

## Introduction

### 1.1 Introduction

This Chapter provides an introduction to the research. It describe the research background and a brief description about the propose solution. Then, this rese--arch aims and objectives are outline. This chapter concludes with the outline of the remaining chapters.

### 1.2 Background and Motivation

Newspaper is a relatively inexpensive regularly schedule media to written publications with contain essentially news, advertising, current information in politics, business, sports and entertainment [1]. Newspaper industry in Sri Lanka has a proud and prestigious history. It owns publishing news to Sri Lankan society. Sri Lankan newspaper industry plays a very significant role providing information to Sri Lankan Society, even other mass media tools (TV, Radio, Social Media) and technology develops in greater stage till, newspaper demand is high. According to the Central Bank Report of Sri Lanka in year 2013 daily national newspaper circulation is nearly 225,528,000 and weekly national newspaper circulation is nearly 103,572,000 [2].

In Sri Lanka, currently different newspaper publishers published twenty four (24) national newspapers in three main languages and more than seventeen varieties of newspapers which cater for the young and sport, etc; [3]. Therefore, Newspaper industry was highly competitive and capturing the market share is highly challengeable. Due to competition, newspapers need to deliver the market on time. Therefore, Newspaper publisher need to maintain a highly efficient and effective circulation system. Newspaper circulation contain following three processes such as,

- Newspaper issuing
- Newspaper return handling
- Payments handling

Newspaper issuing process is the key in the newspaper circulation. Publishers need to issue right quantity at the right time to the market. Generally, newspapers are distributed through Sales Agents, island wide. These main sales agents distribute newspapers through the sub agents and normal sales. In addition newspaper publishers circulate their newspapers through subscription customers, regional sales executives and normal sellers, etc; Publishers follow different returns policies. Some publishers accept only 10% of returns based on the issues. Other publishers accept 100% returns. Likewise publishers follow different return policies. Payment handling is another important process. Mostly newspaper issue in credit basis for newsagents but publishers accept direct payments from normal sales event. Credit policies also differ from publishers to publishers. Therefore, newspaper publishers need an effective and efficient solution to handle their newspaper circulation process. Circulation System needs to handle some of the following process such as issue records and amounts need to keep under correct customers, delivery records need to be recorded. Print order preparation for each paper, issuing delivery labels, returns paper details need to be recorded in to customer wise. Issuing customer wise and newspaper wise reports (issues and returns), record payment details and maintain outstanding reports customer wise etc; Using this reports, company takes some management steps, decisions effectively.

Newspapers are highly perishable item with a self life of one day, because importance of the news is one day. From time to time, world changes and new information and news arise. Therefore, newspaper distribution is same as the other perishable items. At the sales point, newspapers must be available in a given time. In highly competitive market today, newspaper publishers have rushed to supply information to the readers. If newspapers are not available in right time with right quantity, people move to another publisher's house. Compare to other perishable items, newspaper publishers have full control for print and distribute the newspapers. However, newspapers need to supply each sales point in daily basis. Today most of the Sri Lankan newspapers establishments experience a problem of predication and

forecasting the right number of newspapers to print and distribute among their distribution points. Mostly these issues do not arise in the subscription of customers because they are not changing from time to time but sales agents and other distribution point's sales demand are change. Therefore, forecasting plays a major role. In this scenario forecasting newspaper demand as accurately possible to meet customer requirement with minimum number of returns, without shortage of sales and oversupply. Using accurate forecasting system companies can reduce cost and maximize the profits. By oversupply the newspapers companies incur unnecessary cost on newsprint, printing, delivery, returns handling etc; Due to high returns, company reputation is badly affected. Further, once newspaper shortage occurs customers may move to the competitors as well as it effects company reputation and profitability. Therefore, companies need short term sales forecasting system as well as long term forecasting system. It helps companies to get some management decisions because forecast is the Key point of the business planning and the decision making. Forecasting is difficult in the newspaper industry because sales depend on changes in the society. For example on special days, special events, some marketing action sales may differ, as well as return values change. Therefore, predication is difficult.

Introduce a feasible solution for newspaper circulation and sales forecasting in Sri Lankan newspaper industry is a main target of this project.

### **1.3 Aims and Objectives**

This research project mainly focuses to find out a feasible solution to handle Newspaper Circulation process and develop Newspaper Sales Forecasting solution for Sri Lankan Newspaper Industry.

To achieve these two main objectives, researchers divide the main objectives into the following sub objectives.

- Identify current process of newspaper circulation.
- Identify the issues of current circulation process. Circulation process includes newspaper sales, Newspaper return handling and the payment collections.
- Introduces feasible solution for handle newspaper circulation.
- Identify individual customer's sales, returns, payments and outstanding details.
- Introduces accurate sales forecasting solution and identifying the sales patterns in Sri Lankan newspaper industry,
- Reduced unnecessary cost for newspaper returns and wastage of newspaper printing.

### **1.4 About Solution**

Newspaper Circulation system is a web base solution that developed by using PHP server side scripting language and MySQL relational database management system (RDBMS) use for the system database. WAMP Server is use as web server to run this application. Circulation department staff of the newspaper publication company is main user of this system. In addition management, accounts department, audit department are other users of this system. Mainly this system has four modules such as Newspaper Issue Module, Newspaper Return Module, Payment Module and Newspaper Sales Forecasting Module. In addition this system maintains customer master file that include customer information. In newspaper issue module circulation department staff inputs the newspaper issue details that include customer identification Number, paper name, quantity, issue date and system calculate value of the paper issue itself. Currently company collects returns by monthly basis. Therefore, after newspaper returns received circulation department staff enters

the customer id, return receipt id, paper name, return date, issue month related to the returns, rerun quantity to return module. When receiving the payments circulation department staff input the payment details to the payment module such as customer id, payment amount, payment date. As a results system generate following outputs such as maintains issue records and amounts keep under correct customers, delivery records need to be recorded. Print order preparation for each paper, issuing delivery labels, returns paper details need to be recorded in to customer wise. Issuing customer wise and newspaper wise reports (issues and returns), record payment details and maintains outstanding reports customer wise etc;

Newspaper Sales Forecasting Module based on data mining technologies like preprocessing, classification, clustering and predictions with time series regression techniques. Therefore, this research plan to uses WEKA (Waikato Environment for Knowledge Analysis) data mining software that contains collection of data mining algorithms for forecast the newspaper sales and identifying the various sales patterns. Consider the available data this research planed to forecast the monthly newspaper sales and identified the sales patterns. Currently company maintains monthly newspaper returns quantity. Therefore, daily sales forecasting is not appropriated. Consider of that, this research inputs the data set that include Month wise three year's historical net sales data in each customer/agencies (Different between issue quantity and return quantity). As a result, this research forecast paper wise issue quantity in a month, customer/agency wise issue quantity, District and paper wise issue quantity, agency wise issue quantity within the each city/District as well use of this finding company can identified different sales patterns regards newspaper wise, district wise, city wise and customer wise.

## **1.5 Structure of dissertation**

This Interim Report is organized under main seven chapters. Chapter 2 represents Present Learning of the Newspaper Circulation and Sales Forecasting. Technologies Use for Developing Newspaper Circulation and Sales Forecasting System is discussed in chapter 3. Chapter 4 contains Technologies Use for Developing Newspaper Circulation and Sales Forecasting System. Chapter 5 is representing Approach for Developing Newspaper Circulation and Sales Forecasting System. Implementation Process of Propose Solution discussed in chapter 6 and Chapter 7 consider for assessment of the developed solution and finally chapter 8 represent Conclusion and future works of the project.

## **1.6 Summary**

Newspapers are like a highly perishable item with a shelf life of one day. Because importance of the news is one day, from time to time world changes and new information and news arise. Therefore, at the sales point newspapers must be available in a given time. In other hand publishers need to distribute correct quantity for each seller. Less supply or over supply is effect to the profit of the organization. Therefore, Newspaper publisher need a proper forecasting system. Address above issues, this research project mainly focuses to find out feasible solution for handling Newspaper Circulation process and develop Newspaper Sales Forecasting solution for Sri Lankan Newspaper Industry. Ensure the smooth process this research project developed web based circulation system by using PHP server side scripting languages, MySQL RDBMS and WAMP Server as web server. This system mainly includes newspaper issue module, newspaper return module, and payment module. Newspaper Sales Forecasting Module based on data mining technologies. Therefore, this research plans to uses WEKA (Waikato Environment for Knowledge Analysis) data mining software for sales forecasting. Next chapter is discussed about literatures available in the research area.

