

REVIEW PAPER ON DATA MINING TECHNIQUES IN CRM OF PHARMACEUTICAL INDUSTRY

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ABSTRACT

Data mining is becoming an important and vital part of the healthcare and pharmaceutical industry. Data entry systems are routinely used to determine therapeutic value, disease management, as well as at various levels of clinical research and systematic review. In the end, data entry has been useful in the health insurance sector to reduce fraud and abuse. Many health care companies, hospitals and clinics and pharmaceutical departments use data entry devices because of their high performance. The discovery and quantity of information about the drug can be of great benefit to patients, doctors, pharmacists, healthcare professionals, insurance companies, law enforcement agencies, entrepreneurs, lawyers, pharmaceutical industry, pharmaceutical research industry.

Keywords: CRM For Pharmaceutical Industry, Selection tree algorithm, Data mining

1. INTRODUCTION

Data mining is the process of extracting information from advanced data sources using algorithms and methods for quantum, machine data, and database processing systems (Feelders, Daniels and Holsheimer, 2000). Traditional methods of data analysis often involve manual labor and data analysis, which are slow, expensive and have powerful concepts (Fayyad, Piatsky Shapiro & Smyth, 1996). Data mining, commonly referred to as data mining in a variety of data, enables companies and organizations to make calculated decisions by collecting, assembling, analyzing, and accessing business data. It uses a number of tools such as queries and hardware, diagnostic tools, and DSS support systems.

Recently, many experts predict the growth of the pharmaceutical industry will fall from 12% to a slowdown of 5-6%. (Cospere Nate, 2003) describes this process, which is becoming increasingly popular, has many implications for the pharmaceutical technology industry. In particular, growing slowly requires less cost across the business. Many pharmaceutical technology companies are trying to overcome this challenge by developing innovations that make new drugs "faster and safer." While this is a very powerful goal and, if achieved, will add value to the company, this solution is often overused and underestimated as a barrier to reducing health failure rates. Marketing strategies to increase sales will be more convincing than the goal of reducing costs.

Evidence that technology enables pharmaceutical companies to better target and market specific customer aspects will increase the adoption of this technology and open the door to cost-cutting and improved clinical trial outcomes. The importance of decision support in the delivery of managed healthcare cannot be overstated (Hampshire & Rosborough, 1993). In order to increase the productivity of healthcare professionals, analyze the effectiveness of treatment and continuously improve the care process in order to remain profitable by maintaining the cost and quality of care, a wide range of decision support skills will be required (Dutta and Heda, 2000). Support for health care decisions faces the challenge of complex and diverse forms and tasks of data and knowledge (Prins and Stegwee, 2000; Sheng, 2000), lack of standard concepts related to basic science, high performance requirements and systems (Sheng, 2000). Data processing Scientific research to collect data to understand the safety and efficacy profiles of patient groups. By addressing patient selection issues by determining the most responsive groups, data processing is sure to enter the drug

development market. The data processing framework allows professionals to create custom nodes that can be shared across the company and makes the application attractive to experienced models in the biological information department of pharmaceutical companies.

CRM For Pharmaceutical Industry

Pharmaceutical companies large and small, independent pharmacies and pharmaceutical wholesalers (distributors) are perhaps the most important players in the pharmaceutical industry. Three industry leaders face many challenges. However, there are some common tools that help to meet the needs of the business. These tools are customer management solutions.



Fig. Role of CRM

The role of CRM in the pharmaceutical industry

Evaluation processes, quality systems, data security, information transfer, data collection and documentation processes are often at the heart of the industry. India's pharmaceutical sector is export-oriented and new regulations and competition in various markets around the world are facing challenges. Without proper technical support, it is impossible to try to stay ahead of the competition.

The industry needs better tools to manage operations and communicate with customers, partners, regulators, etc. Custom CRM makes it easy to manage drug research data, correlations, manufacturing techniques, and share them with prospects around the world.

Work-oriented customer management systems are in place for campaign management, employee collaboration, business intelligence, data analytics and also to improve operational efficiency. The key benefits of a CRM system are improved data analysis and reporting, customer service and building strong customer relationships. Pharmaceutical companies can improve sales and marketing processes, purposes and account management activities. In addition to supporting various types of data, the system also ensures compliance with applicable privacy laws in the field of use.

2. Literature Survey

Recently, there have been reports of successful data processing programs in healthcare fraud and abuse detection. Another factor is that the large amount of data generated in healthcare transactions is too complex and large to be processed and analyzed using traditional methods. Data processing can improve decision making by detecting patterns and developments in large amounts of complex data [4]. Such analysis is becoming increasingly necessary as financial pressures have increased the need for healthcare institutions to make decisions based on analysis of clinical and financial data. Insights gained through data processing can impact costs, revenues and operational efficiency while maintaining a high level of maintenance [5].

Data institutions that conduct data studies are better equipped to meet their long-term needs [6]. Data can be of great benefit to healthcare professionals, but it must first be turned into information. Another factor that encourages the use of data processing programs in the health sector is the awareness that data processing can create very useful information for all parties involved in the health sector. For example, data processing programs can help health insurance companies detect fraud and abuse, and healthcare professionals can be assisted in making decisions, such as managing customer relationships.

Data mining can also benefit healthcare professionals, such as hospitals, clinics and doctors and patients, for example by identifying effective treatments and best practices [7,8] Medicare and Medicaid Service Centers have used data learning to develop potential payment systems for rehabilitation in hospitals. inpatient wards [9] Healthcare can benefit greatly from data processing programs. This review is intended to examine relevant data learning programs, understand the relevant methodologies and their potential in the healthcare and pharmaceutical industries.

The term data mining, in its most common usage, is very new. The term has previously been used pejoratively by some statisticians and other specialists to refer to the process of analyzing the same data over and over again until an acceptable result appears [10]. In the early 1990s, a number of forces came together to make data mining a very hot topic. It has subsequently been widely applied in retail, banking and financial services, insurance, marketing and sales and telecommunications. At first, the scientific community was slow to accept data mining. This is at least partly due to marketing promotions and wild claims made by some salespeople and software consultants. However, data mining is now moving into the mainstream of science and engineering. Data mining has matured because of the confluence of three factors. The first is the ability to capture, store, and process large amounts of data inexpensively. The second is advances in database technology that allow stored data to be organized and stored in a way that facilitates quick answers to complex questions. Finally, there have been developments and improvements in analytical methods that have allowed them to be applied effectively to these very large and complex databases.

It is important to remember that data mining is a tool, not a magic wand. You can't just dump your data into a data mining tool and expect it to produce reliable or even valid results. You still need to know your business, understand your data, and understand the analytical methods you use. Furthermore, the patterns found by data mining must be verified in the real world. Just because data mining predicts that a gene will express a particular protein, or that a drug is best sold to a particular group of doctors, doesn't mean this prediction is valid in the real world. You still need to verify the predictions with experiments to confirm the existence of a causal relationship. Health Data Mining Application includes evaluation of treatment effectiveness; health management; customer relationship management; and fraud and abuse detection. Treatment Effectiveness: Data mining applications can be developed to evaluate the effectiveness of medical treatments.

By comparing the causes, symptoms, and courses of treatments, data mining can deliver an analysis of which courses of action prove effective [11]. For example, the outcomes of patient groups treated with different drug regimens for the same disease or condition can be compared to determine which treatments work best and are most cost-effective [12].

Along these lines, United HealthCare has been mining its care record data to find ways to cut costs and deliver better drugs [13]. It has also developed clinical profiles to provide clinicians with information about their practice patterns and to compare them to other physicians and peer-reviewed industry standards. Similarly, data mining can help identify successful standard treatments for specific diseases. In 1999, Florida Hospital launched a clinical best practice initiative with the goal of developing a standard pathway of care across campus, physician, and patient admissions.⁸ Florida Hospital uses data mining in its daily activities [7,14].

Other data mining applications are linking various treatment side effects, compiling common symptoms to aid diagnosis, determining the most effective drug compounds to treat sub-populations that respond differently from the mainstream population to a particular drug, and determining proactive steps that can reduce the risk of suffering. [12].

The Group Health Cooperative categorizes its patient population according to demographic characteristics and medical conditions to determine which group uses the most resources, enabling it to develop programs to help educate this population and prevent or manage their condition [11]. The Group Health Cooperative has been involved in several data mining efforts to provide better healthcare at lower costs. At Seton Medical Center, data mining is used to reduce patient length of stay, avoid clinical complications, develop best practices, improve patient outcomes, and provide information to physicians—all to maintain and improve the quality of healthcare [15]. For example, Blue Cross has implemented data mining initiatives to increase yields and reduce expenses through better disease management. For example, using emergency department and hospitalization claims data, pharmacy records, and physician interviews to identify unknown asthmatics and develop appropriate interventions [11].

3. Problem Statement

Several solutions and technologies require streamlining targeted treatments, reducing side effects, and improving trial rates, including pharmacokinetics, pharmacokinetics, ADMET prognosis, and data entry applications. Pharmacocomosomic drugs are often indicated in the selection of patients in order to get rid of adverse reactions and thus increase the chances of FDA approval. But, with this approach, you are given the opportunity to have less patience, which means you will be able to sell lower. The other commitment to deal with malignancies will allow the company to deal "safely" with FDA approval for minorities who may have relapses or have fewer complications. The disadvantage of this strategy is that the company will distribute equipment and other services that have a negative face, real money is lost after the bad money. However, there is a third way to put a choice mark on patients. In a literature-sponsored study, pharmaceutical companies may try to identify residents who are "over-responsive". This process is not meant to be an important group of people, but it does allow for a larger group of people. This expanded information will enable pharmaceutical manufacturers to gain more market share in this field

4. CONCLUSION

The Book Review of the Data Mining System in the health sector is an early detection and investigation of fraud and abuse. In this area, they include a system for extracting data from a data collection system, identifying different types of health information from health professionals. Other uses of information technology and pharmaceuticals include cost (double price tag) and information exchange between other pharmaceutical companies. However, problems remain. Although data collection systems improve data processing, they are not adhered to. Data mining requires systematic analysis and big data analysis, using tools such as data collection, analysis, classification, and processing to help transform data in a better way, and help pharmaceutical companies

compete with lower costs, and procedures to improve drug discovery and delivery. An in-depth understanding of hidden information and pharmaceutical data is critical to a company's competitive position in organizational decision-making. This article describes the role of data entry in the pharmaceutical industry.

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