EXPLORE THE RELATIONSHIP BETWEEN CUSTOMER COMPLAINTS AND CUSTOMER SATISFACTION USING TEXT MINING

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ABSTRACT:

The objective of this paper is to explore the relationship between customer complaints and customer satisfaction with loyalty. This paper discusses about content analysis which transforms an unstructured data into structured data. This can be achieved through a process known as text mining. Text mining currently involves to analyze a large collection of unrelated digital items in a systematic way and to discover previously unknown facts, which might take the form of patterns that are concealed deep in an extensive collection. Customer complaints contain feedback and it is a gift for a company. It is used to track the product’s quality. If the complaints are resolved immediately, the customers will be satisfied.

Keywords: Customer Satisfaction, Customer Handling, Customer Feedback, Loyalty, Tokens, Structured Data, Content Analysis

[1] INTRODUCTION

The core part of CRM activities is to understand customer requirements and retain profitable customers [8]. A customer complaint is an expression of dissatisfaction. It is described as a report from a customer providing documentation about a problem with a product or service. Business consultants need to view customer complaints as a gift. Customer complaints are informal complaints directly addressed to a company or public service provider.

Customer feedback describes the process of obtaining a customer’s opinion about a product or service. It provides business owners with insight that they can improve their business, products and overall customer experience.

- It helps to improve a product or service.
- It helps to measure customer satisfaction.
- It provides an actionable insight to a better customer experience.
- It delivers tangible data.
- It makes better business decisions.
- It identifies customer supporters.

Organization is shifting towards loyalty marketing to survive in competitive business environment. Loyal customers will be reluctant to support competitive retailers. Customer
loyalty is a key driver of sustainable profitability and growth. Loyalty is consumer repeating purchase intention to specific products [2]. It helps to enlarge premium price sales and market share for the business. Therefore consumer loyalty is regarded as necessary for successful competition in all types of business, manufacturers, services and retailers.

Loyal customers are those who are getting the products and services which they desire [9]. A deep understanding of consumer needs and expectations is essential to develop new products and services. Loyalty supports business operation by providing return business and long-term buying commitments [12].

[2] TEXT MINING

Text mining is the analysis of data contained in natural language text. Text mining [1] is similar to data mining, except that data mining tools [10] are designed to handle structured data from databases, but text mining works with unstructured or semi-structured data sets. Useful tool for researchers is the ability to make connections between unrelated facts, and as a consequence create inspired new approaches or hypotheses for their current work. This can be achieved through a process known as text mining. It involves to analyze large collection of unrelated digital items in a systematic way and to discover previously unknown facts. It is a growing applications field and an area of research, using techniques from well-established scientific fields such as data mining, natural language processing, case-based reasoning, statistics, machine learning, and information retrieval and knowledge management.

The purpose of Text Mining is to process unstructured information and extract important numeric indices from the text. Information can be extracted to develop summaries for the words contained in the documents or to compute summaries for the documents based on the words contained in them.

Typical text mining tasks include text categorization, text clustering, an entity extraction, production of granular taxonomies, sentiment analysis, document summarization, and an entity relation modeling [13]. It is a variation on a field called data mining that tries to find interesting patterns from large databases. The patterns are extracted from natural language text rather than from structured databases of facts. Databases are designed for programs to process inevitably and text is written for people to read.

[3] UNSTRUCTURED DATA TO STRUCTURED DATA

Structured systems are those where the data is fixed and well defined. These are designed, built and operated by the IT department, airline reservations, and an inventory control. Unstructured systems include email, reports, recorded telephone conversations, and other communications.

This paper uses content analysis to transform an unstructured textual content into structured data. Unstructured data has no identifiable structure. It includes bitmap images, text and other data types which are not a part of database. Textual unstructured data is available in E-mail, Power Point presentations and Word documents. Therefore, human intervention is required to create an unstructured data as machine readable. These make a more complete customer data platform for data mining analysis and the extraction of hidden knowledge for elevating marketing strategies. Data can be collected from the following:
Electronic News System – Internet marketing content which includes featured reports and industry analysis.
Customer Service Hotline – The customer service hotline provides an appropriate response to customer demands and complaints.
Word Documents – Textual Information.

[3.1] CUSTOMER COMPLAINTS HANDLING MANAGEMENT

Good business owners learn to perceive complaints as an opportunity to build strong relationships with customers and improve their customer service. Customer complaints give valuable information about how they need to improve product quality. If complaints are handled poorly, customers may go for competitor’s product. Complaints that are handled well may help to retain existing customers. We do not respond emotionally for a bad feedback. Company needs to respond promptly for complaints. It helps to make the customers happy and retain them.

Customer feedback is essential to know where and how to improve. Loyal customers like company’s brand. They provide their honest feedback, especially negative ones. Customer feedback can be collected from e-mail. The feedback may contain appreciation or complaints. Customer feedback about each product can be collected separately and stored in text files.

[3.2] CUSTOMER SATISFACTION

Satisfying customer’s needs is the key to business success. Customer Satisfaction is a measurement of customer attitudes toward products, services, and brands [4]. Companies should be continuously improving their products and services to retain and enhance customer satisfaction [5]. A completely satisfied customer identifies their service to meet or exceed expectation [11]. Poor product and bad service can have a high negative impact [6].

The defective product can be easily identified by text mining. Each word in text is tokenized and the maximum count of defective product is identified. Customer complaints should be corrected immediately. An important part of managing complaints and feedback is making sure that customers are satisfied or not.

[3.3] CUSTOMER LOYALTY

Customer loyalty schemes are an effective way to improve customer retention levels. Customer retention can significantly boost bottom-line profits [3]. Companies need to recognize and reward best customers to increase loyalty. Loyal customers help to increase profit. Loyal customers buy more and are often willing to pay more. A loyal customer's commendation is more potent to their friends and family than advertising campaign.

The recompenses to regular customers can vary from fixed discounts to extra goods. A mail order firm may offer a discount for bulk orders. The rewards should be attractive and manageable. Loyal customers know company and company know them well and their buying history.
[4] RESEARCH FINDINGS

The customer data can be imported from e-mail. Contents of e-mail may not be structured. All customer feedback mails which contain complaints are collected and stored in text files. The files which contain documents are processed first. The process of documents is shown in [Figure-1].

The process of forming tokens from files which contain an input stream of characters is called tokenization. It is a string of characters, categorized according to the rules as a symbol. In computing, stopwords are words which are filtered out prior after processing of text. It is controlled by human input. The filtering process is used to find the occurrences of each word using tokenize operator and filter stopwords operator. This is shown in [Figure-2]. Each line is tokenized and the occurrences of words are stored. This is shown in [Figure-3]. For example, the words defective and good are counted. These words indicate the product quality and service. The occurrences of each word are shown in [Figure-4].

Long term and loyal customers are easily identified and product quality can also be improved [7]. We can discover core customers. Customer Loyalty is made up of loyalty behavior and loyalty attitudes. The first, loyalty behavior (i.e. customer retention) is the act of a customer making repeat purchases. The second is loyalty attitudes which are a customer’s opinions about products, services, and brands. Customer Satisfaction and Customer Loyalty are incorporated into the long term goals of business [12, 14].
[5] CONCLUSION

This paper explores the relationship between customer complaints and customer satisfaction. Customer complaints contain feedback about the products or service. Customer feedback is a gift for a company. It is used to track the product’s quality and enhance it in a better way. The loyal customers convey the honest opinion about the products and they won’t
go for competitor’s products. So, customer complaints should be handled immediately. If the problem is rectified, the customers will be satisfied.

REFERENCES


Author brief Introduction

Dr. P. Isakki alias Devi received B.Sc and M.C.A Degree from Madurai Kamaraj University in 1997 and 2000. She has received M.Phil Degree from Bharadidasan University in 2008. She has received Ph.D. degree from Vels University in 2012. She has 11+ years of teaching experience. Her Research area is Data Mining for Customer Relationship Management. Her special fields of interest include Data Mining, Software Engineering, Cryptography, Programming Languages and Database Management System.