

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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Using Clustering Technique To Extracting Customer Identification

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Abstract

Data mining has an efficient ability to extract knowledge from the large databases and provide useful information that can help on making decisions.

This research focused on the how to building model for customer identification, by taking Elwa'd mobile operator as case study and sending their dataset to RapidMiner which considered as effective and strategic tool to support building effective marketing and CRM model in all examined dimensions, in customer (identification, attraction, retention and development).

In this research I used customer identification model which contain a clustering technique by choosing one of the clustering algorithms called k-means that provided by RapidMiner tool.

This Model contains a technique that can help Elwa'd mobile operator which to divide their customers into groups (clusters), this division lead the company to select their customers types (vip, average, ordinary).

المستخلص

التنقيب عن البيانات هو استخلاص المعرفة من قواعد البيانات الضخمة عن طريق إستخدام الأدوات والتقنيات اللازمه

التجميع هي تقنية هامة في التنقيب عن البيانات وتستخدم بشكل واسع في حل الكثير من المشكلات من خلال تقسيم البيانات الى مجموعات مشتركة(عكس التصنيف) في صفات معينة ويتم وضع هذه المجموعات من البيانات شكل اقسام يمكن استخدامها فيما بعد لتصنيف البيانات المستقبلية وتساعد . المستفيد من فهم التركيب الطبيعي للمجموعات من البيانات

وقد ركز هذا البحث في كيفية إستخراج بيانات إدارة علاقة العملاء وتقسيمها الى مجموعات عن طريق تقنية التجميع اخذا شركة الوعد لصيانة وبيع أجهزة المحمول كحالة للبحث حيث تكمن مشكلة هذه الشركة في عدم معرفة وتصنيف الزبائن وقد تم حل هذه المشكله بتقسيم العملاء الى مجموعات تعبر عن مدى تعاملهم مع الشركة وقد استفادت الشركة من هذا التقسيم لتعكس الخدمات التي تقدمها للعميل بناء علي تصنيفه.

وخلص هذا البحث الي تقسيم الزبائن الى ثلاث مجموعات هذه المجموعات تساعد الشركة في تقديم الخدمات الافضل الي زبائها وحتى تتمكن من تحقيق باقي أهداف إدارة علاقة العملاء

(جذب العملاء والحفاظ عليهم والتطوير في الخدمات عن طريق الاخذ بمقترحاتهم).

1.1 Introduction

Customers are the most important asset of an organization. There cannot be any business prospects without satisfied customers who remain loyal and develop their relationship with the organization.

That is why an organization should plan and employ a clear strategy for treating customers.

CRM (Customer Relationship Management) is the strategy for building, managing, and strengthening loyal and long-lasting customer relationships. CRM has two main objectives: Customer retention through customer satisfaction and Customer development through customer insight.

In this research I used the dataset from Elwa'd company which located in Khartoum- Bahri and specialized in a mobile phone marketing and maintain.

1.2 Research Problem

This research focus the reality of applying DM model for CRM with respect to customer identification .

In this research the challenging faced the Elwa'd company how to identify customer into group (vip, Average, Ordinary)to gain solutions about the customers to achieve customers satisfaction.

1.3 Main objective

Using clustering technique into customer relationship management target customer identification through proposed model for Elwa'd company to dived our customer into multiple group .

1.4 Sub Objectives

This study intended to achieve the following objectives:

1. To study the reality of applying customer identification and customer segmentation.
2. To design an effective data mining model that can be used by all relevant end users.
3. To implement the proposed model to identify the target customer?

1.5 Research Methodology

This research used DM model include clustering analysis concept that deal with presence and absence of data in the marketing. And segment this data into groups by use K-means algorithm. To do this, this algorithm was tested in Rapid miner software of version 5.3 software is a collection of open source of many data mining and machine learning algorithms, including pre-processing on data. The results were interpreted and discussed.

1.6 Research Structure

This Research is organized as follows:

- Chapter two takes a look on CRM (customer relationship management) and Data Mining definitions, objectives, benefits and so on.
- Chapter three explains proposal model for customer identification and describes the technique of clustering using K-means algorithm.
- Chapter four talk about the implementation and rapid miner data mining tool, its features and the facilities that provide and use rapid miner to obtain the result.
- chapter five includes the conclusion and recommendation our use of rapid miner to experiments with K-means algorithm to generate multiple cluster with different view from the sample dataset.

