# CHAPTER ONE

# INTRODUCTION

## Introduction

Marketers today face different challenges when it comes to managing, optimizing and integrating the delivery of products across many marketing channels. In addition, it is very tedious for the managers to measure the effectiveness their employees marketing activities which involve a lot of cost.

Distribution and Marketing module allows sales managers to easily manage their multi-layer sales channel enabling them to monitor the physical distribution of their products and track the stock and sales. In addition, it allows management of the Company’s sales representatives/agents. Hence it is a core solution for the business for managing its marketing efficiency. This system focuses on improving the traditional way of keeping sales records, tracking sales person activities, routes planning is no longer effective with growing global technological trends.

## Scope of Distribution and Marketing

This project is to provide a portal to organize and manage salesperson or marketing person and to reduce the cost of transactions and smoothen the flow of goods and services. The module’s data gathered in database can be used for various business reporting and intelligence purposes. The module is efficient in real time tracking, monitoring physical distribution of the product and services, supply change management and marketing management that helps business grow tremendously.

## Limitation of Distribution and Marketing

Some of its limitations are mentioned below:

* Mobile App is android based and not available on App Store.
* Need of extra cost and manpower for system implementation, server and web hosting.
* Additional infrastructures like mobile devices and compatible laptops are needed

## Background

Distribution and Marketing (D&M) is the module that provides complete dispatching and monitoring of the goods and services offered by the company. The module consists of web portal and mobile app; together they work to give well-round platform to carry out distributing and marketing of the goods.

The mobile app is mainly designed to be carried out by the marketing person / sales person. And the web portal or website is designed to configure the setups and view the reports generated from the data feeding of mobile app. To simply say, salesperson goes to market and entry data to the mobile application, which then is stored in database schema, and the web portal access that data and represents them in reports and charts. Additionally, the web portal user or administrator can assign routes along with outlets and distributors for the mobile app users. Upon assigning the routes (which is assigned daily, weekly, monthly, yearly or so on) the users have clear destination and target to complete daily or as specified. And all the activity of the users from attendance to order placement is monitored from the web application.

## Problem Statement

The main reason behind the development of this project is the problems faced by sales managers because of shortage of time, inconvenience and inaccessibility. The main problems that sales person go through are as follows:

* No data or database of the employee and distribution activity
* Inconvenience of tracking the stock in the distributors and in the retailers.
* Difficulty in sales orders management, storage and tracking.
* Problem in scheduling effective routes to sales and marketing person.
* Inaccessibility of tracking stock of competitive items and services
* Difficulty in running market surveys and analysis.
* Lack of proper evaluation of sales person performance and target completion.

## Objective of Project

The main objectives of this module are as follows:Use to and verbs actions

* Proper data storage in database
* Employees, distributors, outlets and routes management
* Real time employee location tracking
* Monitor sales activities and Streamline order processing
* Sales person daily activity evaluation
* Outlets and distributors information management
* Effective surveys and schemes execution

## Motivation

The improvement in the traditional way of retrieving and inserting the data collected from marketing team is the main moto of D & M. It also focuses on the safety and accuracy of the data in database. Likewise, the D & M module is based on the sales and marketing that was plus point to learn about how the sales and distribution works in large organizations.

Distribution and marketing systems are critical components of any successful business strategy, and they play a vital role in helping companies to achieve their growth and profitability goals.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Literature Review

Distribution entails making a product available for purchase by dispersing it through the market. It involves delivery of the products across multi-layer marketing channel. It has some major channels like manufacturer, distributor/dealer, wholesaler, retailer and customers.

Marketing is the process of bringing a product to market. Channel management has become one of the most important components of a firm's competitive strategy, with mistakes often costing companies millions--and channel managers their careers.

The Manager's Guide to Distribution Channels provides managers and decision makers with proven tools and go-to-market strategies for refining channel strategies and managing distribution relationships. Self-assessment tools combine with real-world cases and examples to give managers a no theoretical, balanced blend of thought-provoking insights and hands-on tactics [1]

#### 2.1.1 Existing Systems:

**2.1.1.1 CloudSuite Distribution Enterprise:**

CloudSuite Distribution is a comprehensive, scalable cloud solution designed for large, global wholesale distributors who are focused on growth, customer engagement, and have demands for extended services. It’s a multisite, multi-company, multi-currency, and multi-language solution with capabilities that encompass everything from inventory and warehouse management to financials, multi-channel sales orders, purchasing, value add, and more. [2]

**2.1.1.2 Microsoft Dynamics business management software:**

It provides insight into the operational and supply-chain needs of distribution and logistics companies. Queue Associates, a Microsoft Dynamics Gold Partner, delivers complete solutions to distribution enterprises surrounding the Microsoft Dynamics and Microsoft Dynamics 365 Suites. [3]

Marketing is focused on driving demand for and adoption of a product among existing customers. It’s focused on the steps people take to purchase your product so product marketers can build campaigns to support this work. Product marketing is about understanding a specific product’s audience on a deep level and developing that product’s positioning and messaging to appeal campaigns to support this work. Product marketing is about understanding a specific product’s audience on a deep level and developing that product’s positioning and messaging to appeal to that audience. It covers the launch and execution side of a product in addition to the marketing strategy for the product — which is why the work of a product marketer lies at the center of a business’s marketing, sales, and product teams. [4]

**2.1.1.3 SAP Business One:**

In 1972, five entrepreneurs in Germany (Dietmar Hopp, Hasso Plattner, Hans-Werner Hector, Klaus Tschira, and Claus Wellenreuther) had a vision for the business potential of technology and was founded in 1972, the company was initially called System Analysis Program Development (Systemanalyse Programmentwicklung), later abbreviated to SAP. Since then, it has grown from a small, five-person endeavor to a multinational enterprise headquartered in Walldorf, Germany, with more than 105,000 employees worldwide.

With the introduction of its original SAP R/2 and SAP R/3 software, SAP established the global standard for enterprise resource planning (ERP) software. Now, SAP S/4HANA takes ERP to the next level by using the power of in-memory computing to process vast amounts of data, and to support advanced technologies such as artificial intelligence (AI) and machine learning. [5]

**2.1.1.4 Neo Software:**

Neo Software is a company that provides a variety of services to help businesses in any industry implement and optimize their ERP systems. These services include needs assessment, process re-engineering, ongoing support and maintenance, upgrades and improvements, consulting and advisory services, and project management. Our team members have been working together for over 20 years, and we have a long history of experience and expertise in software development and implementation. We've done more than 500+ software development projects so far, and are proud to be counted among some of the best software development companies in Nepal. [6]

**2.1.1.5 AMSOFT Technologies:**

AMSOFT Technologies is an IT Consulting and Software Company serving in IT related areas since its incorporation for more than 12 years. The Company was founded by a team of Experts and Engineers specializing in System Analysis, Software, Web Application Development, Web Services and IT Consulting Services. The Company is serving businesses of all sizes with Custom Web Site Design, Web Application Development, Content Management Website Design/Dynamic Website Design, E-Commerce Web Development, Open-Source Customization, Search Engine Optimization and Customized Software Development, Mobile Apps Development, System Administration and Network Support Services. [7]

Here in Nepal ERP solutions software and companies that deals with distribution module as well are Synergy ERP, Smtech Technology, meronetwork, Fact Nepal, Mitra ERP, Raindrop ERP, HiTech Swastik, CNC Nepal Tally 9, Thakralone, Sage Wholesale Distribution ERP, HARATI Product Distributor, etc. The trend on implementing ERP and modules like Distribution is slowly growing with the vision of its advantages in company business and success in now on growing technological era.

# CHAPTER THREE

# SYSTEM ANALYSIS

The systems analysis process focused on observing D&M module for troubleshooting the issues as well as developing the module both on functional and design.

### 3.1 Requirement Collection:

It was analyzed according to the objective and need of the project.

### 3.2 System Requirement

Requirement analysis is mainly categorized into two types:

#### 3.2.1 Functional Requirement

A functional requirement is something a system must do. The basic functional requirements of our module are:

* The module should be able to assign routes to the salespersons.
* The module should provide various reports of daily route activities of users.
* The database should be reliable and must keep records of system activities.

#### 3.2.2 Non-Functional Requirements

Non-functional requirements define how the system should be. It covers all the remaining requirements which are not covered by functional requirements.

**3.2.2.1 Performance Requirements**

* The system and database should be reliable and should be able to assign routes and generates reports based on user activities.
* The web application should be user friendly to search for various reports and charts.
* The web application should give accurate location of app users on the map.

**3.3.2.2 Safety Requirements**

* The database backup should be scheduled daily.
* Mobile & web app users must be authenticated.
* Offline data should be stored and synchronized to database after getting online.

**3.3.2.3 User Interface Requirements**

* Mobile and web interface must be user friendly.
* Interface should be easy to access by authorized users.
* Mobile and web interface should be understandable.

### 3.3 Feasibility Study

Feasibility study is a set of system proposal according to its workability, ability to meet needs and effective use of the resources.

#### 3.3.1 Technical Feasibility

The hardware requirement for web application is basic server with 4GB Ram, 200GB ROM with 5mbps of internet. And normal smart phone works fine for mobile application. Oracle 11g enterprise edition database is easy to use. It means the system is technically feasible.

#### 3.3.2 Economic Feasibility

The server can be hosted in the cloud thus removing extra cost for network administrator and maintenance cost. And normal costing mobile phone can be used for application. And Oracle database is free to use. The module is economically feasible to host it and extend as per need.

#### 3.3.3 Legal Feasibility

The issues such as privacy, nepotism, and accountability are not violated in Distribution and marketing module. The location data, gallery access and personal data are recorded only for the company use and agreed terms and conditions. There is no breaching or misuse of the data so it is legally feasible.

### 3.3.4 Operational Feasibility

It makes operational activities easier by providing GUI based interface for managers to view reports and charts of the sales flow and employee’s performance. Thus, the module makes highly feasible throughout its operational period.

## 3.4 Data model of the System (E-R diagram)

The logical structure of the database is illustrated in the E-R diagram. It shows the relationship among the entity sets stored in a database. An entity in this context is a component of data.

## 3.5 Process Model of the System

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system.

#### 3.5.1 LEVEL-0 DFD

# CHAPTER FOUR

# SYSTEM DESIGN

System design is to bring down the knowledge of requirements and analysis to design the software product. The design of the application must address the requirements set in the initial stage ofthe application development.

## 4.1 Architecture Design of Distribution and Marketing

The architectural design of the Distribution and Marketing is as shown below which describes the view, models, behavior, and structure of the overall system. The system follows 3-tier architecture.

## 4.2 Database Design

Database design reflects the tables and schema that stores the information of every section of the website and mobile application.

# CHAPTER FOUR

# IMPLEMENTATION

## 4.1 Front End Tool

Bootstrap, HTML 5, CSS, JS were used for front end designing purpose. HTML was used to create structure of the application. CSS was used to make HTML elements more stylish. JavaScript was used to make more interactive forms, images and to write dynamic page content.

## 4.2 Back End Tools

### 4.2.1 MySQL

### 4.2.2 JAVA

### 4.2.3 ANDROID STUDIO

For the mobile application development JAVA language was used in Android Studio IDE.

## 5.3 Development Methodology

The development methodology is based on the spiral model for flexibility and interactivity into the development process. In this spiral methodology there is planning testing, coding and deployment of D&M module in customer site. It is taken because the project is usually large and frequent changes are done by clients on the system.

# CHAPTER SIX

# CONCLUSION

It is a great opportunity and a challenge to work for this project. However, while working in the organization the author acquired the most essential experience of real-world scenario and team work along with many other beneficial experiences. The author learns how to implement techniques for data structures, advanced databases, research and development while designing and developing the website along with mobile app. The deployment part added bonus skills of customer handling, mass communication. It will give the opportunity to work with the team to have better problem-solving skills.

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