that were in need of this kind of facility forever. This idea will help to get a feel of Medical Transcription basics. What Medical Transcription does can be defined in short as Medical Transcription helps to integrate the data in an organization under one common platform. The purpose behind is not only to ensure transparency but also to facilitate tracking down information regarding the status of a particular order or its dispatch and so on.

If a company success in this, it will definitely achieve Medical Transcription benefit. An organization has to do meticulous planning, devise strategies before going ahead with Medical Transcription. Medical Transcription can cut down costs; improve the quality of working time and by and large. In short it helps in making the maximum use of technological advancements. For instance the executive in the Sales Department will be able to respond to a customer query immediately by making out the status of the product's delivery, which would not have otherwise been possible but for the intervention of Medical Transcription in the organization. Medical Transcription has enabled organizations to do away with laborious and time-consuming process. A strong understanding of Medical Transcription basics will help to know Medical Transcription benefits.

Planning an Medical Transcription Setup: Medical Transcription is often well said that done. No company can progress further without properly grasping the Medical Transcription Fundamentals. The Company has to properly understand Medical Transcription fundamentals in order to derive the maximum outcome. These are crucial factors deserving attention when it comes to Medical Transcription. The services of Medical Transcription cannot happen all on a sudden in an organization. It is a long drawn process. The spade works that needs to be done may require a couple of months and even years depending on issues like volume of the organization. Meticulous planning will definitely help to achieve Medical Transcription benefit. Companies have to be vigilant enough more so when it comes to the question of choosing the appropriate platforms and medical transcription softwares. This issue becomes crucial when it comes to the point of corporate amalgamation. The transcriptions used by the different companies have to be brought under one common platform.

When a company goes in for Medical Transcription it must ensure that the information is updated, as the facts and figures in the past will have no relevance to the current system. The progression must be constant to make sure that Medical Transcription interventions account the most relevant facts. An understanding of Medical Transcription basic is necessary to ensure this. Induction and orientation, management students who undergo H.R. (Human Resources) training are usually put up in an atmosphere that is an exact replica of the corporate world. The idea is to give them a feel of the actual work pressure. Similarly, when it comes to the question of Medical Transcription the organization should initially have a trial round (after research and feasibility study) to check its worthiness and validity.

1.3   STATEMENT OF THE PROBLEMS:

Building a business used to be all about ownership. In order to guarantee access to the skills, knowledge and assets necessary to deliver a given product or service, you had own or employ them. And the more you owned the more control you had over your business. Today, it's a different story. Volatile markets, increasingly specialized skills and ever-changing technologies increasingly call the ownership model into question. So businesses started contracting-out recurring internal activities to external suppliers and outsourcing was born. All the manpower, equipment and facilities to properly perform the outsourced activity were provided by someone else, so companies were free to invest more in the 'vital organs' of their business. And because external companies were doing work previous done by employees, responsibilities were in black and white - rather than clouded by office politics.   But while outsourcing's rise has been based on efficiency, **a** closer look at outsourcing reveals that its real potential goes much further. For example, turning fixed costs into variable ones may be good for the balance sheet: but turning bosses into clients is great for quality. Allowing the company to react faster to opportunities and challenges is one thing. Allowing the company to pursue entirely new challenges or markets is another.

There are some disadvantages to outsourcing as well. One of these is that outsourcing often eliminates direct communication between a company and its clients. This prevents a company from building solid relationships with their customers, and often leads to dissatisfaction on one or both sides. There is also the danger of not being able to control some aspects of the company, as outsourcing may lead to delayed communications and project implementation. Any sensitive information is more vulnerable, and a company may become very dependent upon its outsource providers, which could lead to problems should the outsource provider back out on their contract suddenly. First of all let us go over the conditions of medical transcription industries in Nepal. There are over 20 medical transcription industries in Nepal as discussed earlier. They provide jobs to over 500+ Nepalese citizens and this has been going up and up every year. Hire or Buy Medical Transcription, there are two alternatives in choosing medical transcription software for the company. The first one is purchasing the transcription while the second one is obtaining one on hiring basis. There aren't any differences in terms of costs or benefits irrespective of the option that the company goes for. It all lies in how best the company makes use of Medical Transcription.

Now let us move to the potential reasons behind the lack of medical transcription industry to compete with its Indian counterparts. The main problem encountered is choosing the Medical Transcription vendor. The quality of the services offered by the vendor is equally detrimental in choosing medical transcription software. Buyers generally tend to purchase from sellers who have got adequate experience in Medical Transcription Products and services. This is the usual practice for any commodity. This has to be strongly followed in the case of Medical Transcription, as there are several dimensions involved with regards to decision-making. Essential Elements of Medical Transcription System should be also taken care of. If a company is able to obtain all the related products of Medical Transcription from one seller/vendor then it can be termed as a profitable Venture. The company will be able to avail their services in all matters relating to Medical Transcription solutions. This is highly recommended and regarded as a wonderful combination. When they choose to buy Medical Transcription application of a particular module it must be ensured that they enable connectivity and facilitate data transfer, which should easily be made available to the stakeholders. The advantage in buying a modular application is that the company can choose to select them on the basis of the function for which it is purchased. These are the essential element of Medical Transcription systems.

Time constraints in respect to the organizations function. The Medical Transcription system should be purchased based on the long-term needs of the organization. In that sense, the firm should visualize its prospects, position and requirements in the long term also. Therefore it has to be made sure that Medical Transcription is not restricted to meeting the current needs. This will also help in implementation of Medical Transcription. Suppose if a company is engaged in one particular domain of banking it also needs to understand that it may have to cater to the entire banking sector if the need arises. Hence, it must purchase Medical Transcription that can serve related banking applications or if not be Capable of modification for the said purpose in the future. This will also stand out to be true in the case of organizations that aim at diversifying the medical. A choice is to be made from Medical Transcription implementation models. This will also help in implementation of Medical Transcription. Employees should able to express their opinion on Medical Transcription. The core members in the decision making body (for Medical Transcription) should hear and heed to the views of all the employees in the company as long as they are valid. This will make sure that everyone is given an opportunity of being heard so that they don't lament that they were not allowed to express their opinions on Medical Transcription.

1.4   OBJECTIVE OF THE STUDY:

Based on the above statement of problems and research, present study attempts to identify the trend of market of outsourcing, identify the causes and factors of inefficiency, and to suggest corrective measures to address the problem of inefficiency.

To identify the trend of market Outsourcing:

The primary objective of the study is to identify the trend of market outsourcing. First of all, let us focus on understanding the outsourcing. Outsourcing also allows companies to focus on other business issues while having the details taken care of by outside experts. This means that a large amount of resources and attention that might fall on the shoulders of management professionals can be used for more important, broader issues within the company. The outsourcing business in Nepal started quite late in comparison with neighbor counterparts India. The rate of increment of the outsourcing market is great. There has been a rapid growth in the market of outsourcing recently in Nepal. For some years the growth was almost double per year. There has been some drawbacks recently in the increment due to some internal and external factors like political, economical etc, but overall growth rate of the outsourcing market in Nepal seems to be in a increasing trend. Medical transcription being a part of Outsourcing business too seems to follow the same trend as of Outsourcing.

To identify causes and factors of inefficiency:

Internet Failure is one of the important causes of inefficiency. In early days of Internet were used by military only. After using by civilians, the early days were not so good and still in developing phase. Also, in the hardware there exists a large gap between the developed and underdeveloped country regarding which the underdeveloped country has to adjust regarding the hardware usage as most of the new hardware appears lately in the underdeveloped country market. The maintenance also provides a bulk-inefficiency factor. New viruses are developed or spreading every day for which the current anti-virus needs to be updated or in some cases the current existing anti-virus does not work at all. This proves to be the ultimate drawback in this field. Regular maintenance and care of the hardware provides some relief but there is always a threat of new virus.

As per the context of Nepal, Nepal is seeking political stability since years of Maoists revolution. Recently, after Maoists take over the government from election, the new challenges are arising. These are mostly in the form of instability of the nation and also electricity problem. The electricity problem is one of the major factor of inefficiency in Nepal. Nepal has to compete with the countries like India and Philippines who are far better in terms of political stability and growth. Nepal faces more of problem due to country's instability and also recently arose problems of electricity. The political situation in Nepal is getting stable, even though there are lots of threats, there are some opportunities too.

The cause of inefficiency may be:
- Improper usage of hardware.
- Improper management of a company.
- Improper training to the staffs.
- Improper financial status of company.
- National problems (electricity cut off, Nepal Band, etc)
- Improper government rules and laws.

To suggest corrective measures to address the problem of inefficiency:

Corrective measures that a company should take:
The Company should be focused on the qualitative issues. But a company can not keep its eye shut on the country's condition as it ultimately effect the company.   The company can work on delivering the highest quality work. Regular monitoring and regular guidance of the office staffs or Medical Transcriptionists can make this happen. A company needs to focus on quality of work first. If a company delivers lower quality of work to the client, then the client can discontinue giving regular work to that vendor and searches for a vendor who could give higher quality files. This goes similarly for the medical transcription company. A medical transcription company is always in search of better work provider. A better work provider means a regular work giver and a higher rate payer. Corrective measures that a company should take are generally internal measure that is related with quality of work, staffs, hardware maintenance, etc.

Corrective measures that government should take:

- The government should work on immediate electricity cut off. Recently, the electricity cut off has been maximum of the decade, approximately 16 hours per day. This type of situation directly affects the medical transcription industry.
- The government should work on providing financial security. It may be legal security as well. Since the outsourcing business involves laws of two or more country, there may be some laws that does not match each other resulting into dismissal of the case. Proper financial security should be given by the government to assure proper business on Outsourcing.
- The government should give proper support to the newly established IT industries. If the IT industry gets successful, money is imported to the nation from other, which helps in growth of a country's economy.
- Proper laws are to be made by the government so that there will be no loss to the IT industries like financial loss, manpower loss, delay in payment, etc. The government should make appropriate policy for this as well.

1.5   RATIONALE OF THE STUDY:

The trend of market outsourcing has been increasing since the starting time. It has been rising up tremendously in Asia. Africa too is not far from it. The trend is uprising in Africa as well. Big Western companies are all into outsourcing very specific aspects of their activities abroad and Africa might become a new area of emerging interest. The business logic of the deals is obvious. Western companies that have trouble keeping their heads above water due to high overhead costs are making savings and improving their profitability buying into a trend that is by now well established and virtually as low risk as any business outsourcing practice elsewhere.   The trend has taken off some 15 years ago and gained momentum on the spur of the cost savings success stories and in many cases reputable quality of the work delivered by these fairy tale like 'night workers' in obscure overseas locations. For example Accenture, the US group that has been a key player since the onset of the BPO take off, is by now the largest outsourcing expert in India and is under fire from all sides. The company has built up so much expertise that it is charging astortionate fees for its work, which critics say is threatening to defeat the logic to outsource. There are concerns about the firm's ability to compete on price and some outsiders say that the company is not growing its BPO activities any more. Accenture contests this, saying that the firm is instead expanding business, rather than cannibalizing revenue by moving to other business areas. It would be logical from a market technical point of view. Demand is by far not anywhere near its saturation point. Africa might become a hotly contested next destination. Africa is only just emerging on the BPO scene, yet Thuo has good confidence that it can compete with the Asian countries. The international BPO scene has evolved into a cut throat business however that is in which corporations are not at all shy from canceling deals they are not happy with and there is a growing differentiation in the market and the labor pools. The more professional certain segments get, the higher the price of the deal. Indian towns and areas are setting the trend here and still have the largest share of the world market. The game is dominated by quality assurances, trust building and offering more highly diversified human expertise. The BPO world was turned upside down in 2004 when Getronics decided to pull out of a contract it had in India worth millions of dollars. A second wave of BPO activity is emerging and bears all the hallmarks of quality control rather than competing on price only. India is somewhat the victim of its own success.

Now that certain companies have become highly successful they have grown beyond what's healthy and exhausted the 'resource pools' of human talent. It will be interesting to see where the global trend goes in about five years. People are beginning to wonder whether Indian services should diversify and split up in more recognizable segments. There's talk of the value chain and the need for Indian companies to offer specialist services to move up on the ladder.

Medical Process Reengineering or MPR is one of the fundamental steps undertaken prior to Medical Transcription implementation.   Medical process reengineering analyses and suggests the structural changes. This is regarded to be very important because it helps in knowing how the organization should be customized in order to become Medical Transcription-friendly. MPR is inevitable not only for Medical Transcription but as far as any medical process is concerned. MPR becomes the first step in the process of Medical Transcription implementation.   Medical process reengineering is taken to conduct feasibility study and other restructuring exercises. Nothing can be done to prevent change. The best way to manage change is to adopt it. Time and again it has been proved that imposing change of any magnitude all on a sudden is not the proper way. There needs to be a proper method to bring about it.   Medical process reengineering is one scientific study that helps organizations largely to analyze the viability of not only Medical Transcription, but any other dynamic change. MPR Medical Transcription is not watertight compartment.

Implementing medical transcription software to Suit medical needs:
When the company demands a particular Medical Transcriptionist they have to make compromises on the budget because reworking modules and supplying medical transcription software would definitely be a costly affair. This is because of the complications involved in doing the same. Apart from finance this also calls for persons with greater working knowledge to design the systems. This means the process is not going to be unambiguous. The process will also require frequent updating. This is going to be difficult taking into account the several changes that has already been inflicted on the system to make it medical friendly.

Restructuring the medical process to be Medical Transcription Friendly:
This method also requires lots of monetary outlay because of the major change in medical process. The customers will not be receptive to changes in medical process. It is possible to train the employees but whereas in the case of customers they cannot be expected to stay in tune in tune with the whims and fancies of the organization. It is possible to train the employees. The likelihood of them to adapting to the change at the immediate outset is very much limited. This will cast a spell on the revenue of the medical and unless Medical Transcription does not make it good in the later days the voluminous investment cannot be justified.

Sound knowledge about Medical Transcription System:
The features, be old or new or modern or traditional, will not be of any use unless the users are aware of the Medical Transcription Systems features and modalities. This knowledge has to be imparted to the end users apart from IT personnel. They should have a clear knowledge about the entire system in fingertips. If questioned or demanded they must be capable of bringing that particular function into effect. The services of an expert Medical Transcription consultant will come in handy for an organization to supply this information to the user. The consultant will make a decision on the basis of the organizational needs and system configuration. He will be a part of the organization for quiet some time. This will also help him in know the organization and people better. He will therefore be able to work easily. Customization is an important part in implementation of Medical Transcription. Medical Transcription Company can decide the proper Medical Transcription solution for the organization.

The extent of customization does not solely decide the success of Medical Transcription. If it results in user satisfaction another important criterion then customization and Medical Transcription success go hand in hand. The best choice has to be made from Medical Transcription solutions.

1.6   LIMITATIONS OF STUDY:

There are various limitations of the study based on different aspect. The main limitation comes in the form of price. The various limitations are discussed categorically as follows:

Price Factors:
For discussing on the topic of price factor as a limitation factor of the study, we need to first discuss on the factors influencing Medical Transcription price. Medical Transcription cost is an important issue that companies look forward while deciding on Medical Transcription.   Medical Transcription calls for a voluminous investment. By and large this step is not a cakewalk for any company.   It is not possible to give a comprehensive price structure for all companies implementing Medical Transcription. Medical Transcription pricing varies even among companies based on requirement, facilities, size and nature of the medical and so on. Above all, it is dependent on that particular factor which the company banks on or in other words the root cause for the company to decide on Medical Transcription. Medical Transcription implementation cost is not the only cost to the company. In detail discussion of the price factor, the other thing that comes into light is the cost of medical transcription softwares. This is on e of the most important aspect, which sets up price limitations on the Medical Transcription. Factors, which influence the cost of medical transcription software products, are:

Execution of Medical Transcription
This term will include all the exercises from medical process engineering to gap analysis to actual restructuring and training.   Above all this, the process of modifying and transferring data and systems from the old form to new form is another costly affair. The manpower and time spent may also be taken into account to know the non-monetary costs precisely. The company needs to calculate this though not for medical purposes as it will help be estimate the Regular work that was not carried during the regular course of medical (due to Medical Transcription intervention (some even call it as interruption). Again these costs are solely dependent on the company's workings. If the company engages the services of Medical Transcription consultant then the costs will be quite different, if it goes ahead with the process with the help of In-house transcription staff (which is not encouraged during the initial stages). These alone don't constitute Medical Transcription implementation cost. A host of other charges will be included in Medical Transcription implementing cost.

Consultation by Medical Transcription Expert

These factors also influence Medical Transcription cost to a considerable extent. The professional charges payable to the outsider also depends on the extent of the services availed by the company. If the company is restricts his service merely to training and implementation the fees will be different from seeking his expertise for the entire process which includes staying with the company to rectify practical difficulties after implementation, conducting refresher programs and so on. This is important component of Medical Transcription implementation cost. However, this is not the only issue in Medical Transcription implementing cost.

Training

This is also a crucial determinant of Medical Transcription costs. There are two modes of training offered in companies. Companies hire trainers to update their transcription staff on the nitty gritty of Medical Transcription. They in turn train the user to get acclimatized to Medical Transcription's functioning. This method has lot of drawbacks but still many companies go for it not only because of the comparative low costs but doing away with the need to train everyone in the company. In spite of the drawbacks this method has claimed relative success in some companies.

The other method is training the users and the transcription staff as well. In this method the transcription staff will be trained on technical parameters while the users will be trained on usage. But for the exorbitant costs, this method is highly successful. Medical Transcription implementing cost is very important. Similarly, if the company wants to seek the trainers service only for particular facets if it believes that the pool of In-house transcription staff are competent to handle other areas, then Medical Transcription costs will be different.

Trouble in Installation

All is well that End is well is a good old saying. The whole process of Medical Transcription can become an utter failure if the initial stages of implementations are not done properly. The change made in medical transcription software often creates a controversy when compared with the inherent features. This is an unavoidable operation that needs to be done in accordance with the needs and modalities of the concerned organization. These changes often defeat the very purpose and functioning of Medical Transcription though the fact remains that the organization would still continue to receive benefits on a rationed scale. At the same time it faces certain drawbacks due to the customizations that Medical Transcription undergoes.

Issues in medical

Medical Transcription calls for a modification of the medical process, but the reverse does not happen simultaneously. Medical Transcription systems are seldom suited to stay in tune with the unprecedented Ups and downs in the market. This either makes Medical Transcription function meaningless or puts the medical survival into question. This has resulted in recent Medical Transcription failure. Since change is viewed as an important feature of the medical itself the likelihood of Medical Transcription not getting accosted to such change is a limitation and one of the probable causes of Medical Transcription failure.

Reluctance of end users

Medical Transcription is to be put in use for the employees in the organization. Unfortunately, they are not often receptive to Medical Transcription as it is a change basically.
Some of the reasons cited for it are as follows:
- The fear in reducing the work force.
- Hesitation to learn new technology.
- The lack of confidence to handle it.
- Wrong usage.
- Improper training.

Errors in Medical Transcription implementation

Medical Transcription implementation failure is a major concern for companies. Medical Transcription implementation needs to be done without allowing any scope for limitations and mistakes. If it is not done perfectly then the success of Medical Transcription system will remain a question mark. The first and foremost factor that discourages Medical Transcription in an organization is the exorbitant costs and investment. The second one is the drafting of Medical Transcription implementation plan to ensure Medical Transcription implementation success.

Organizational reaction to change

Changes do happen quickly and immediately in the organization after Medical Transcription is implemented. But if there is no proper understanding of the process or mishandling of information, it will result in questioning the Medical Transcription process. If updating is not done in the machine it will only affect the medical process and create unnecessary confusions.

Problem of Transformation on Medical Transcription
Employees find it hard to digest the transformations that place in an organization all on a sudden due to Medical Transcription implementation. In fact employees exhibit positive signs as everything goes right in the first place. But as one progresses he finds difficult to work, as it gets more complex, the initial interest and expectation turns into apprehensiveness in due course of time. There is another category of people who did not encourage Medical Transcription right from the conceptualization stage. Their state of mind during these circumstances deserves no special mention.

Poor infrastructure and facilities
The first and foremost trouble in Medical Transcription could be poor infrastructure and facilities. Poor does not only means low standards but also includes those facilities that are either ill-equipped nor up to the professional standards demanded for Medical Transcription. When this happens to be the trouble an analysis has to be made right from the implementation process in order to check validity and ensure quality. These do not necessarily speak on the future of Medical Transcription or its intervention in the company because they are capable of being solved through system manipulation in most cases. Otherwise some maneuvers have to be done to confirm the suitable of the operations and make it user friendly. Medical Transcription architecture of failed Medical Transcription systems has to be analyzed in this context.

Mistakes in installation and implementation process
These problems occur when Medical Transcription consultant is not given the required liberty and freedom to make his own decisions. The management always tries to thrust their way of getting things done and turn deaf to the expert advice given by the Medical Transcription vendor and consultant. When they realize it during the flaws in the regular course of medical it becomes too late. The companies can make use of medical transcription software reviews for this purpose so as to avoid failed Medical Transcription systems.

1.7 ORGANIZATION OF STUDY:

Now, let us come to the last point of first chapter, organization of study. As we are aware now, our subject matter related to MIS in Medical Transcription on the aspect of Nepal, and discussed various aspects on the subject matter. There are still plenty of things to be known when going into the details of the subject matter. Point-wise, the main themes could be:

Medical Transcription Implementation Guideline
Research on medical resource planning have shown that the flaws in Medical Transcription implementation have resulted in the vast majority of companies failing to unleash the benefits of medical transcription softwares. This has led to lot of problems right from litigations to misinterpretations in medical media. The vendor is always taken aback because the entire community blames him and the products. Medical resource planning phases are very important in this regard.

Probable reasons behind Failure
The actual problems lie in choosing the right transcription for the company. If this is either taken for granted or done hastily then the chances of Medical Transcription Success are rare. Some of the reason for failure could be exorbitant costs, inadequate training, longer time, and failure of strategy and the lack of attitudinal change on the part of employees to accept and manage change.

Guidelines
Very few companies succeed in the first instance after implementing Medical Transcription. Medical Transcription is not a fortune but a technology that delivers results only after effective execution of the laid down procedures. Therefore, to merely bank on, it will not suffice to obtain any results. What is more important is the implementation of the necessary changes in the organization so as to combat Medical Transcription.

Medical Transcription is not an answer to the errors in medical plans and tactics. In fact Medical Transcription consultants are reluctant to attend to it because they don't want it to disturb the purpose of Medical Transcription. It should therefore be understood that Medical Transcription is an I.T. tool that assists and facilitates the medical process by being a part of it. On the contrary it is misunderstood that Medical Transcription can rejuvenate the medical.

Medical Transcription gap analysis and medical process reengineering should be performed properly. This will ensure that other steps are followed systematically and in accordance to the company's need. They are otherwise referred as medical resource planning phases. IT facilities in the organization should be at par with market standards and international reputation. This will enable the operation people to constantly modify and update as and when it is necessary in order to stay in tune with the competition. Research on medical resource planning will reveal this. The process of Medical Transcription implementation should be carried on by a team of competent personnel so as to ensure perfection, accountability and transparency. Medical Transcription should become a part of the daily routine. If that does not happen then the company cannot expect any fruitful results in spite of having followed the above mentioned steps meticulously in order to ensure the successful implementation of Medical Transcription and no amount of successful planning of medical resource planning phases will help in this regard.

There is another important issue that needs to be addressed in this regard. Even after successfully implementing and setting Medical Transcription right for action the trick lies in combining it with the medical process. The restructuring should also address issues like finding solutions for the current medical problems. It should not be done with an illusion that Medical Transcription will take care of everything. Unless these fundamental problems are solved the functioning of Medical Transcription will do very little to help connectivity and facilitation in medical. A choice is to be made from Medical Transcription implementation models after knowing, what companies use medical resource planning? An organization needs to answer the following questions while thinking of taking up Medical Transcription.

- Perception of the medical problems.
- The visualization of solving them.
- How is Medical Transcription going to solve the same and how worth is it and how effective are the measures taken to implement it.
- How and who will coordinate the operation of Medical Transcription and is it justified in terms of costs, time taken and efforts?
- What is the accountability and transparency of Medical Transcription operations and how far it will affect issues like piracy, IPR and their impact on the organizations performance and image and the possible measures to curb any unnecessary elements?

CHAPTER TWO: REVIEW OF LITERATURE

2.1   CONCEPTUAL REVIEW:

The Origins of Medical Transcription:

Medical transcription has become a common term today. Technological advances have slowly changed and always defined the medical transcription industry and it still continues to be so. The latest development of voice recognition software and its evolution may some day totally automate and even remove the human element in the medical transcription process. As of now, the traditional medical transcriptionist (MT) is happy to become an editor who has to just edit the documents produced by the VRS (Voice Recording Software) as its technology is still crude and has a long way to go.

Looking back into the past, all hand written medical records were highly abbreviated and written by the physician who actually treated the patient. Files kept in filing cabinets, that consisted of collections of handwritten notes/scribbles along with typed documents had to be physically retrieved from shelves every time the physician wanted to have a look at them. Further development just involved the duplication of medical records /documents using carbon paper.

While talking about the history of Medical transcription systems one remembers that various systems had started evolving right from the year 1960. The second-generation computers evolved at this time replacing vacuum tubes with transistors. However, all the systems of that period were primarily designed to help the manufacturing process. The very first transcription that was developed happens to be MRP (Medical Resource Planning) in the year 1975 closely followed by MRP2 and referred to the Manufacturing Resource Planning. These systems were yet not useful enough to be used in transcribing records in the medical / health sector. It is only much later in the early 90s that the actual medical transcription, as we know it today, came into existence.

Today, when we talk of medical transcription it automatically encompasses the speedy desktop, the Internet, digital transmission, information systems, PDAs, dictation systems, foot pedals, headphones and more. The evolution toward the electronic patient record and HIPAA compliance is forcing everyone to catch up with technology and there is no looking back.

Globalization has enabled the medical transcription professional to even sit at home and work for clients who may be located anywhere else on the globe or beyond. As cutting edge technology evolves it would not be wrong for us to say that one can only wait and see how the distant future of this industry is going to be. One can however expect transcription to become a much easier process. For highly professional and affordable medical transcription, medical billing and coding services call OSI (Outsource Strategies International). Prior to 1965, it was very expensive to build large-scale information systems. At about this time, the development of the IBM System 360 and other more powerful mainframe systems made it more practical and cost-effective to develop Management Information Systems (MIS) in large companies (cf., Davis, 1974). MIS focused on providing managers with structured, periodic reports. Much of the information was from accounting and transaction systems.

In the late 1960s, a new type of information system became practical – model-oriented MIS/DSS or management decision systems. Two DSS pioneers, Peter Keen and Charles Stabell, claim the concept of decision support evolved from "the theoretical studies of organizational decision-making done at the Carnegie Institute of Technology during the late 1950s and early '60s and the technical work on interactive computer systems, mainly carried out at the Massachusetts Institute of Technology in the 1960s. (Keen and Scott Morton, 1978 preface)." According to Sprague and Watson (1979), around 1970 business journals started to publish articles on management decision systems, strategic planning systems and decision support systems. For example, Scott Morton and colleagues published a number of decision support articles in 1968. In 1969, Ferguson and Jones discussed a computer aided decision system in the journal *Management Science*. In 1971, Michael S. Scott Morton's ground breaking book *Management Decision Systems: Computer-Based Support for Decision Making* was published. In 1966-67 Scott Morton had studied how computers and analytical models could help managers make a key decision. He conducted an experiment in which managers actually used a Management Information System (MIS) Management Decision System (MDS). Marketing and production managers used an MDS to coordinate production planning for laundry equipment. MDS ran on an IDI 21 inch CRT with a light pen connected using a 2400 bps modem to a pair of Univac 494 systems. Scott Morton's (1967) dissertation research was a pioneering implementation, definition and research test of a model-driven decision support system.

Now, let us move to the functioning part i.e. a US based online Medical Transcription Portal.

The Task:

To create an online portal that provides a platform where "practices" and Medical transcription companies can interact and do business. The scope of the proposed system included:

- Dictations Jobs.
- Uploading of encrypted voice files to a ftp site (automated process).
- To transcribe online thru the transcription interface.
- Generate a List of transcribed jobs.
- To view/approve the transcriptions.
- To batch, print, and convert to PDF.
- Generate reports.

The Advantage:

- Streamlines the flow of information and jobs between the doctor's office and the transcription provider.
- Considerably reduces time taken to manually allocate jobs and further provides specific reports like tracking and audits.

Functionality of the Online Medical transcription System:

A physician dictates into a Dictaphone, the details that need to be transcribed. This is then converted into voice files and after encryption uploaded to the portal. The assigned Transcriptionists then transcribe these files online via the transcription interface, Options for viewing, editing and approving the transcribed document were developed. Reports are then generated and made available to the physician.

2.2   REVIEW OF ARTICLE:

Review of article in JAAMT, by Debbie Hahn, debbicmt@visuallink.com

I have the JAAMT you're referring to (Jul/Aug issue). There is an article mentioning three different bills which might impact medical transcriptionists: S.1610, Independent Contractor Tax Simplification Act of 1996; HR.435 Fair Health Information Practices Act of 1995; and S.1360 The Medical Record Confidentiality Act of 1995, commonly referred to as the Bennett Bill. The last one seems to be of the most concern. The concern seems to be related to MTs being inappropriately classified as "healthcare providers" or "healthcare trustees," which would create some changes in how transcription is done. AAMT has written and met with Senate staff members who are working on the bill, which they say has been well received. They also said that AAMT will be represented legally if the bill reaches markup (rewriting). It isn't definite that the bill will come up for vote in 1996 because of the presidential election. On the next page, there is a 2-page copy of a letter written in May by Claudia Tessier to someone in the office of Senator Edward M. Kennedy, concerning the Bennett Bill. In her letter she outlines various specific paragraphs in the bill and suggests changes in the wording, which would exclude medical transcriptionists from the definition of "health information trustee" and thus eliminate this bill's impact on MTs. She summarizes by giving several reasons why MTs should not be classified in the bill's definition of health care provider, health care trustee or health researcher. Anyone who wishes to obtain a copy of the actual bill and read the actual wording from themselves should contact their senator's office and ask for a copy of Senate Bill 1360. Jennifer Martin, editor, encourages established MTs to welcome new MTs and hire them, and cautions new MTs to have realistic expectations. The Mile High Chapter of AAMT has a new form for recording continuing education credits for the CMT; contact Linda Galbraith in Parker, Colorado. A short note full of abbreviations to decipher is followed by a request for comments from readers. Jokes and a contest to find errors in paragraph follow. A new regular column where readers can ask questions of Donna Avila and Mary Glaccum debuts with two words of advice, one on call-in systems for dictation and the other on confidentiality. A list of anesthesia terms is followed by an article on dictation technology. It starts with people who still write by hand and cannot seem to learn to dictate, then discusses digital equipment and voice recognition.

The theme of this edition is on guidelines for records for ambulatory patient groups (APG). Two letters to the editor from MTs respond to the letter of March 25th from an anonymous MT who had a bad experience with a national company. One letter says her company treats her well, the other letter is from a company who treats their MTs well. There is an article for managers on how to deal with people using the Internet for personal use. An article by Pat Forbis of AAMT warns of the hypocrisy of employers who claim to have quality priorities but are laying off MTs or cutting their salaries, and paying the top managers too much money. Quoting from a book, PUNISHED BY REWARDS, she opposes incentive pay for production because it endangers quality documentation for patients. She suggests giving incentives for better patient care and containing the cost of the salaries of the CEOs. She cautions MTs not to trust or love their health care employers and make them earn their trust. There is an article on chart tracking and a report on the recent conference in San Diego on the electronic patient record. A few new medical terms are given from Stedman's WORD WATCHER periodical, including tropisetron, zileuton, BioSkin support, EndoLive endoscope and PumpPals. There are 15 advertisements for medical transcriptionists.

Issued at the end of spring, this issue starts with a statement by Sally Pitman, the editor and publisher, about the current challenges in the field of medical transcription, and PERSPECTIVES effort to accurately portray the state of the industry. Kathy Cameron of HPI writes about the centralizing of transcription departments that often comes with mergers. She tells how to analyze production and estimate needs. After a piece on Lincoln's language by Dr. Lederer, Joe Weber of Narratek and Smartype tells of his initiation into networking on the Internet, starting with the sci.med.transcription newsgroup. He marvels at the things that can be accomplished online. Catherine Baxter of MTIA writes of the HL7 project, which is working on setting standards so that computerized medical records can be exchangeable. A protocol has been devised for demographic information.

Adrienne Yazijian, a sales manager for Medical Records Corporation, writes of the importance of networking and reading to obtain information for career development, adding a good word on the importance of having vision and energy. Juanita Reames, an MT, writes on "Computer Fitness Training" and the importance of posture and movement for health. She recommends the Alexander Technique (800, 473-0620) for learning alternative movement. She has patented an arm cushion for computer users. She advises doing something about any pain you suffer while you work. She discusses assistive devices. After an article on MTIA by Catherine Baxter, Kathy Donneson, an educator, analyzes what she calls "hybrid organizations," new ways health care groups are working together. She discusses HMOs and managed care plans, and discusses the implications for transcription, mainly an increase in dictation and using subcontractors.

Dr. Bob Seale answers a variety of questions from readers, and Mary Glaccum and Donna Avila-Weil write about learning to set boundaries and be assertive, rational and persistent in your business roles, acknowledging valid criticism objectively and resisting manipulation. They recommend terminating work relationships where there is unfairness if your concerns are not respected.

An anonymous article outlines the transition to using a digital system, illustrating the principles with bad examples and the consequences that followed. The importance of research, planning and orienting staff is discussed. Carolyn Grimes, a teacher, describes how she found a way for her students to practice transcription in nearby sponsoring clinics, called "Service Learning" sites. Marcy Diehl, teacher, discusses teaching students to use reference books. Dr. Dirckx lists anatomy terms that are metaphors of geographic, such as fossa (ditch), fovea (pit), iris (rainbow), stellate (star-shaped) and sulcus (furrow made by a plow). Two pages of new terms with definitions are presented from Vera Pyle's Sixth Edition of CURRENT MEDICAL TERMINOLOGY. Judith Marshall, MT, talks about having started out on the "low road" in 1978 and finding MTs are still on that road due to mergers and cutback and lower standards. She suggests MTs research job opportunities, learn to negotiate, join AAMT and "join other MTs online."

2.3   REVIEW OF RELATED RESEARCH STUDIES:

Review of a study regarding a social-cultural implication of the MIS/DSS is linked below. Even though, this appears quite off-track in relation with our subject matter of thesis, I believe my thesis will be incomplete ignoring the below-mentioned facts. Here is a detailed study of the MIS/DSS related with socio-cultural aspect taking an example of Filipino and Indonesian community.

In cities like Bangkok and Jakarta, the rich and poor often live amongst one another. In Jakarta, one might see naked slum children playing football in the mud within a hundred meters of mansions (although the other major Southeast Asian cities are now moving towards the Manila model). In Manila, however, the elites have always lived in enclaves like Forbes Park and San Lorenzo Village, the high walls topped with barbed wire and guards armed with sawed off shotguns symbolizing just how polarized this society is. When the oligarchs left their haciendas and moved to Manila (see Cronies and Booty Capitalism), they settled in palatial residential complexes on the outskirts of Manila. Forbes Park was the first and the grandest, a golden ghetto with carefully manicured lawns, peaceful streets, and heavily armed private security.

The Socio-Historical Context: The incredible polarization between rich and poor in the Philippines is nothing new. For that matter, globalization has also been around for centuries. The Portuguese explorer Magellan, under the sponsorship of the Spanish crown, landed on the shores of Mactan with basically two objectives: to colonize the country with an eye toward easy wealth and to evangelize the heathen natives into the only true faith of the Catholic Church (see An Oversimplified History Lesson for more historical context). But let's not dwell on the colonial era, even though many of the seeds of today's situation were sewn then. Instead, let's fast forward three centuries and take a quick (and admittedly oversimplified) look at the post-war economic history of the Philippines. Land control policies: When Admiral Dewey steamed into Manila Bay a bit over a century ago, about 80% of land in the Philippines was in the public domain. This remained true after independence following World War II. Successive generations of Filipino politicians determined how land was to be exploited and by whom. Those with the right connections got the timber and mining rights. The Philippine State has traditionally encouraged the extraction of natural resources through leasing large areas for exploitation at nominal fees and ensuring zero export taxes. Such concessions were generally given in exchange for free access and/or quotas into the American market.

For example, one of the first things the Ramos administration did was to liberalize the mining industry by dismantling restrictions on foreign investments and offering a veritable bonanza of incentives. Investors were given a 10-year tax holiday, capital tax exemptions, 100% repatriation of profits, and capital and other incentives. The consequences of these land use policies have not been pretty. You could start by mentioning the ongoing marginalization of indigenous peoples, tremendous concentration of land ownership, and environmental degradation. The net result: perpetuation of the semi-feudal, semi-capitalist, and neocolonial character of the Philippine economy and mass displacement of indigenous communities and upland farmers. Many of those uprooted folks end up in squatter settlements like the one near my favorite upscale Manila coffee shop. In other words, not that much value added and not that great an impact in terms of improving the skills of the work force. And people living in poverty outside the gates of the eco-zones are not affected at all, other than breathing even more fumes than usual thanks to the large trucks ferrying the goods back and forth. Impoverished public sector and the accumulation of debt: The Philippines is famous for its high rates of tax evasion, especially by the rich. The country has long financed its fiscal deficits through borrowing and printing money. Indeed, it's easy to forget that it was only just over 15 years ago (1983-1985) that the Philippines experienced a tremendous debt crisis as local and foreign investors high-tailed it out of the country in the wake of the Marcos' years, virtually crippling the Aquino administration. Macroeconomic growth has traditionally been promoted through deficit spending, money creation, and external borrowing. Such policies have contributed, naturally enough, to inflationary pressures which recur from time to time. All of which is not to say that the Philippines is a basket case. It is not. Beginning with the early days of the Ramos administration almost a decade ago, the economy has slowly but surely gotten back on its feet after the devastation left behind by Marcos. General Ramos had been observing the rather amazing Asian Tiger economic expansion of the 1980s and early 1990s, and he liked what he saw. His key policies of privatization, liberalization, and opening up the economy to foreign investment fundamentally changed the situation, most would argue in a positive way. At least the economy started growing again (however haltingly). The country weathered the Asian crisis in better shape than many of its neighbors, thanks largely to sound fiscal policies and limited speculative exposure in real estate (as compared, certainly, to Thailand).

In the recent days, people from countries like Philippines, India, and Nepal are beginning to work in hand-to-hand relationship with United States from BPO out-sourcing from which the economic condition of these countries are likely to rise by the years to come. The labor cost in the United States is very high compared to that of South Asia. So, both United States as well as South Asian Countries can be both benefited from this business. United States can get cheap labor and on the other hand poor Asian countries can take benefit of working for the United States from their country and receiving payments in standard scale than that of their country.

So, we can conclude that the poverty condition of the countries of South Asia or South-East Asia is very critical. The BPO out-sourcing can serve as an opportunity to eliminate some of the poverty of the people in this region.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1   RESEARCH DESIGN:

Research Design: Let us first move on to define the research design. First we should know why research design to understand it clearly.

-) Specifies the number of groups in a study:
    - o Is there only one group, such as would be the case with a population survey, or a chart audit? Or are there multiple groups to be compared?
-) Decides when interventions (if any) will occur:
    - o Is this a cross-sectional study at one point in time or are you "manipulating" the condition of some or all of your experimental subjects?
-) Selects the type, order and frequency of observations and measures:
    - o What and who are you going to measure and will you be measuring once only or repeatedly, as in a pre-test, post-test, follow-up scheme?

There are three general questions that discriminate among types of research design:

1. Is there a planned treatment or intervention?
2. Is there a control group for comparison?
3. Is it possible to randomly assign subjects to groups?

If there is no planned treatment or intervention then it is correlational or observational design.   If there is a control group but no randomly assignment to groups then it is quasi-experimental design.   If there is a control group AND random assignment to treatment and control groups then it is experimental design.

Some Basic Concepts of Experimental Design

Variability - Another term for chance error. When a measurement is repeated, the two values obtained differ! Collecting more data can reduce variability.

Bias - Systematic error. Collecting more data will not reduce bias.

Accuracy - How close is a measurement to the true value?

Precision - How large is the chance error, i.e. how repeatable are the measurements?

Replication - The process of repeating measurements to try to reduce variability

Randomization - a chance procedure for allocating subjects to treatments and controls so that the groups are as similar as possible with respect to all important variables, whether they are identified or not. The purposes are: to safeguard against selection bias, to ensure against accidental bias, to carry out statistics tests, and to prevent rash interpretations. Without randomization, groups may not be comparable.

Placebo - A totally inert treatment given as a substitute for an active treatment to a patient who is unaware of the difference.

Double-Blindness - Neither the patient nor the assessor knows the patient's group membership; it prevents bias in the patient and/or assessor.

Inclusion and Exclusion Criteria - Define who the study is open to and exclude patients for whom the trial treatment is contraindicated, whose response may be biased, or for whom there is already a definite treatment preference.

Sample Size

Questions about sample size are ubiquitous in research. Too small a sample will yield scant information; but ethics, economics, time and other constraints require that a sample size not be too large.

3.1.1 POPULATION AND SAMPLE:

Population is the total number of individuals or objects being analyzed or evaluated. A Target Population is the population, clients, or subjects intended to be identified and served by the program. For Example, a boot camp program may identify, as its target population, 18-20 year old first-time violent offenders. A Probability Sampling is a method for drawing a sample from a population such that all possible samples have a known and specified probability of being drawn.

Table of population details in Medical Transcription Employees in Nepal:

Name of Company	No of Employees	Location
Pentasoft Technologies	100+	Jamal, Kathmandu
NepMed Technologies	50+	Jamal, Kathmandu
Golden Technologies	20	Tripureshor, Kathmandu
Logic Point	25	Gongabu, Kathmandu
Shristhi Solutions	15	Dillibazar, Kathmandu
Miracle Technocraft	15	Biratnagar, Nepal
Comit Transcription	15	Biratnagar, Nepal
National Technologies	15	Biratnagar, Nepal
Gautam Techologies	15	Thamel, Kathmandu
Valley Infotech	10	Patandhoka, Kathmandu
Iway Solutions	10	Tripureshor Kathmandu
Digitech Solutions	10	Tripureshor, Kathmandu
Others	200	Various places in Kathmandu
TOTAL	500	

According to this table that was published a year ago confirms that there are more than 500 employers in Nepal working as a Medical Transcriptionists.   The population concentration is mostly in the Kathmandu but recently the trend of starting the office aside from the Kathmandu Valley is also getting popular. Compared to some years ago, the rate of increment of this field is almost double, and hope to reach double mark within two years from now and then so on.

Turnaround Times Sample Study:

Turnaround benchmarks periodically have been published in the *Journal of AHIMA* as well as other trade publications. One of the more recent turnaround time surveys was published in the February 2000 issue of the *Journal*. This particular survey was sent to 1,000 randomly selected AHIMA members identified as HIM directors in acute care facilities. The data compiled were based on the 200 useable surveys returned. See "Sample Production Turnaround Times," below, for a summary of some of the turnaround time statistics.

Sample production Turnaround Times			
	Days		
Turnaround Times (for individual charts)	**Low Mean**	**Mean**	**High Mean**
Assembly	1.89	2.19	2.5
Analysis	2.26	3.5	5.74
Coding	3.78	5.5	6.51
Release of information	2.30	5.28	11.94

Productivity Benchmarks

The chart "Sample Productivity Benchmarks," below, summarizes anecdotal productivity and turnaround time benchmarks collected at AHIMA. The data come from articles in the *Journal* and other HIM periodicals, conversations on HIM listservs, the Communities of Practice, and personal experience. The data are not scientific, but it is frequently requested by members and may be helpful for your organization's benchmarking plan. Although the figures in the chart may provide a snapshot of how your organization compares with others, it is wiser to peform a more thorough analysis. It's important that organizations understand the sources of data, sample size, and indicator definitions.

Sample Productivity Benchmarks			
Productivity Benchmarks	Per Hour		
Function	Low	Average	High
Admission processing	20	30	60
Assembly (charts per hour) Inpatient Observation/outpatient surgery/newborn/maternity Other outpatient	5	8 14 20	20 60 120
Analysis (charts per hour) Inpatient Observation/outpatient surgery/newborn/maternity Other outpatient	6 12	8 20	12 30
Assembly and analysis (charts per hour) Inpatient Observation/outpatient surgery/newborn/maternity Other outpatient		10 14 18	30 43
Coding (charts per hour) Inpatient Observation/outpatient surgery/newborn/maternity Other outpatient	2 5 10	4 9 30	5 12 36
Coding and abstracting (charts per hour) Inpatient Observation/outpatient surgery/newborn/maternity Other outpatient	2 18	3 7 27	4 10 30
Filing loose reports (sheets per hour)	30		188
Pulling/retrieving records (charts per hour)	30	45	
Release of information (charts per hour)	3	6	
Transcription (per hour) Minutes of dictation 65 character lines	10 125	13 175	17 275

3.2   SOURCES OF DATA:

Regarding the main source of data in context of Nepal, the newspapers and IT magazines as the best source for data collection. There is no such details in the IT department of Nepal or others government offices as per the above data, they are established by the non-governmental office.

The main sources of data for this thesis are as follows:

- Newspaper, IT magazines (eg Kantipur).
- Dixon Lee, Claire. "Benchmarking Healthcare Facility Performance Using External Data Resources." Presentation at the AHIMA Clinical Data Management Institute on September 26, 2002, at AHIMA's 74th National Convention in San Francisco, CA.
- Dunn, Rose. "Productivity Standards: A Survey of HIM Professionals, Part II." *Journal of AHIMA* 67, no. 6 (1996): 61-63 and Dunn, Rose. "Tricks of the Trade: Performance Standards for Coding Professionals." *For the Record* 5, no. 23 (1993): 4-6.
- Michigan Medical Record Association. "Practice Forum: Productivity Standards for Coding." March 1990. Opus Communications. "Benchmarking Survey: Monitoring Transcription Productivity." *Medical Records Briefing* 10, no. 1 (1995).

3.3   ANALYTICAL TOOLS AND TECHNOLOGY:

Before going to the tools and technology lets go first through the collection of data, why is it essential to collect data and then move to ways or technologies for it.

Data collection tools and methods and collecting data, although deciding on data collection tools and methods and actually collecting data are actually two different steps in the evaluation cycle, they are inextricably linked and we thus combine them as part of the tutorial. Data are a collection of information, evidence, or facts from which you can draw conclusions. Data can be quantitative - numeric information - or it can be qualitative - involving stories, observations, etc.   Data are important because they offer evidence for the outcomes your program is producing and allow you to confidently make the case for your programs. The data that you want to collect will be driven from the questions you want answered (see the Theory of Change section for more information on developing evaluation questions). There are a variety of different types of data collection methods. Some of the more common types are:

Activity Logs/Skill Sheets written documentation of participant's attendance, achievement or acquisition of skills good for what and how many questions. Document review is review of written documents such as performance ratings, program logs, tally sheets, and other existing indicators. Focus groups Moderated discussions on a particular topic or issue. Interviews Data collection through oral conversations. Observation is watching people engaged in activities and recording what occurs and lastly, questionnaires is written responses to clearly defined questions.

You can also use alternative documentation approaches including having program participants keep written, audio, or video journals of both their experiences and their thoughts, feelings, etc.

Any of the above methods can also be implemented through pre/post tests in which people are tested both before the program has been implemented and after the program has been implemented, and changes in attitudes, skills, behaviors, etc. are measured.

There are many existing data collection tools available (see Tools section below) but sometimes it is necessary to create your own data collection tool. To do this you should implement the following steps:

- Finalize your evaluation questions.
- Decide what information you already have and what information you will need to collect.
- Based on the type of data you need, choose an appropriate data collection method.
- Develop tools to collect the data.

3.3.1 TABLES AND FIGURES

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            │ Doctor   Dictate │ ◄──────┐
            │ from     United  │        │
            │ States           │        │
            └──────────────────┘        │
              │Route 1   │Route 2   Return Route
              ▼          ▼            │
            ┌──────────────────┐ ─────►│
            │ Medical          │       │
            │ Transcription    │       │
            │ Division in United│ ◄─────┤
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          │    │ MTs in Nepal     │
          │    │                  │
          │    └──────────────────┘
          │          │         │
          │          ▼         ▼
          │    ┌──────────────────┐
          │    │ Editors          │
       ◄──┴────│                  │
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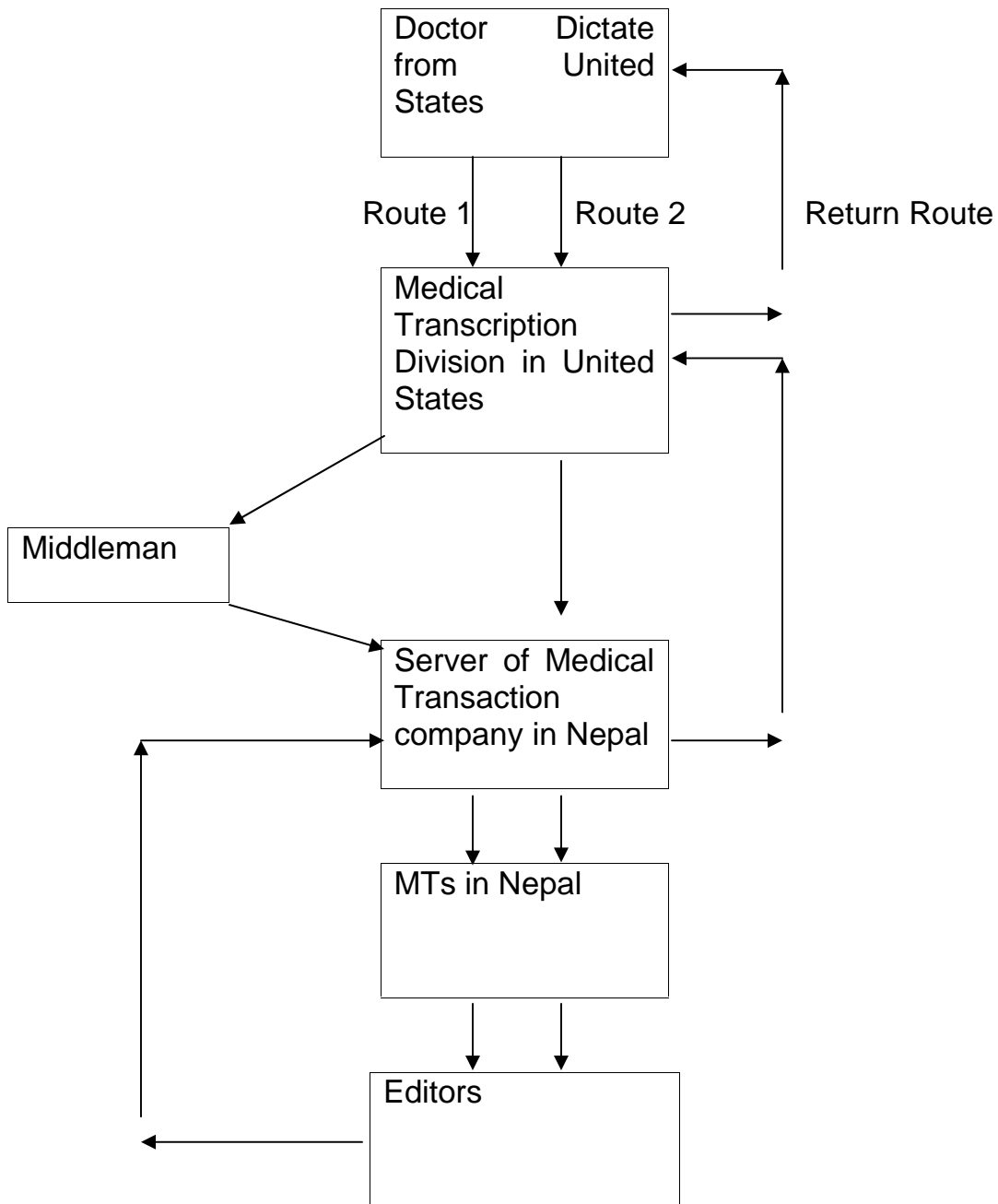
Fig. Data Transfer Path

CHAPTER FOUR: SYSTEM ANALYSIS, DESIGN, AND DATA PRESENTATION:

4.1   ORGANIZATION STRUCTURE:

The structure of the organization is simply termed as organizational structure. The organizational structure of one organization defers from another even if they are the organizations of similar nature. Structure depends upon the factors like necessity of organization, population of organization, dependency of organization, role of staffs in the organization, role of manager in the organization, role of chief in the organization, infrastructure, economic power of the organization, growth of the organization etc.

Now let us talk regarding the organization that we are considering for our thesis paper. Miracle Techocraft is a Medical transcription company, which consists of staffs working in following positions:

C-Level Executive
(CEO)

Information Management
Chief Security Officer
Chief Compliance Officer

Workforce
Editor
Senior Quality Analyst
Quality Analyst
Senior Medical Transcriptionists
General Medical Transcriptionist
Junior Level Medical Transcriptionists
Trainee/Refreshers
Junior Level Staffs/Peons

4.2   SOURCES OF INFORMATION:

Regarding the main source of information in context of Nepal, the newspapers and IT magazines as the best source for information collection. There is no such details in the IT department of Nepal or others government offices as per the above information, they are established by the non-governmental office. As I said earlier, the various sources for information for this thesis work are as follows:

The main sources of data for this thesis are as follows:
- Newspaper, IT magazines (eg Kantipur).
- Dixon Lee, Claire. "Benchmarking Healthcare Facility Performance Using External Data Resources." Presentation at the AHIMA Clinical Data Management Institute on September 26, 2002, at AHIMA's 74th National Convention in San Francisco, CA.
- IT India, Organizational Structure, Issue 127
- Dunn, Rose. "Productivity Standards: A Survey of HIM Professionals, Part II." *Journal of AHIMA* 67, no. 6 (1996): 61-63 and Dunn, Rose. "Tricks of the Trade: Performance Standards for Coding Professionals." *For the Record* 5, no. 23 (1993): 4-6.
- Michigan Medical Record Association. "Practice Forum: Productivity Standards for Coding." March 1990. Opus Communications. "Benchmarking Survey: Monitoring Transcription Productivity." *Medical Records Briefing* 10, no. 1 (1995).

4.3   DFD OF EXISTING SYSTEM:

1.   Hierarchy of staffs in new system, i.e. structure of Miracle Technocraft:

```
                          ┌──────────────┐
                          │ CEO          │
                          └──────┬───────┘
                                 │
              ┌──────────────────┴──────────────────┐
              ▼                                      ▼
┌───────────────────────────┐        ┌───────────────────────────┐
│ Chief Security Officer     │        │ WORKFORCE                 │
│ Chief        Complaint     │        │                           │
│ Officer                    │        │                           │
└───────────────────────────┘        └──────────────┬────────────┘
                                                     │
                                                     ▼
                                      ┌───────────────────────────┐
                                      │ Editor                    │
                                      │ Senior Quality Analyst    │
                                      │ Quality Analyst           │
                                      │ Senior           Medical  │
                                      │ Transcriptionists         │
                                      │ General          Medical  │
                                      │ Transcriptionist          │
                                      │ Junior Level MT           │
                                      │ Trainee/Refreshers        │
                                      │ Junior Level Staffs/Peons │
                                      │                           │
                                      └───────────────────────────┘
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Fig. Organization structure

2.   *DFD of purposed new working system of Medical Transcription office:*

```
┌─────────────┐                              ┌─────────────┐
│ Miracle     │                              │ Upload      │
│ Technocraft.│                              │ the final   │
│ Server      │                              │ version     │
│             │                              │ file        │
│             │                              │ from        │
│             │                              │ network     │
└─────────────┘                              └─────────────┘
      │   ↑ ↘                                       ↑
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└─────────────┘         │ Outsourcing │
      │                 │ Company  in │
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│ Prepares    │         └─────────────┘
│ Worksheet   │
└─────────────┘
      │
      ↓
┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ MT  type    │ ──→  │ Typed       │ ──→  │ QA          │
│ those       │      │ report      │      │ checks      │
│ reports     │      │ placed in   │      │ those       │
│             │      │ network     │      │ typed       │
│             │      │             │      │ reports     │
└─────────────┘      └─────────────┘      └─────────────┘
```

Fig. Process of work

4.4   ANALYSIS OF EXISTING TECHNOLOGY:

There exists a lot of modern technology regarding this field, but because of us being in the category of least developed country could not utilize the utmost of the technology. So, we had to perform our work just with the technologies that are around us. Few years back, the condition was even worse. But now, the technology usage has been increasing gradually in this region too. It is the power of technology that we are doing jobs like Medical Transcription these days by transcribing the files for the American doctors or others who are very far from us. It is the blessing of technology with which we are doing this work from country like Nepal.
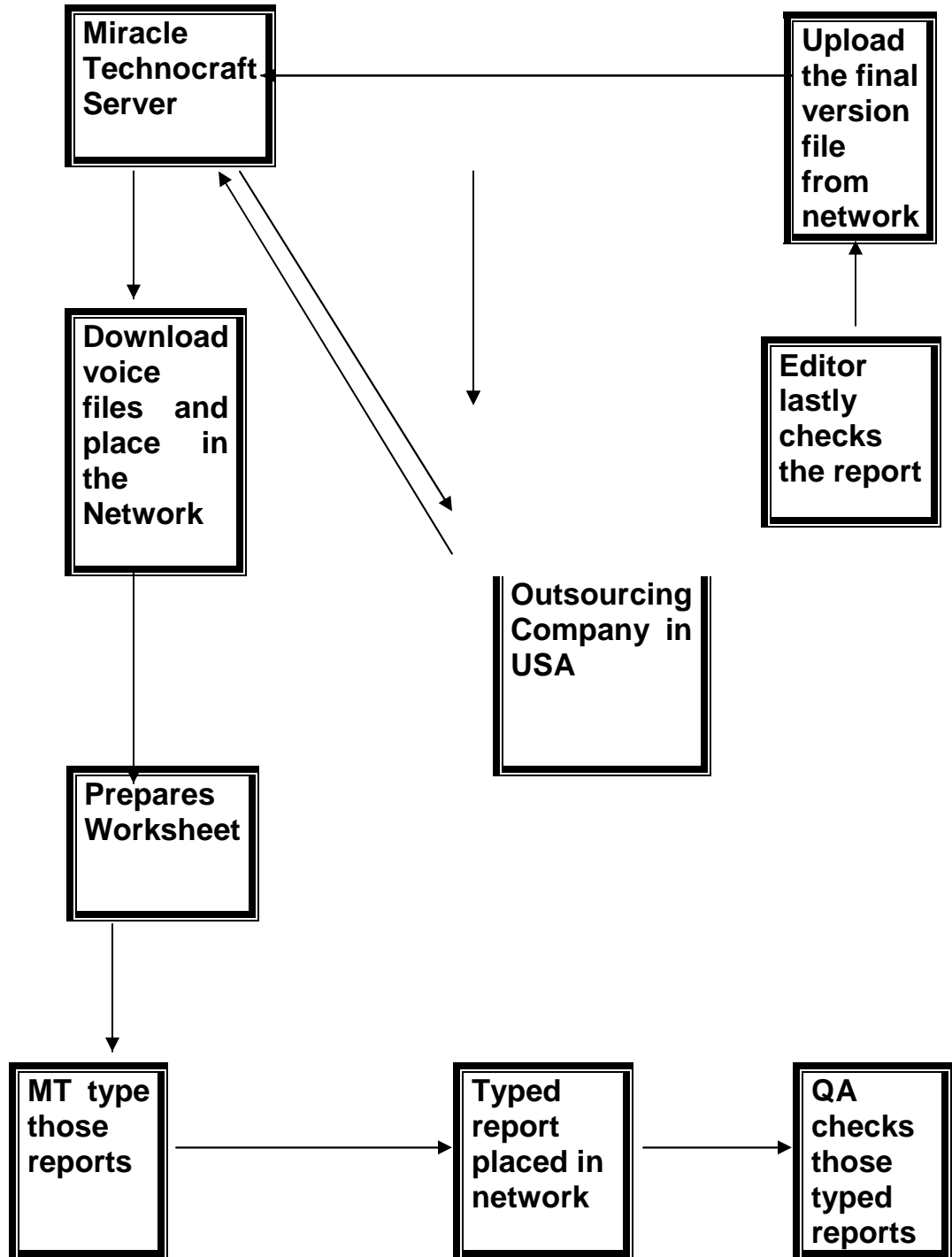
For working as a medical transcriptions, one should be well equipped with the technology equivalent to of the United States as we are doing work that comes directly from the United States. So, the technology needed in this field is quite advanced.

We generally need the following for working:
   ❖ Broadband Internet Connection (64 KBPS).
   ❖ Pentium IV Computers, latest preferred.
   ❖ Headphones.
   ❖ Foot pedals.
   ❖ Office Structures like phone, fax etc.
   ❖ Well-equipped labs and classrooms, well maintained.
   ❖ Soundproof studio.
   ❖ Networking of the Computers.
   ❖ Medical Dictionary.
   ❖ Drug Reference Dictionary (QELDR).
   ❖ American Dictionary.
   ❖ Windows 2000 or Window XP.
   ❖ Antivirus.
   ❖ DSS Scribe and other audio software.
   ❖ Microsoft office, Microsoft word, etc.
   ❖ Keyboard.
   ❖ Router, Hub.
   ❖ LAN card.
   ❖ Repair, maintenance, and troubleshooting software etc.
On analysis of the technology, the main point arises on comparison of the technology used in United States and Nepal. Even though, most of the things above mentioned are available in both the countries i.e. developed countries as United States (work provider) and Nepal (worker), the version of the software and hardwares are quite different due to which it may be hard at times for working.

4.5 LIMITATIONS OF EXISTING SYSTEMS:

Even though, technology advancement has made a lot easier for every one in each and every field, there are still many limitations as well. Talking about medical transcription, the limitations mainly consists of:

- ❖ Internet Failure: In early days of Internet were used by military only. After using by civilians, the early days were not so good and still in developing phase. Only after making the connections through the satellite, there appear to be a continuous supply of the Internet connection.
- ❖ Hardware: The other main limitations of existing system are the hardware. Even though the hardware are working swiftly and making a good progress, it is still not upto the point. Also, in the hardware there exists a large gap between the developed and underdeveloped country regarding which the underdeveloped country has to adjust regarding the hardware usage as most of the new hardware appear lately in the underdeveloped country market.
- ❖ Software: The other limitations come regarding the software. Here also, the developed countries are far more advanced regarding the software use. The underdeveloped countries are using the pirated software, which is low in quality, thus ultimately affecting the speed and quality of work.
- ❖ Maintenance: The maintenance also provides a bulk-limiting factor. New viruses are developed or spreading every day for which the current anti-virus needs to be updated or in some cases the current existing anti-virus does not work at all. This proves to be the ultimate drawback in this field. Regular maintenance and care of the hardware provides some relief but there is always a threat of new virus.

Also, regarding if a medical transcription company failed to update itself with the new technologies and new findings in the global world, it will disappear.

4.6   MAJOR FINDINGS OF THE EXISTING SYSTEM:

After finding out some limitations to the existing system, we are now on some of the major findings of the existing system.   There have been numerous findings, which we can list as "Major" in the different times out of which we are taking in account of some of the major findings regarding the employers, company and so on.

- Firms, by and large, are yet to realize the full advantages in medical transcription industry.
- The reduced need has not resulted in lay-off of employees due to strong institutional protection to employees in these firms.
- As a result, different firms, depending upon their growth, product market condition, and management, rely on different strategies to offset the changing labor requirements.
- While some jobs do require more skills some have witnessed reduced skill content hinting at a possible skill polarization.
- Given the lack of codification of business processes and procedures, in all the firms studied, the possibility of dis-intermediation, i.e., removal or decline in size of middle management in the near future is remote.
- The marginal presence of women employees in the auto industry implies that ICT diffusion in traditional manufacturing really does not affect them.
- In the call-center industry, women are employed in almost equal numbers. The age profile is however mostly confined to the 18-25 group with almost all of them unmarried.
- In terms of salary levels, employee respondents opine that given their formal qualifications, employment in call-centers and medical transcription is a better option compared to alternate sites of employment.
- Though some report fatigue and symptoms of Repetitive Strain Injury (RSI), many claim to enjoy their work as it gives them an opportunity to interact with other human beings. All of them concur that constant monitoring of their work induces lots of stress.
- No obvious differences in career mobility or salaries drawn between men and women are observed.   Nevertheless, many women respondents state that it will be difficult for them to continue with such work after change of marital status.
- Scope for mobility is however restricted due to the small number of high-end jobs in the call-center industry.

4.7   CONCEPT OF NEW SYSTEM OR MODALITY OF THE SYSTEM:

It is natural that every system needs to be updated with regard to time. This applies in each and every field. Regular modification and usage leads to a regular improvement of the existing system thus developing a new system with improved version. We can take example of automobiles, softwares, hardwares, computers, etc.

In our subject matter of this thesis that is the medical transcription, improvement and getting better is most applicable. The companies, which fail to get better in time, have to be lost in the way. Only the companies, which update themselves with time, can exist. Similarly, on behalf of MT professionals, they should be updated with the time. New discoveries or new softwares knowledge would be very helpful to be a successful Medical Transcriptionist professional. MTs should cope up with the existing system and should be able to get updated whenever the system changes or new system is upgraded.

As per our subject mater, we have already discussed our simple or current system, its modality and some of its drawbacks. So to get rid of the present drawbacks, the concept of new system or modality of the system is essential.

The new system modality runs around making the client and the company more near by avoiding the subcontractors and others vendors who are staying in between. The new modality centers around reducing the number of subcontractors making the path between the worker and the work provider more likely a straight path.

This concept will ultimately benefit both the work providers and workers. Since there will be no commissions in between levels, the workers can have a direct benefit from the work provider. The communication gap on the other hand will be very minimum so the relation between the work provider and worker will be strong. There are numerous other benefits if we did make a new system excluding the defects and drawbacks that are in the present system. As much the defects and negative points be minimized, more beneficial and a strong professionalism develops which will ultimately serve as a positive point.

4.8   COMPARISON BETWEEN NEW AND EXISTING SYSTEM:

The concept of new system comes from the drawbacks of existing system. So on comparison of the existing system and new system, the new system is generally advanced with overcoming the major drawbacks of the existing system.

The factors of comparison are discussed as follows:

1. Speed:

The major factor that we expect in the new system that its speed is more than the previous one or existing system. Since the discovery of any of the discoveries, the new system always proved to be more efficient than the previous one. Once the new system make itself established, it becomes the existing system replacing the old one and then again the building of more new system starts and will replace the existing system. This is a continuous process.

Now let us focus our mind to the existing and new systems of Medical Transcription. The speed factor has been bothered by the middleman who takes the jobs different hospital from United States and provides the jobs to different medical companies in countries like India and Nepal. The speed of conversation, file transfer, TAT time etc has been greatly affected by the middleman. Generally, the speed becomes slower due to the middleman. So on our purposed new system, there is no role of the middleman.   There will be the direct link in between the medical transcription companies in countries like Nepal and India with the work provider i.e. hospital of the United States. This will ultimately make the turnaround time (TAT) time short and benefit both of the parties.

2. Interaction:

The other most important aspect is the interaction between the client and workers. The more the speed of interaction, the better quality of work delivered. With the middleman in between the interaction involves the three parties resulting in the delay of the interaction. But on the purposed new system, since there is no middleman, it will be more efficient and profitable.

Old/existing system:

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┌─────────────┐
│ Work        │
│ provider    │
└─────────────┘
       │
       ▼
┌─────────────┐
│ Middleman   │
└─────────────┘
       │
       ▼
┌─────────────┐
│ Medical     │
│ Transcription│
│ companies   │
│ of Nepal    │
└─────────────┘
```

New system:

```
┌─────────────┐
│ Work        │
│ provider    │
└─────────────┘
       │
       │
       ▼
┌─────────────┐
│ Medical     │
│ Transcription│
│ companies   │
│ of Nepal    │
└─────────────┘
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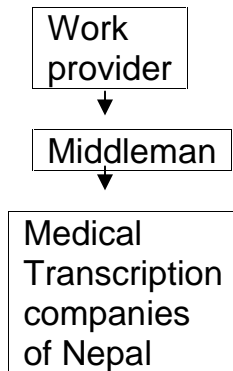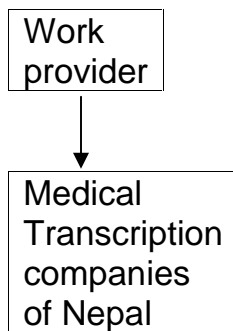
3. Connectivity:

The other advantage of new system to old system is the connectivity part. The connection is generally via the middleman between the work provider and worker in the old/existing system, but since there is no middleman proposed in the new system, there would be instant connectivity between the work provider and worker. The necessary steps to improve the quality of work, any global factors, natural disasters information etc could be given or taken instantly thus, leaving a very low chance to affect the work because of them. Instant connectivity helps to take instant steps, which is beneficial for both the work providers and workers as well.

There are many other basis of comparison of new system and existing system, but the major thing is effectiveness of the new system.

4.9   APPLICATION MODELING:

The modeling of the new system is done as above.   The application modeling is the process to model the work process or application of the system.   The application modeling of the Medical Transcription can be compared with that of a bank system with customer involved.   The customer is one who deposits his/her money and ultimately is making effort in upraising the bank even though bank being a separate unit as those of medical transcription companies in Nepal and work provider from the United States.

Customer-Bank relationship on Opening of Account:
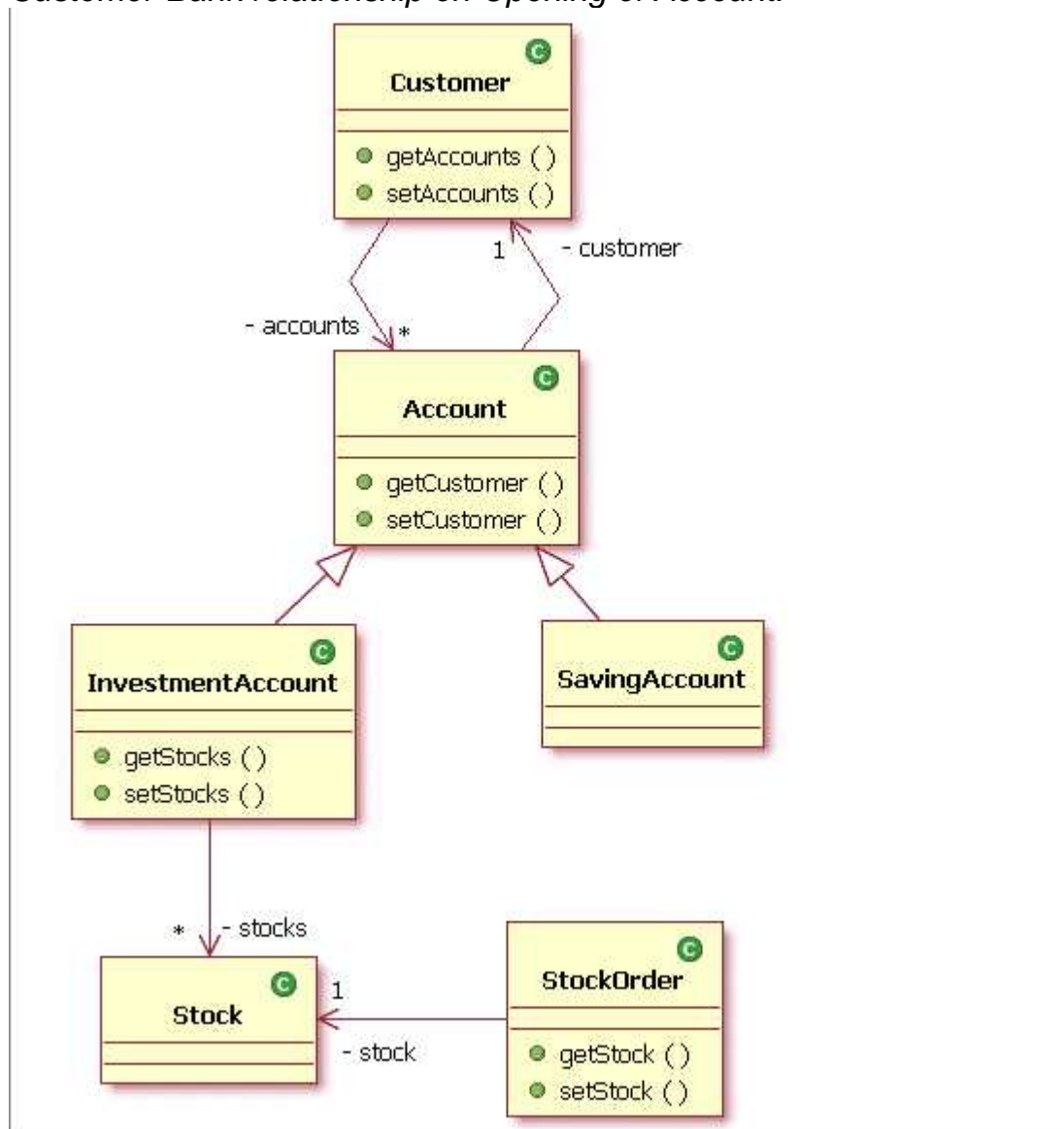
The application modeling of the Medical Transcription use of MIS is that of the above-shown Bank-Customer interference for account transaction.

```
        ┌──────────────────────┐
        │ Doctor      Dictate  │◄─────┐
        │ from        United   │      │
        │ States               │      │
        └──────────────────────┘      │
            │           │             │
         Route 1     Route 2      Return Route
            │           │             │
            ▼           ▼             │
        ┌──────────────────────┐──────►
        │ Medical              │      │
        │ Transcription        │      │
        │ Division in United   │◄─────┤
        │ States               │      │
        └──────────────────────┘      │
            │                         │
            ▼                         │
  ┌──────────────┐                    │
  │ Middleman    │                    │
  └──────────────┘                    │
            │           │             │
            ▼           ▼             │
        ┌──────────────────────┐──────►
     ┌─►│ Server of Medical    │
     │  │ Transaction          │
     │  │ company in Nepal     │
     │  └──────────────────────┘
     │       │           │
     │       ▼           ▼
     │  ┌──────────────────────┐
     │  │ MTs in Nepal         │
     │  └──────────────────────┘
     │       │           │
     │       ▼           ▼
     │  ┌──────────────────────┐
     └──│ Editors              │
  ◄─────│                      │
        └──────────────────────┘
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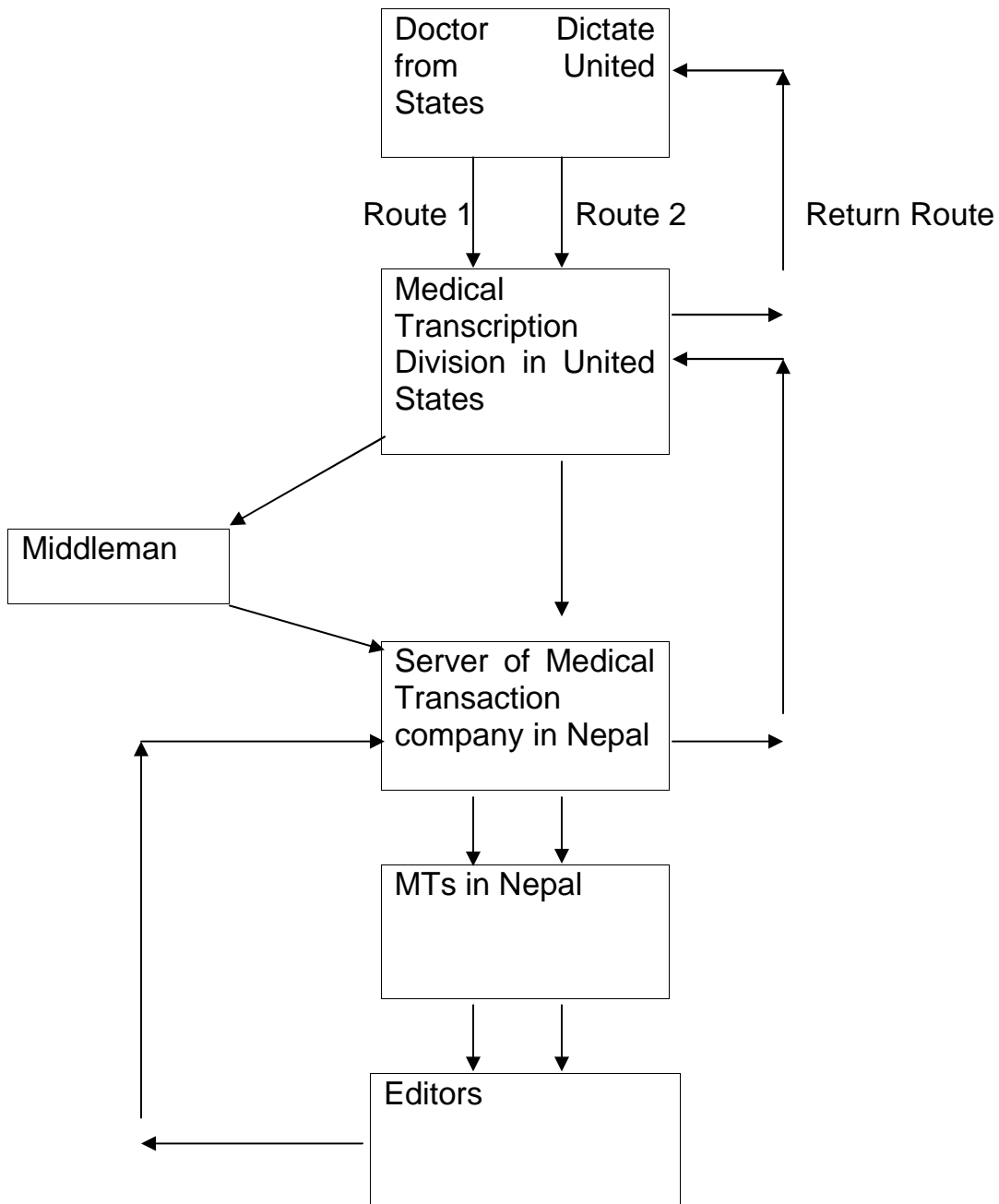
Fig. Application modeling of MT business

4.10 DFD, DD, ERD FOR NEW SYSTEM WITH INPUT, DATABASE, AND OUTPUT DESIGN:

1.   Hierarchy of staffs in new system, i.e. structure of Miracle Technocraft:
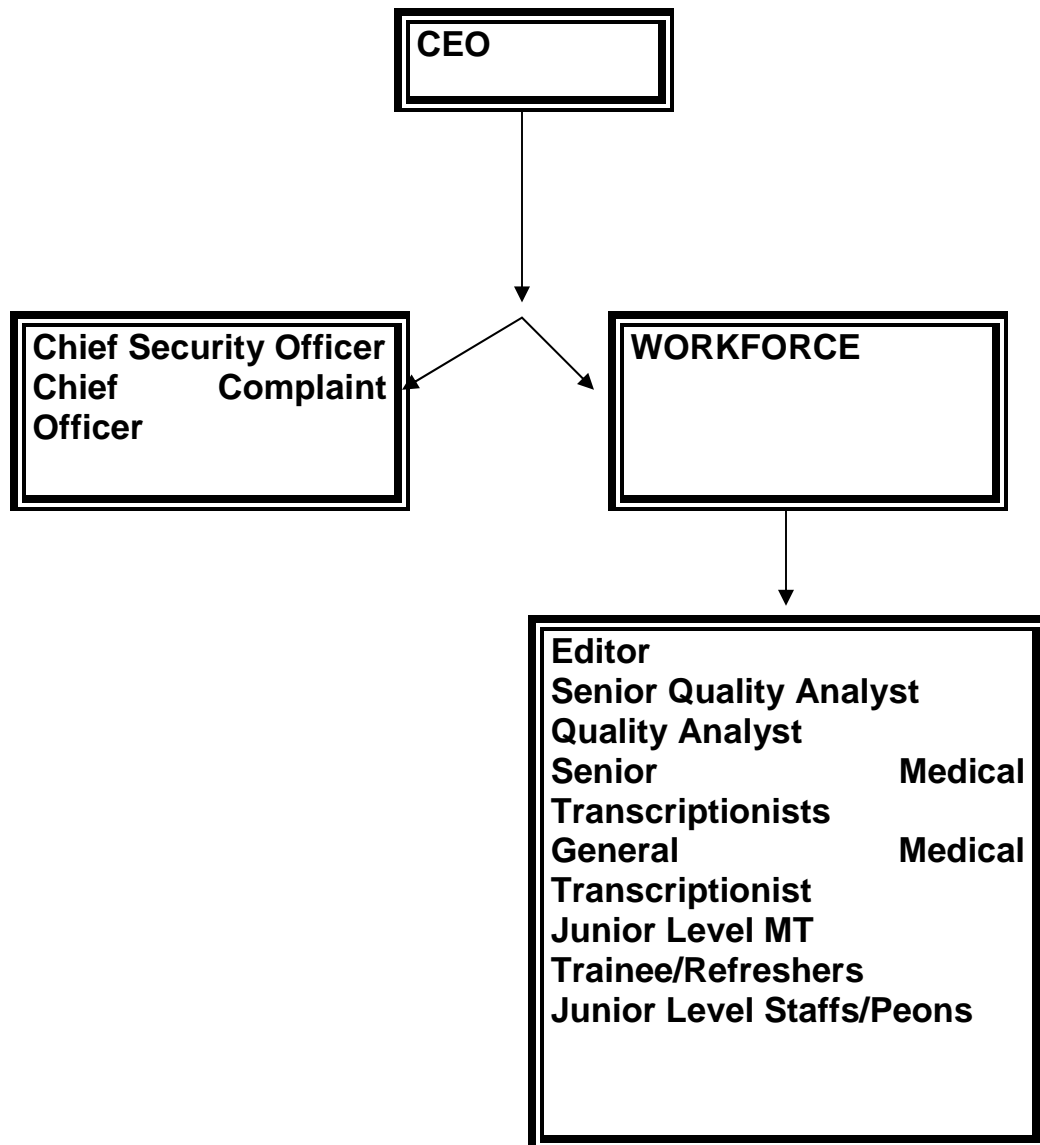

Fig. Organization structure

## 2.	DFD of purposed new working system of Medical Transcription office:

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┌─────────────┐                              ┌─────────────┐
│ Miracle     │──────────────────────────────│ Upload      │
│ Technocraft.│                              │ the final   │
│ Server      │                              │ version     │
│             │                              │ file        │
└─────────────┘                              │ from        │
      │  ▲ ↘                                  │ network     │
      │  │   ↘                                └─────────────┘
      ▼  │     ↘              │                      ▲
┌─────────────┐   ↘          ▼                       │
│ Download    │     ↘                          ┌─────────────┐
│ voice       │       ↘                        │ Editor      │
│ files   and │                                │ lastly      │
│ place    in │                                │ checks      │
│ the         │                                │ the report  │
│ Network     │         ┌─────────────┐        └─────────────┘
└─────────────┘         │ Out-        │
      │                 │ sourcing    │
      ▼                 │ company in  │
┌─────────────┐         │ USA         │
│ Prepares    │         └─────────────┘
│ Worksheet   │
│             │                                       ▲
└─────────────┘                                       │
      │
      ▼
┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ MT  type    │─────▶│ Typed       │─────▶│ QA          │
│ those       │      │ report      │      │ checks      │
│ reports     │      │ placed in   │      │ those       │
│             │      │ network     │      │ typed       │
└─────────────┘      └─────────────┘      │ reports     │
                                          └─────────────┘
```
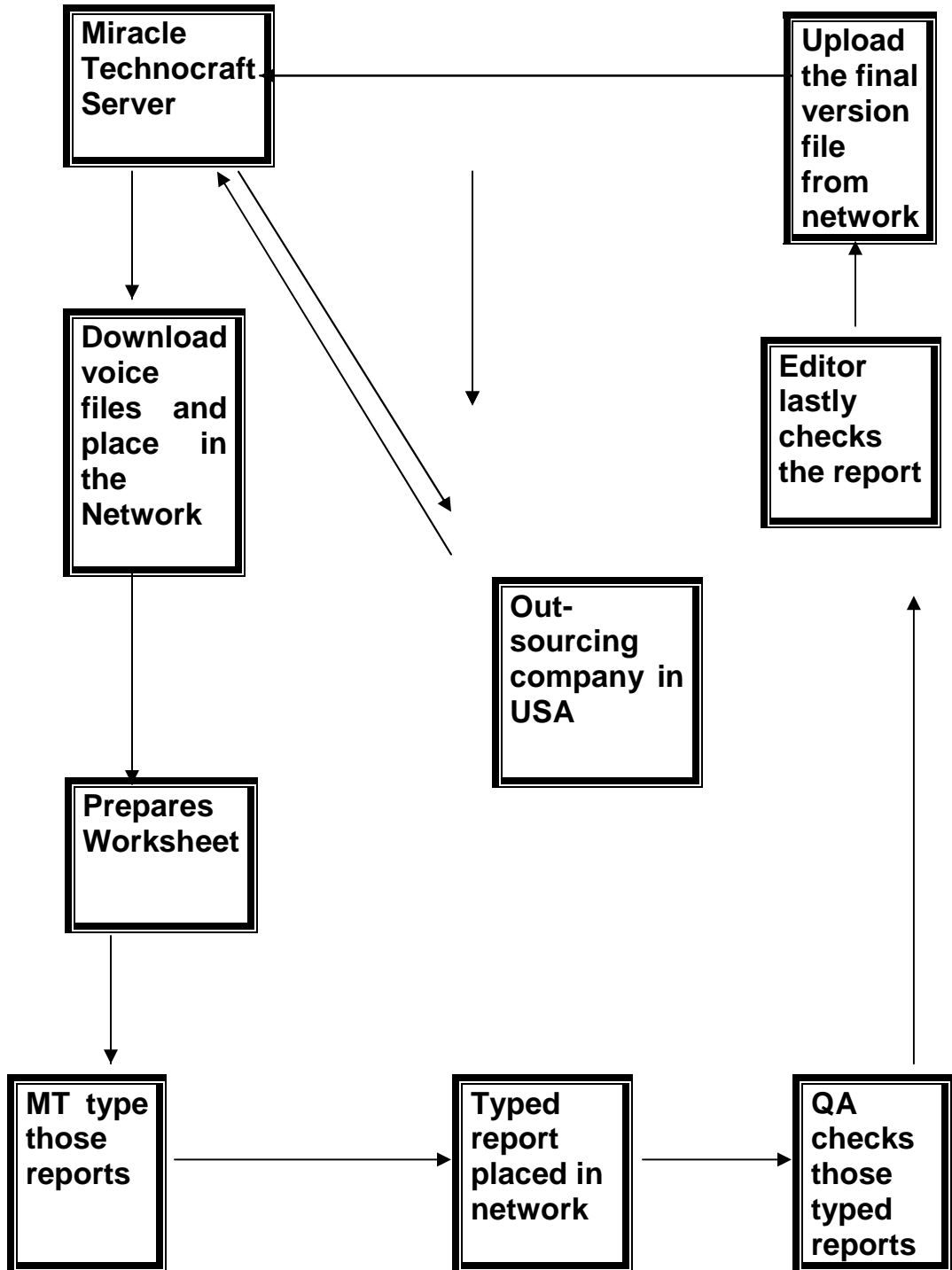
Fig. Process of work

4.11   JUSTIFICATION OF NEW SYSTEM:

As discussed above, the new system's main strength is the absence of middleman. There exist a direct approach in between the work providers and workers. This will ultimately benefit both the parties. This has been discussed above.

The MIS serves to be beneficial in the Medical Transcription field. The main objective of MIS is the proper utilization of data. The data are to be collected in a proper way in a proper place so when needed to retrieve them for any specific utilization purpose, they should be available instantly. This concept benefits a lot in Medical Transcription field. In depth, the reports that are made by the medical transcriptions are to be kept in a single place categorically, and when needed could be easily found with the search engines or even without it. If the same patient comes again i.e. for followup, the old files of the same patient are to be found out if the new report is typed on the old file then many timesaving could be made. Generally, the physical exam part and the demo part are almost same. The difference lies in the patient's lab part, medications could also some vary, but the history part is almost the same. This will help medical transcriptions to understand the patient's disease by looking in the old reports. This will ultimately save the time to process the report and thus will benefit the company's overall production.

This is just a small explanation of how MIS could benefit the medical transcription field. There are many other points that explain how the proper management of data or MIS could help the medical transcriptionists.

1.   Speed:

The new approach system also supports the MIS being used in the Medical transcription field. The overall benefit comes in form of speed or pace of the work and saving the time and effort. With less effort, medical transcriptionists could achieve more with the help of proper MIS. This justifies the MIS use in MT.

2.   Accuracy:

Since there will be previous old records available with the help of proper MIS, the new made reports becomes more accurate with these.   Since there will be a lot of references available, this will ultimate help in improving the accuracy and quality of the report.

3.   Performance:

The other main benefit of MIS usage comes in a form of easy performance.   The performance factor is guided by the proper storage of the data and proper reutilization of the data.   So, for better performance, better use of MIS is to be done.

4.12 COST BENEFIT ANALYSIS AND FEASIBILITY ANALYSIS OF NEW SYSTEM:

The analysis of the cost of proper MIS building, its benefit over the cost in the given period of time, and its feasibility is discussed here in this part.

Cost Benefit Analysis:

First of all let us concentrate on cost of usage of MIS. In a Medical Transcription Company, the appropriate infrastructure is already present. Without appropriate infrastructure, one cannot think of starting up a medical transcription company. The infrastructure remains the same if one uses MIS or not. MIS deals with just proper placement of data so that they can be retrieved whenever needed without much of effort and time wastage. The cost of adding up MIS system is very minimum. No more infrastructures need to be added. The only thing that needs to be added for a proper usage of MIS is some addition of software and mostly the placement of data in a proper way. The storage capacity of the system is to be added up, but there is no need to add up new infrastructures or so like. The cost added for the proper MIS usage is very minimum in the Medial Transcription industry whereas the benefit obtained from the proper usage of MIS can be far more in greater when compared to the cost expensed in building out a new and properly arranged MIS system.

The proper arrangement of data can be on the following ways:

1. **Datewise:** The data are arranged in datewise way. First done files in previous date appears first and later on the new done files.
2. **Sizewise:** The big files comes first and the files with the small size comes at the last.
3. **On the basis of Use:** The files are placed on the basis of their usage. The most used files come in first and least used files on the last.
4. **Categorically:** The other important way to preserve or arrange the files is the categorically arrangement. The category may be of the doctors, or according to the disease, or on the basis of the templates used, or countrywise etc. It depends upon the nature of the files.

The cost that needs to be spent for the MIS buildup depends upon the size of the Medical Transcription Company and the modes of use of MIS. The big company, the more the data, the more place to store the data, the more effective search engines and vice versa. So as per our study is concentrated on Miracle Technocraft, there are 15 personal involved each with one computer so the store capacity of the 15 computers can be 80 Gb each totaling 1200 Gb. This is appropriate to store around 1 Mb of document file per day. It will take a very very long time to fill up the storing capacity. The prompt search engines like yahoo desktop search, google search etc can provide a prompt search for the needed files in time. So as per our calculation, much more benefit can be obtained with a low cost for the proper MIS usage ultimately giving in prompt searching and more efficient work performance. On the cost and benefit analysis, we can conclude from the above estimation that cost to benefit ratio is very high, i.e. more benefit can be achieved with a very little cost expenses. A method for learning about a complex instance, based on a comprehensive understanding of that instance, obtained by extensive description and analysis of the instance, taken as a whole and in its context.

Feasibility Analysis of New System:

A feasibility study is the study of the applicability or practicability of a proposed action or plan. The analysis of the feasibility study is termed as feasibility analysis.

For conducting a feasibility study, a convenient sample is needed. A sample for which cases are selected only on the basis of feasibility or ease of data collection, this type of sample is rarely useful in evaluation and is usually hazardous. An evaluability assessment is a systematic process used to determine the feasibility of a program evaluation. It also helps determine whether conducting a program evaluation will provide useful information that will help improve the management of a program and its overall performance. So we need to have evaluability evaluation first before having a feasibility test.

Now let us start our feasibility test with a sample of 2 Medical Transcriptionist taken from the Miracle Technocraft. So as per our case study of Miracle technocraft we can move forward with the feasibility test. The method for learning about a complex instance, based on a comprehensive understanding of that instance, obtained by extensive description and analysis of the instance, taken as a whole and in its context is termed as case study.

We move forward with 2 MT for the purpose of feasibility study with new system and cost benefit analysis to prove our new system works better than the existing one.

Calculation:

In the existing system:

Salary of 2 MTs given: Rs. 12000, i.e. Rs. 6000 each per month, daily Rs. 200 for a MT.

Working hours per day: 6 hours.

No of reports made per day in 6-hour shift per MT: 25 reports in average of a month.

So estimated amount given for preparing 1 report: Salary per day/no of reports that is Rs.200/25 = Rs.8

After initiation of new system:

Salary of 2 MTs given: Rs. 12000, i.e. Rs. 6000 each., daily Rs. 200 per MT.

Working hours per day: 6 hours.

Cost of adding up more capacity search engines and storage capacity: Rs. 2500 per PC, i.e Rs. 5000 in two PC.

Reports prepared after application of new system: 40 reports on average (one month).

Estimated amount given for preparing of 1 report: Salary per day/no of reports that is Rs.200/40 = Rs. 5.

Profit made by the company after implication of new system per report: Rs 8–Rs.5=Rs.3

No of report prepared by 2 MTs monthly after new system applied: 1200 each, total reports 2400 reports.

Profit obtained by the company on reports prepared by the 2 MTs in one month period of time: 2400 * 3 = Rs. 7200.

Profit increased yearly: Rs. 7200 * 12 months = Rs. 86,400.

Thus the amount spend for better management of MIS Rs. 5000 for two MTs can be earned in a period of less than one month from the starting of new system. Overall income of the company is increased as more work can be produced with the same resources just with a little more effort of management of MIS.

Here, the infrastructure almost remains the same. Just a little invest in making more effective MIS and proper utilization of the MIS makes more income to the company with overall increase in the company's income. More work can be done with the same resources just with slight implication of MIS. The feasibility study done above with sample of 2 MTs of Miracle Technocraft proves it.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION:

Now, we are at the last part of our thesis, which is conclusion. Now, we need to conclude our study in this part. The point-wise conclusion can be made on this thesis that is presented as follows:

1. Medical Transcription work is growing day by day. It involves in-house and outsourcing working methods. In in-house the work provider heir some staffs and make all the work done in the office itself. On outsourcing, the work are given to other parties to complete and will pay for the work done. Generally outsourcing involves a highly developed countries work being given to a low developed country to be done. There will be time factor as well as labor cost factor, as the labor costs in the underdeveloped or developing countries are much less than that of a developed country.

2. After developing a simple idea of medical transcription work, we go to another conclusion that is with the middleman. Generally there are some middlemans involved in between the work provider and workers. The middleman may be a big company, or a group of person, dealer, etc who can take work and distribute. This creates a lot of problem to both the work providers and workers as well. So our thesis is concentrated on how to eliminate them. We have discussed in above the ways of getting rid of the middleman factor, the benefits to both the parties after getting rid of the middleman etc.

3. There should be proper coordination between the work provider and the workers. Lack of proper coordination is also because of the presence of middleman. So, our thesis paper suggests avoidance of middleman in order to have direct approach between the work providers and workers.

4. Payment is another important factor. Payment security needs to be made. As there is lack of payment security in the existing system, there are lots of frauds and other bad things seen. With lack of appropriate paperwork before starting the work, and other things like the legal validity of the paperwork should be made before starting with the work. This is one of the method to ensure the payment. On a long run, both the parties would be benefited from a proper payment mechanism. Such type of fraud organizations need to be pointed out and prepare a blacklist from them so that only the good companies get encouragement for the proper business.

5. Other factors such as cultural, intercontinental understanding, etc should be made both by the workers and work providers. Because of the cultural gap, or lack of ability to understand ones others culture many problems might arise resulting in the lack of performance, motivation etc, thus ultimately affecting the working environment. Holidays need to be created on behalf of both the parties. Only the main holidays are to be identified and should be proceeded accordingly. Main holidays of both the parties need to be taken care of, so that the both the parties feels motivated.

These are some of the major conclusions pinpointed on the basis of our studies. Our study focuses on the MIS used in Medical Transcription. With the help of proper MIS management, we can have more benefit in the medical transcription business. We discussed about the existing system and also developed a new system excluding the main drawback of the existing system. Some recommendations were also made regarding the new system and the things that need to be repaired in the existing system. Then, at last, on conclusion we concluded with some major points on which our thesis paper was concentrated and we made a five-point conclusion of our thesis in which a new system could be made focused upon.

Finally, we can conclude that use of MIS in the medical transcription filed is needed and is beneficial. Thus, we need to make aware of proper MIS usage in the medical transcription companies in order to have better performance and better utilization of the techniques and manpower. This will help in overall production of the Medical Transcription companies.

5.2   RECOMMENDATIONS:

After knowing well about the new system and drawbacks of old or existing system, as per this thesis paper, we recommended the use of new system looking at the benefits of new system to old system. I believe the new system will benefit all the parties involved in the system.

The major recommendations along the causes that we can draw out are illustrated as below. First of all, we need to identify the challenges in front of us.

Identification of Challenges

1. Cost-Containment creates downward price pressure thus forcing low margins.
2. Lack of Timely Information Exchange.
3. New technologies with increased research and development budgets.
4. Failure to update changing packaging regulations hampers growth.
5. Growing environmental awareness to address disposal and re-cycling issues.
6. Ever-changing end user requirements exert tremendous pressure on manufacturing and resin suppliers to keep pace
7. Tough regulatory barriers increase time to market and new product introduction.
8. Increasing demand for better products forces companies to broaden product portfolio in a short time

The other factors that we should consider for appropriate recommendation are as:
1. Market Age
2. Revenues
3. Potential Revenues
4. Base Year Market Growth Rate
5. Forecast Period Market Growth Rate
6. Forecast Period End-User Market Growth Rate
7. Saturation
8. Price Sensitivity
9. Competitors
10. Degree of Competitiveness
11. Degree of Technical Change
12. Customer Satisfaction
13. Customer Loyalty
14. Market Concentration

The above-shown are some of the points to be considered before making an appropriate recommendation for any of the studies. The final recommendations are as follows:

1. Direct Approach:

The most important recommendations made in this thesis paper is the direct approach method. Direct approach consists of a direct linkage between the clients and the workers, i.e. on view of direct approach, the workers or company who takes the work from the United States have direct relationship and access with the United States office. This will help in better performance and better understanding in between the two parties.

With the direct approach concept, the middleman's commission is avoided thus making the benefit to both the work providers and workers. The work provider can have more desirable result from the workers and workers on the other hand should not face more of irregularities or mismanagement problems. Workers and work providers are both much secured than with the involved middleman.

Thus, the main recommendation made in this paper is the direct approach.

2. Appropriate Training:

The other important recommendation consists of appropriate training. There are much of problems occurred due to low trained people involved in this field. The fully trained and equipped personnel and company are to be developed for a better work quality. The training here does not involve the training to the staffs or workers but it includes proper training to all the parties involved.

- Workers need to have appropriate knowledge and skills developed for the work with the help of proper training, both theory and practical. Practical not only involves the practical knowledge but also involves internship like activities or OJT (On the Job Training), which is getting popular now a days.
- On the other hand there needs to be appropriate training for the work providers as well. The way they work affects workers quite a lot. For example if a doctor dictates very roughly then a worker cannot type all the things exactly as the doctor likes, as the worker do not understand the doctor's speech. The recording environment should be clear, soundproof dictation room without pets and children.

3. Better Understanding and Coordination:

The other important recommendation made is regarding the misunderstanding between the client and workers. For better understanding of each other the culture factor plays a great role. Since the culture of United States and countries like Nepal are totally different, there should be willingness to know each other's culture in both the parties. Culturally, there are many holidays in Nepal than that of United States, but it is not good to ask for holidays according to the Nepali calendar. But on the other hand, the parties of United States should also find out what the most important cultural holidays of Nepal are and try to coordinate with the Nepali parties on that day. Because of the middleman present in today's Medical Transcription profession, this is totally neglected. But if the direct approach is applied, then those factors will get considerations resulting in better motivation and better relationships.

4. Easily Accessible Bank Guaranty:

The other important drawback arises in security of payment. Because of the different laws in various nations it is always difficult to find justice in other country for any cheating in the business etc. So an easily accessible bank guaranty for work will serve as a curtail factor for both the parties. The fraud companies/people would be wiped out if there would be any kind of bank guaranty for payment for the work done which will benefit both the parties.

5. Contract:

The other important recommendations made on the basis of this study is the appropriate contract. The contract should be in the way that if anyone who breaks the contract can be punished in their country. Many companies are vanishing from the market in lack of appropriate contract. Contact provides a legal strength to the parties and also reminds that if the things are not done as per the contract, they can be penalized. So, contract is one of the major factors in the Medical Transcription business.

These are some of the major recommendations made with regard to this thesis paper. I believe this will prove a milestone in developing the medical transcription field in Nepal, if these recommendations are taken in account seriously by the Medical Transcriptionist, Service provider, and governmental bodies as well.

Bibliography

[1] Arkad K, Ahlfeldt H, Gao X, Shashavar N, Wigertz O, Jean FC, Degoulet P. Integration of data driven decision support into the HELIOS environment. *Int J Bio-Medical Comp* 34, 195-205 (1994).

[2] Clayton PD, Pryor TA, Wigertz O, Hripcsak G. Issues and structures for sharing medical knowledge among decision making systems. *Proc 13th SCAMC,* 116-121 (1989).

[3] Daltek Laboratory Data System, version 1, Daltek AB, Borlange, Sweden (1989).

[4] Gao X, Shahsavar N, Arkad K, Ahlfeldt H, Hripcsak G, Wigertz O. Design and function of medical knowledge editors for the Arden Syntax. *Proc 7th MEDINFO92,* 472-477 (1992).

[5] Hripcsak G, Cimino J, Johnson S, Clayton P. The Columbia-Presbyterian Medical Center decision-support system as a model for implementing the Arden Syntax. *Proc 15th SCAMC*, 248-252 (1991).

[6] Jean F-C, Thelliez T, Mascart J-J and Degoulet P. Object-oriented information system in the HELIOS medical software engineering environment. *Proc 16th SCAMC*, 595-599 (1992).

[7] Johansson B and Bergqvist Y. Integrating decision support based on the Arden.

[8] National daily newspapers (mainly Himalayan Post), various course books of MIS and DSS, searched from google.com and other various search sites for related materials.

[9] Van Bemmel JH. Criteria for the acceptance of decision-support systems by clinicians; lessons from ECG interpretation system. *Proc. Artificial Intelligence in Medicine* (ISO Press), 7-10 (1993).

[10] Wigertz O, Shashavar N, Gill H, Gao X, Jönsson K-A, Arkad K, Ohlsson P, Åhlfeldt H. Knowledge representation for an anticoagulant therapy advisor. *Proc MIE93* (Springer Verlag), 99-104 (1993).