Chapter 18
Data Mining Technology and Sales Productivity Analysis in Malaysia

Jacquline Tham
Management and Science University, Malaysia

S. M. Ferdous Azam
Management and Science University, Malaysia

Ali Khatibi
Management and Science University, Malaysia

ABSTRACT

This chapter focuses on studying data mining technologies and the predictive analysis of product sales for Amway (M). Several parts have been adopted to outline the rationale for the research, which consisted primarily of reading books, journals, and internet articles on data mining and conducting interviews and observations to collect Amway data (M). Following data gathering, a model was constructed to understand the value of results achieved by integrating automation, visual representation, and predictive analysis into business operations. Finally, the author gained a great deal of knowledge about this project once it was completed. The completion of this project was, therefore, a very satisfying and fruitful journey. Generally, to have a better impact, this entire project needs to be polished.

INTRODUCTION

Although coming from a historical technical perspective, it is known that modern information technology has been improved much better than in the past and that it is also the field that is making the most change worldwide (De Silva et al., 2018a; De Silva et al., 2018b; Nikhashemi et al., 2013). Where technology has made it much easier to do, it has also played a crucial role in computer science management, where the method of data collection and arrangement is much simpler than in the past (Bose, 2009). However,

DOI: 10.4018/978-1-7998-8327-2.ch018

it turns out to be difficult to investigate these trends and thus use some of the knowledge in the available data. People are inquisitive about finding facts and awareness. As a result, a new research field called Data Mining has emerged that uses the challenge to create techniques that help people find easy trends in their data (Rygielski, Wang, & Yen, 2002).

In 1976, with just five employees, Amway (M) set up a small office and warehouse facility in jalan ipoh and at that time Amway (M) was one of the pioneers of the direct sale industry. Amway (M) distributes a wide variety of outstanding consumer products, ranging from daily goods, health care, home care, home electronics, auto care, personal care products, and fashion products (Tsai, 2012). The distribution is carried out through a robust network of members and sales centres in Malaysia. Today, with 161,000 core distributor force and RM456 million sales turnover, Amway (M) has become the well-known direct selling firm, forging a household name in Malaysia for Amway. Mining their data is therefore one of the main steps in addressing their challenges in the future (Cabena et al., 1999; Dewi et al., 2019; Pambreni et al., 2019; Tarofder et al., 2017).

Questions regarding the representation of information have long been of concern to many cognitive psychologists. Many experiments on this subject have been carried out. Many theoretical variations have resulted from various kinds of expertise. The distinction that is especially important to data mining is procedural and declarative information. Procedural knowledge is specifically about "knowing how" to do stuff, while in the meantime, declarative knowledge is about "knowing that," about the real world's factual facts. A cookbook, or recipe for preparing a meal, may be referred to as procedural information. It explains the method or how to execute those tasks, or in other words, it illustrates the process of doing something in step-by-step form. Typically, declarative knowledge is used to reflect accurate details, such as the names of all items sold by Amway (M) or the lists of all active customers, etc (Linoff & Berry, 2011; Doa et al., 2019; Maghfuriyah et al., 2019; Nguyen et al., 2019).

The information that you know you know (YKYK) is the simplest case in this matrix. There is actually information that exists in the data set itself, and it is clear to the users that they are aware of it. For example, it is clear and obvious to us that water boils at 100c, and froze at 0c. People know that the earth is round, know that student cannot be late for school; know that airplanes fly from one country to another and etc.

There are many things that can be characterized in this category. In daily lives, people know that they do not know a lot of things. For instance, they know that they do not know how many people die every single day; they know they do not know how many new born every day; they know they do not know the angle of the Earth's rotation on its axis, on its orbit around the sun; and etc.

The types of information that you do not know you know (YDYK) is targeted in exploratory analyses in which there might not be having definite answers about what it is expected to find. There are always the possibilities that new discoveries of interesting information are already contained within a data set though it might not currently being used. In business context, one may not be suspecting that there are some predictable patterns associated with a particular set of investment behaviors, though this may be achievable through the analyses of the existing data.

This is the last of the four cells. There are some important gaps in the data sources of this case. Not having the Meta knowledge of them might lead the users being unaware of the gaps. This is the most vulnerable situation to the system. It in fact, affects all governments as well as corporations throughout the world (Nemati & Barko, 2003; Pathiratne et al., 2018; Rachmawati et al., 2019; Seneviratne et al., 2019; Sudari et al., 2019; Tarofder et al., 2019).