

# A Predictive Analysis for Theme Wedding Planning using Customer Relationship Management Concepts and Data Mining Techniques – Case Study Approach

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**Abstract** - In the recent years, technology enhancement facilitated the customer relationship management in various fields such as marketing, sales, service and support and Information Technology and Information Security [1]. The customer relationship management (CRM) centered towards the building the relationship with the customer by learning the customer behavior. The customer behavior are tracked and traced, and recorded as a customer data using application, infrastructure, and technology [2]. The study is carried out to understand the needs of customers, to understand the inclination and behavior towards theme wedding planning. The concept of customer relationship management is referred to define the customer behavior in theme wedding planning. Customer behavior and trends are derived by analyzing data using data mining techniques to understand the customer behavior and trends in society for theme wedding concept. The result presents the customer behavior and trends towards theme wedding planning in urban India.

**Keywords** – CRM, Wedding Management, Data Mining.

## 1. Introduction

The current CRM business trends have changed drastically [3]. Globalization today has brought one of the business area i.e. Theme wedding management [3, 4, 5, 6]. A wedding is one of the most important events in a human life. The purpose of theme wedding is to provide a pleasant, enduring, memory of that occasion. In view of this, Wedding planner provides preferences for wedding themes to ensure rich experience for the couple as well as for guest. A theme provides complete structure of the ceremony, and is the basis of every activity. The major

challenge is to provide customized wedding theme to the customer according to their preferences. The study shows that it is not much popular in India but the foreign countries have adopted themed wedding management [7]. With the diverse need of the Indian culture, sound economic conditions of individual, commercial commitments are prime factors [8] to prefer the concept of theme wedding. To fulfill the diverse needs of the society, with different economic conditions, people are motivated towards the concept of theme wedding. To manage the vast set of people, the concept of customer relationships management is beneficial for delivering customer value. Ravald defines customer-perceived value as the ratio between perceived benefits and perceived sacrifice. It is also stated as “the consumer’s overall assessment of the utility of a product based on a perception of what is received and what is given” [9]. Firms are concerned with increasing customer value through analysis of the customer lifecycle [10]. The analysis is carried out using the tools and technologies of data warehousing, data mining [11].

There are studies presented that it is more costly to acquire than to retain customers [12]. To measure the customer values, generally, this method Recency, Frequency and Monetary (RFM) methods have been used [13]. As per the Stone’s view, different weights should be assigned to RFM variables depending on the characteristics of the organization.

This research referred the concepts of customer relationship management and its components people,

process and technology [2] and uses data mining concepts in order to find out various factors influencing the demand of wedding packages. It begins with an overview of the concepts of data mining and CRM, followed by a discussion of techniques, and applications of both concepts. Further, it integrates the two concepts and illustrates the relationship, benefits, and inclination and behavior of customer.

## 2. Customer Relationship Management (CRM)

CRM is a strategic approach, concerned with generating improved customer value through the development of right relationships with key customers and customer segments. CRM ties the potential of relationship marketing strategies and IT to produce profitable, long-term relationships with customers and other key stakeholders. CRM provides enhanced opportunities to use data and information to understand customers and build value with them. This requires a cross-functional integration of processes, people, operations, and marketing capabilities that is enabled through information, technology, and applications. (Payne, 2005)

CRM has, implicitly or explicitly, been conceptualized as a (1) process (2) strategy (3) philosophy (4) capability (5) technological tool. Although individual definitions inclined to advocate a precise perspective, it was not uncommon to find conceptualizations that simultaneously stressed multiple perspectives at a time. [14] Peppers and Rogers [15] considered CRM as a business strategy that is to serve as the norm. To reflect the different aspects of CRM, the emphasize is given on holistic view of CRM that encompasses of business, Customer and Technology perspectives to address Customer needs to fulfill by business strategies using technology.

Business perspective, finds CRM as an industrial strategy related to customer demographics and predicting consumer behavior, segmenting customers into customer groups, one-to-one marketing, analyzing purchasing patterns of customers, and basically knowing who the customers are, where they are and what they need [16]. Such analysis is crucial for decision making.

Customer perspective focuses on the interaction of the customer with the organization. A customer usually does not care about the internal business processes of an organization. However, customers are influenced by interaction opportunities with the organization. Interactions include call centers, frontline sales personnel, the Internet, wireless communication channels, email, fax and many others [17]. Such interactions instill loyalty,

and serve as demonstrations of service efficiency and customer friendliness of the organization.

Technology perspective, wherein, organization requires an integrated information system to provide relevant, real-time and accurate information to the stakeholders [2]. Hence, these perspectives help to understand interacting with customers efficiently [18]

## 3. Data Mining and CRM

### 3.1 Definition

“Data mining” is defined as a data search capability that uses statistical algorithms to discover patterns and correlations in data [11]. Data mining is another way to find meaning in the data. Data mining is larger series of steps between business and customers. Data mining helps the business to understand large set of data gathered by CRM systems. It is a set of processes supports a business to develop strategy to build long term, profitable relationships with specific customers [14]. Data mining task fall into three categories, first is Discovery it is the process of finding hidden pattern from data. Second task is predictive Modeling; it is task of deriving pattern from database. Third task is Forensic Analysis is application of pattern to predict future. Data mining techniques such as Association, classification, clustering, forecasting, regression, sequence, discovery and visualization are used for data analysis to deliver customer values [2].

Benefits of Data mining in CRM are as follows [19]

- Resolve customer’s questions with accurate data
- Reduction in duplication of data
- To predict value of each customer and their behavior.
- To provide better service to customer, this results in customer satisfaction.
- Increase in customer and further increases market value.

In this paper, we have conducted survey among diverse cultural society to study adoption of theme wedding in India.

## 4. Theme Wedding Planning System-Case Study

Themed wedding is the coming up trend in urban part of India. Indian culture is very rich and diverse with lots of customs, traditions and festivals. There are many pre and post wedding activities, such as selection of jewelry,

shopping for designer clothes, gift items for guest, and family members, deciding food menu for various wedding events. Normally, wedding planning is done by their parents or typically by their elder ones. Lifestyle changes and disposable income are contributing for trends in wedding ceremonies in India. Traditional weddings are still a hot option for type of weddings people want with theme weddings and destination weddings. Wedding planning came out as a hot trend that customers are engaging in to get marriages done by the wedding planners as it offers better organization and reduces stress. Most of wedding size of the business class families is typically more than 1000 and budget is in crores [20].

Wedding management organizers provide different themed packages to its customer. They are keen to know the frequency of the people interested in their service and they need to change their packages accordingly. The Theme wedding management system is designed from the holistic view of CRM that incorporated the business, Customer and Technology perspectives to address Customer needs. Figure 1 shows, the structure of Theme Wedding Management using CRM.

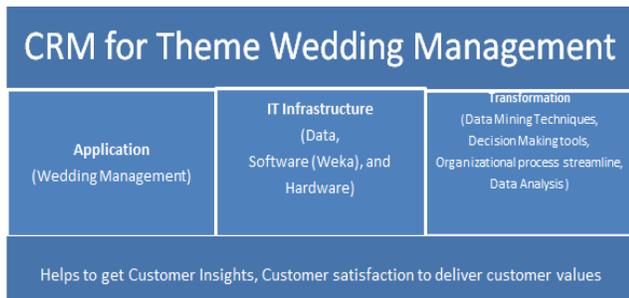


Fig. 1: Structure of Theme wedding Management using CRM

#### 4.1. Study Design

Theme wedding plan is based on the following variables and presented in the form of expression.

Hospitality = {Food caterer, Hotel, Transportation}

Time = {Ceremony time, Reception time}

Stakeholders = {Decorator, Dress designer, DJ, Guests, Family members}

Decoration = {florist, stage design, vehicle design, entry gate design}

Transportation = {Car, Bus}

Budget =  $\sum$  cost [(Stakeholders x rates), (Hospitality x No. of days), Venue, Catering, Decoration, Transportation]

Theme wedding planner = {Time, Budget, Stakeholders, Hospitality, Venue, Decoration}

(Theme wedding Planner) = (catering  $\cap$  Budget  $\cap$  Transportation  $\cap$  Time  $\cap$  Stakeholders  $\cap$  Hospitality  $\cap$  Venue)

Table 1: The Meaning of The Variables

Variables	Meaning in Theme wedding planning Application
Time	Keep an account of ceremony time, transportation and reception time.
Budget	Track all expenses with a bodacious budgeter which includes a complete list of typical wedding costs. Additionally, the planner is able to budget the wedding and create an estimate of segmented costs.
Calendar	Organize TO-DO's with an updated calendar, in which the planner can post a reminder for what he has to over the month.
Contacts(Stak eholders)	Keeping the list of all the contacts such as the florists, hotels, DJ, etc.
Guest List	Create an organized guest list that will keep a track of all the details of all the guests attending the event
Catering	Plan for the food and beverages in an appropriate manner for all the events such as reception, engagement etc.
Hotels	Keep a track of hotel contact information and details of where the guest will be staying and the reservation information.
Transportation	Keep a track of all the transportation contacts, budget and schedule details as well as the agenda for pick-up and drop-off services.

The study is also focused on various elements such as stakeholder identification is in line with the different

activities. There are various identified stakeholders such as Data miner who mines the data and establishes various patterns which helps the wedding planner to make decisions; Domain expert, customer /client and the web developer in the themed wedding management.

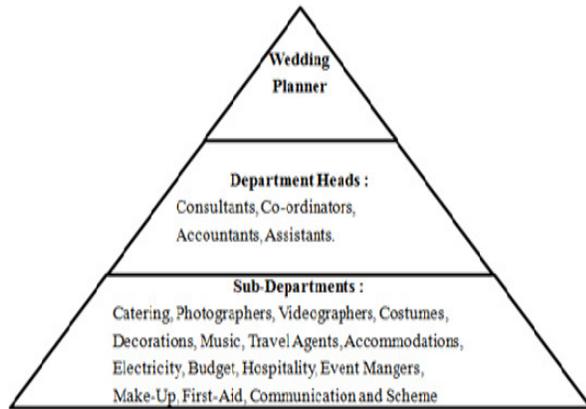


Fig.2 Organization Chart for Themed Wedding Management

Figure 2 represents the Organization Chart for Themed Wedding Management Top level consists of the Wedding Planner; Middle level consists of Department Heads such as consultants, coordinators, accountants and assistants and the Bottom level consists of Sub departments such as Catering, Photographers, Videographers, Costumes, Decorations, Music, Travel Agents, Accommodations, Electricity, Budget, Hospitality, Event Mangers, Make-Up, First-Aid. Based on the variables and organizational structure, the survey was conducted for 50 peoples out of that 60% people have shown an interest in theme wedding planning. Data was collected from wedding couples, common people and other service providers in wedding business. We have considered records of those are “interested” in theme wedding.

#### 4. Data Analysis and Result

The collected data was analyzed using data mining tool (Weka) to understand the interest for theme wedding. This study will help wedding planner to plan and manage

theme wedding by considering traditional interest of customers.

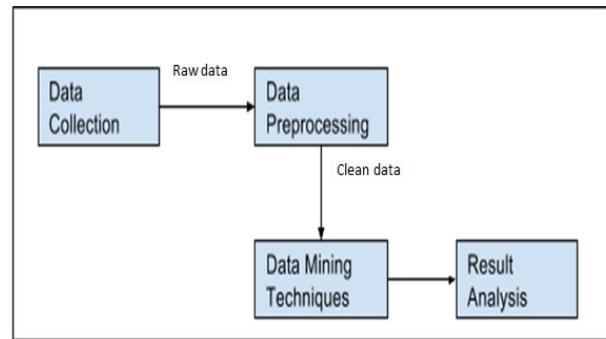


Fig. 3 Steps for Data Analysis

#### 4.2 Data Preprocessing

Data preprocessing deals with detecting and removing errors and inconsistencies, missing values from data in order to improve the quality of data. Data cleaning of raw data is performed to produce clean data. [21]

##### 4.2.1 Data Mining Techniques: Apriori Algorithm

We have apply Apriori algorithm to find best possible rule for formulating preferred wedding packages and importance of each parameter on the wedding planning. A predictive Apriori algorithm searches with an increasing support threshold for the best 'n' rules concerning a support based corrected confidence value. [22]

We have provided them options about hospitality, transport, catering, and number of guest to find more of their interest. Prime factors identified are budget and catering. Hospitality, guest size and time are combinatorial factors with prime factors. According to analysis we found 50% of people's preferred theme wedding with high budget. Inclination for Indian food and Non-Indian food is equal. For two star hospitality Indian food is preferred with low budget. High budget peoples preferred medium size guest with Non-Indian food.

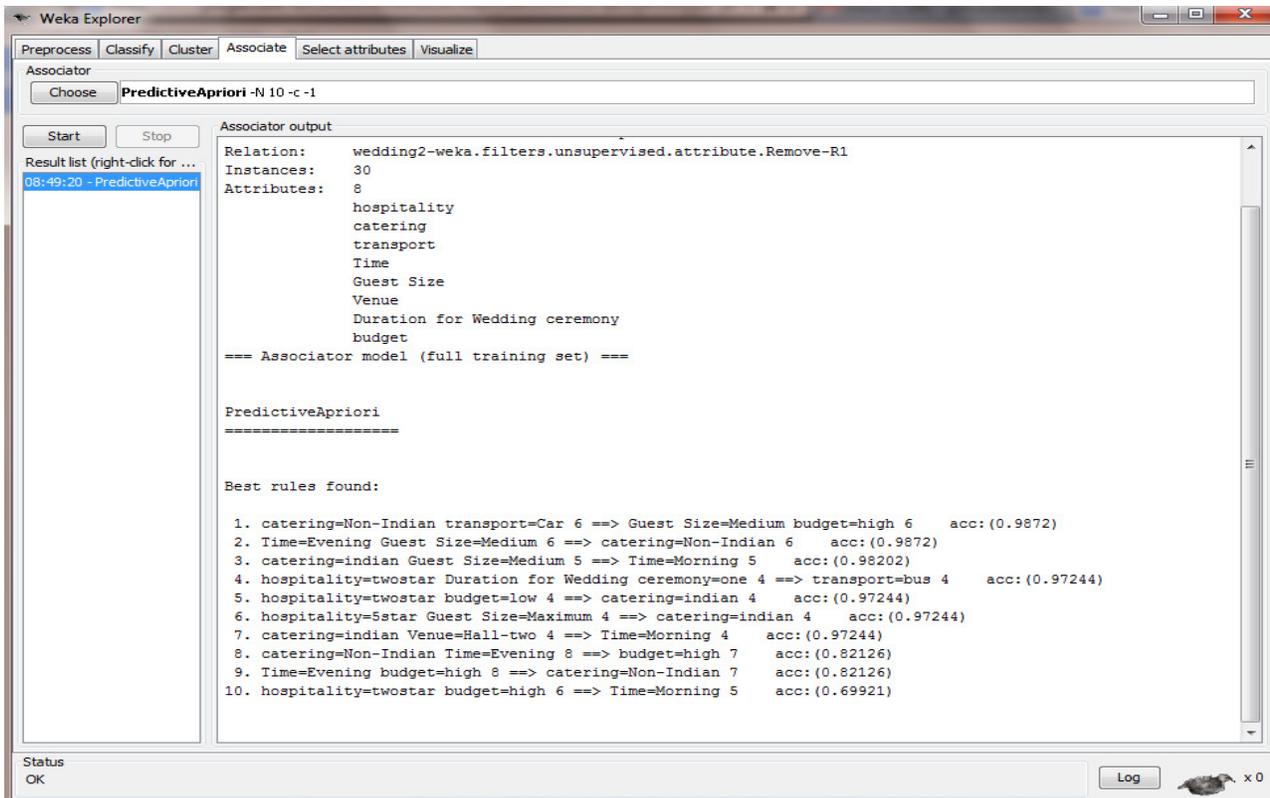


Fig. 4 Association Rules

## 5. Conclusion

This study shows the customer inclination and behavior towards theme wedding planning is based on preferences of catering and hospitality. People have shown interest for theme wedding if customized theme wedding packages are provided. This study will help wedding planner to plan theme wedding packages by considering traditional interest of customers and their behavior. Wedding planner can track and traced, and record customer data using application, infrastructure, and technology. In future, the changes in customer behavior in theme wedding planning can be analyze using data mining techniques such as classification, clustering to formulate new wedding packages and manage customer relation using CRM. Finally, the results present the customer behavior and trends towards theme wedding planning in urban India.

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