



Comprehensive Framework for Customer Relationship Management in Smart Utilities Based On Predictive Analytics

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Abstract: Within the broad framework of marketing, Customer Relationship Management is the most important the upcoming interesting area one concerned with understanding how relationships acts in retaining customer loyalty. During the informal discussions with concerned authorities of organizations in western Maharashtra, it was brought to the notice of researcher by them that there is keen need of studying customer relationship management. Many of them rightly noted their experience with regard to difficulties being faced by them while tackling the customers holding them for long term in the competitive environment. It was also observed that customer relationship management is the most neglected activity in many organizations, which should be given prime attention to meet the contemporary challenges in Smart Utilities based on Predictive Analytics. Therefore the need is to make in-depth study of how the relationship aspect will affect the growth profitability for the firms to what extent this requires an in-depth study of the subject entitled with intention to make a comprehensive study of customer relationship management in Smart Utilities based on Predictive Analytics

Keywords: CRM, Smart utilities, Predictive analysis

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INTRODUCTION

When a consumer approaches your company, they bring with them a preconceived notion of what they might anticipate from you in terms of the products and services you provide as well as any recent innovations in these areas. They are operating on the presumption that their advantage in your company goes hand in hand with this premise. A positive experience may strengthen a customer's loyalty and increase the likelihood that they will make more purchases, while a negative one might drive them to switch to a competitor. The ability to recognise this cycle provides the foundation for the rationale behind customer relationship management. Customers that buy from a company on a regular basis and show loyalty to that company might provide a number of advantages to that company. Customers that are very loyal to the business make up a substantial portion of the pie base. Therefore, the cost of doing business with an organization's current clients is incontestably not identical to the cost of attracting new consumers [1].

Today Bankers can at this point don't see the customers from the viewpoint of explicit items or a depiction on schedule. To expand lifetime benefit from esteemed customers, associations should desert the conventional storehouse mentality. In less difficult days; it was simple for one to choose the association. One use to pick the neighborhood association; the branch chief knew that person by name, in light of the fact that the family had led business for quite a long time. Innovation, commoditization, and globalization

perpetually changed the essence of Smart Utilities dependent on Predictive Analytics. A common monetary establishment has a great many neighborhood, territorial, public and worldwide contenders. Most players hold a generally little and questionable piece of the pie. It's an ideal opportunity to embrace a far reaching perspective on the customer as a component of a continuum, a deal, and to oversee, however the lifecycle of the relationship [2].

This causes it basic that associations to give most ideal items and administrations to guarantee customer fulfillment. To address the test of maintenance of customers, there have been dynamic endeavors in the Smart Utilities dependent on Predictive Analytics circles to switch over to customer-driven plan of action. The accomplishment of a particularly model relies on the methodology received by associations concerning customer information management and customer relationship management [3].

Over the course of a lengthy period of time, associations have grown to include a vast geographical and practical territory in order to fulfil the formative criteria. They have been working with a vast amount of information on clients, such as their profiles, locations, and other similar details. They maintain a friendly connection with their clients and have a sufficient understanding of their requirements, qualifications, and financial situations. Utilizing already collected customer data to gain a deeper understanding of the relationship a customer has with an organisation is one of the requirements for achieving customer centre status. Another prerequisite is the enhancement of customer administration related cycles to ensure that services are provided in a way that is efficient, error-free, and beneficial to the customers [4].

According to what has been learned from experience, businesses are coming to the realisation that their branches are probably the best resource for cultivating mutually beneficial customer relationships, particularly in an agricultural nation like India. Branches are indeed an essential channel for customer maintenance and benefit development in provincial and semi-metropolitan set ups. However, in order to increase the value of this asset, our organisations will need to transform their branches from transaction processing centres into customer-driven assistance environments [5]. This change would assist them with accomplishing primary concern business benefits by holding the most productive customers. There are dynamic endeavors to build up a relationship-arranged model of activities zeroing in on customer-driven administrations. Building a strong relationship with our customers is now the most difficult challenge that our organisations must overcome since, without it, all remaining efforts to achieve operational excellence are pointless. Through the services they provide, the organisations need to ensure that their consumers will continue to do business with them. This is due to the fact that a substantial chunk of pay for a large section of the associations comes from current customers, rather than from new consumers [6]. In other words, existing customers pay more than new customers do.

When properly carried out and integrated, customer relationship management (CRM) solutions have the potential to contribute significantly to an increase in overall customer satisfaction levels. Customers may have better interactions with multiple trade channels thanks to the use of information warehousing, which can assist improve such interactions. This is due to the fact that information warehousing brings together under one roof all of the transactions that come from different channels. Information mining provides associations with assistance in examining and measuring the designs and behaviours of consumer interactions. This may be of tremendous aid in increasing the quality of support provided and finding new

opportunities for company [7].

Private organisations have always held the perception that they are very "Customer Centric," providing high-net-worth customers with what they consider to be highly individualised services. On the contrary public sector organizations have snapped out to their traditional Smart Utilities based on Predictive Analytics system & are finally spending huge amounts on computerization & IT infrastructure discovering their private competitors using technologies to gain large clients, public sector organizations are determined to strengthen their eroding customer base [8].

The wealthier the consumers, the more demanding they are, and customers expect ever-increasing levels of service from their companies, including an understanding of what their wants and needs are so that the company may be structured to meet those requirements [9]. An organised approach to customer relationship management (CRM) provides the organisation with a number of benefits, including a personalised and dependable experience for the customer, a distinct identification of the authoritative, mechanical, and measurement-related abilities, and a prioritisation of these capabilities. Which were item and exchange arranged, zeroed in on discrete instead of consistent exercises. Today, monetary organizations can presently don't depend on these serious relationships or set up showcasing strategies to pull in and hold customers. As business sectors separate into heterogeneous fragments, an all the more decisively focused on advertising method is required; this makes a discourse with more modest gatherings of customers and recognizes singular necessities [10].

Additionally, before the Internet insurgency, purchasers to a great extent chose their associations dependent on how advantageous the area of associations branches was to their homes or workplaces. As a direct result of this, the client base of associations has grown, and as a consequence, so have the options available to consumers for selecting organisations. The current situation, in addition to the compelling considerations posed by competitive and dynamic business sectors, has contributed to the growth of CRM in the financial services industry. There aren't very many reasons behind why you should hang on to the customers [11].

- Customer stays faithful for longer time
- Buys more as the associations presents new administrations and updates existing administrations
- Talks well about the associations and its administrations
- Pays less thoughtfulness regarding contending brands and promoting and are less delicate to cost.
- Acquiring new customers can cost multiple times more than the expense associated with fulfilling and holding existing customers due to reutilized exchanges [12].

In the new context of globalization every organization is aggressively trying to tap new customers thereby serving existing customers in the best possible way. Brand image & word –of- mouth proves to be powerful tool to establish the first contact with organization. Customers spread positive word of mouth only when they establish trust, trust in turn is built up through a strong & well recognized brand. Thus, the vicious circle of referrals being the function of brand image & brand image being the referrals continues [13].

The corrective actions are already being developed, and more and more Indian businesses are coming to terms with the reality that the cost of obtaining a new client is far more than the cost of keeping the customers they already have. A business may not only attract and keep consumers by establishing and executing strategies for managing customer relationships, but it can also win back clients that it has already lost. Therefore, identifying potential customers, treating them according to the service level that they deserve, tracking and recording the details of transactions for further reference through the supply chain and other modes of intermediaries, an enterprise has to introspect customer relationship management and set business policies and procedures that are designed to create and grow long term –relationships, which is the foundation of competitive advantage, growth, and profitability. As a result, the researcher has decided to focus their attention on the study with the title "A Comprehensive Framework for Customer Relationship Management in Smart Utilities based on Predictive Analytics" [14].

As managements work harder to live up to the expectations of stakeholders, there will be an increase in the number of mergers and acquisitions. The establishment of four to five Indian organisations of world-class calibre may result from this. As corporations look for ways to differentiate themselves from competitors, we may witness the rise of some national organisations operating on a global scale as well as a number of regional players. On this background it is necessary for someone to do & identify in depth study to identify & focus on functioning on CRM in Smart Utilities based on Predictive Analytics. With this view the present study entitled has been undertaken for further research work [15]. This study is arranged as follows: in part 2, the literature review is detailed; in section 3, the research technique is explained; in section 4, the results and discussion are analysed; and in section 5, the final conclusion and future work are discussed.

LITERATURE REVIEW

The review of literature provided the road map to identify that how organizations formulate their strategies for evaluating the customer relationship effectiveness & how their strategies varies with nature & age .extant literature is reviewed from several sectors as follows.

In [11] Author depicted Customer Relationship Management, generally abbreviated to CRM, is one way that you can do precisely that. With CRM, you centre on dealing with those relationships with your customers to guarantee that you hold them. All things considered, it is far less expensive to hold customers than it is to discover new ones somewhere else & thus, it is more critical to ensure that the way toward utilizing your business or items is pretty much as consistent as could be expected, & this book is here to instruct you to do precisely that.

In [12] depicted Customer Relationship Management (CRM) is an interaction organizations use to comprehend their customer gatherings & react rapidly—& on occasion, right away—to moving customer wants. CRM innovation permits firms to gather & oversee a lot of customer information & afterward complete procedures dependent on that data. Information gathered through cantered CRM drives assists firms with tackling explicit issues all through their customer relationship cycle—the chain of exercises from the underlying focusing of customers to endeavours to win them back for additional.

According to the author of [13], the history of CRM is undeniably a brief one in terms of the inventive

component of customer management. In spite of the fact that marketing strategies and methods have been around for a long time, the majority of company owners used to rely on general approaches to entice potential clients and win over loyal customers. Before the advent of CRM, the majority of businesses were not very innovative when it comes to developing individualised connections with their clientele.

In [14] author depicted CRM makes esteem by holding setting & utilizing this data to trigger occasions or cycles. Then again, current commitment frameworks have been attempting to fuse setting for quite a long time, yet with restricted achievement. Generally, setting in the communication world came as programmed number distinguishing proof & Dialed Number Identification Service - & numerous conventional telecom transporters are as yet sticking to this old-fashioned framework. Current continuous arrangements can take advantage of a meeting & join huge measures of data & metadata to it.

In [15] author portrayed the manner in which business is done today, there is acceptable ground to accept that achievement relies entirely upon how well your overseeing relationships with your customers. Attempting to stay erring on the side of caution, most organizations put cash in so-saw strong CRM frameworks to deal with administration issues for them, however the catch with CRM patterns is that they are truly difficult to monitor. When you've bought your framework, a few new ones you had no idea about will have effectively been delivered.

In [16] author portrayed A chiefs, regardless of whether fresh out of the box new to their positions or grounded in the corporate progression, can go through a little brushing once in a while. As customer dedication progressively turns into a relic of times gone by, customer relationship management (CRM) has become one the present sultriest themes. Customer relationships management: An essential methodology supplies simple to-apply answers for regular CRM issues, including how to amplify sway from CRM innovation, which information warehousing procedures are best & how to make & oversee both short-& long - term relationships. This book familiarizes understudy centres around the essential side of customer relationship management. The content gives understudies & comprehension of customer relationship management & its applications in the business fields of advertising & deals.

In the [17] author evaluation of CRM suites for large business associations, we distinguished the nine most significant CRM suites from eight notable sellers — Inform, Microsoft, Net Suite, Oracle, Peg frameworks, Sales power, SAP, and Sugar CRM — and researched, analysed, and rated each one of them. This study details our findings with the goal of assisting application development and delivery (AD&D) specialists supporting customer relationship management (CRM) activities in selecting the appropriate partner for their customer commitment initiatives.

In [18] author depict the articulation, Customer Relationship Management (CRM), has been being used since the mid 1990s. From that point forward, there have been numerous endeavours to characterize the area of CRM, various which show up in Table 1.1. As a control fervently challenged by different data advances (IT) sellers, specialists & scholastics, an unmistakable agreement has not yet arisen. Indeed, even the significance of the three-letter abbreviation CRM is challenged. For instance, albeit the vast majority would comprehend that CRM implies Customer Relationship Management, others have utilized the abbreviation to mean Customer Relationship Marketing.

In [19] author portray Companies have demonstrated their premium to be customer situated as opposed to item arranged. They like to be more customer situated combined with having more customer information availability which is both conceivable through Customer Lifetime Value (CLV). The primary objective of CLV is to determine the significant level of every customer for an organization. It shows that the number of customers is worth to the organization throughout the time span that they consider the organization's customer.

In [20] author portray Knowledge Management & Analytical CRM are helpful devices & innovation in dynamic cycle & comprehension in an association. This paper intends to give a total investigation of the ideas of Data Mining, information management & scientific CRM to set up a structure for coordinating every one of the three together. The goal is to show how Knowledge Management & scientific CRM can be incorporated into a construction that backings dynamic utilizing proficient Data Mining Techniques & to investigate how chipping away at a logical CRM framework can empower associations convey total arrangements.

In [21] author depicted without a doubt, it tends to be said that customers are the main resource in the most associations. Since customers have an immediate relationship to the activities of an association, consequently they are important wellspring of chances & dangers operational inquiries identified with the business. Today's, to develop & make due in aggressive economy, organizations & associations should focus on customer direction & increment their relationship with the purchasers of merchandise like never before.

In [22], the author portrayed It is not tough to fathom any cause why Customer Relationship Management (CRM) has become the most cutting-edge management development equipment of the most recent decade. [C]onsumer Relationship Management [CRM] In the Management Tools 2001 Survey conducted by Bain & Company, which included 451 senior executives, it was revealed that 72 percent of respondents planned to have CRM systems set up by the end of that year. This was more than double the percentage from the previous year. This is due to the fact that very few pioneers have had the opportunity to fight an invention that promises to instantly identify your most productive consumers and target them with missions to increase both their purchases and their loyalty while doing it at an ever-decreasing cost.

In [23] author portrayed Consumers have consistently had relationships with brands, however modern apparatuses for breaking down customer information are at last permitting promoting associations to customize & deal with those relationships. With this new force comes another test: People presently anticipate that companies should comprehend what kind of relationships they need & to react fittingly—they need firms to hold up their finish of the deal. Shockingly, numerous brands don't meet those assumptions.

In [24] author portrayed Examining the business-to-business relationships writing shows two fundamental ways to deal with considering the clouded side of business relationships. The primary methodology centres on understanding the rise of the clouded side all through the different phases of business relationship improvement which can have genuine ramifications for the developing relationship. The subsequent methodology is worried about understanding the parts of key social develops, including trust, responsibility, pressure, vulnerability, struggle & advantage, which can either be impacted by, or add to,

the clouded side.

In [25] author referenced that essential focal point of relationship showcasing is towards building nearer relationships with the customers as procedure to beat issues like gaining worldwide upper hand, adapting to quickly changing advancements & decreasing "time - to-advertise "New items. Notwithstanding of the reality little exploration has zeroed in on execution of relationship advertising ideas.

RESEARCH METHODOLOGY

Pricing model and Revenue Protection Analytics

In the same way that each CRM provider has its own unique software on the market, it should come as no surprise that their price structures are likewise distinct from one another. You need to take into consideration all of the expenses that are associated with having your CRM up and operating. Total cost of ownership is the term used to describe this notion (TCO). The total cost of ownership (TCO) encompasses a great deal more than the sum that you pay the CRM provider on a monthly or annual basis.

A number of CRM solutions assess a fee on a per-user basis. Because of the need for complete transparency and accountability, you must make certain that each user has just one login. If you require a large number of users, you need to be sure that you figure in the associated expenses, as well as any future expenditures that may arise as your business expands.

CRM solutions that also contain marketing capabilities often levy an additional payment on a per-contact basis. The amount of individuals who use the CRM at your organisation will determine whether or not this price structure is ultimately more cost-effective for your business. Make it a point to find out whether there are any fees or restrictions associated with sending email, monitoring websites, or using any of the other capabilities.

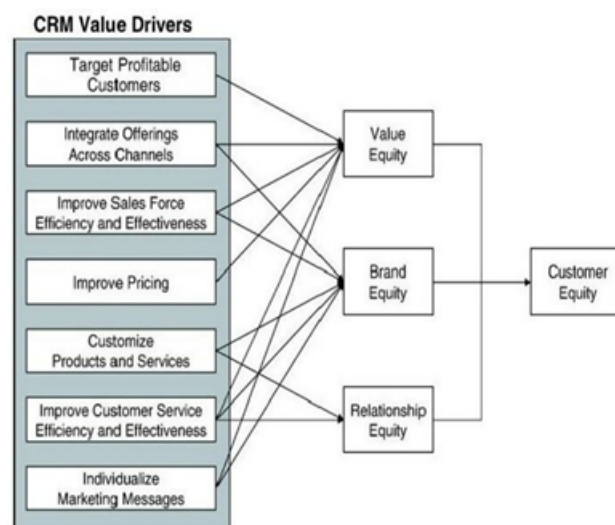


Figure 1: Pricing model

Collection analytics

The process of putting into place a CRM Analytics solution for a company requires a number of processes, one of which is the extraction of data, followed by the loading of the extracted data into a warehouse and the execution of a suitable mining algorithm. We propose a CRM Analytics Framework that offers an end-to-end framework for designing and deploying preconfigured predictive modelling business solutions. This is done with the goal of assisting in the reduction of the amount of time and effort necessary for the construction of the application. Standardization and development that is driven by metadata are both used in the solution; as a result, the framework is made available to users who are not subject matter experts. In this paper, we give a case study of the application of our framework to the field of finance, and we discuss our framework, which is built on top of industry standard software products. Companies often amass large volumes of information about their clients, as well as the nature of their connections and interactions with those clients. Such customer interaction and relationship data¹ can provide customer segmentation groupings (for instance, dividing customers into those most and least likely to repurchase a product); profitability analysis (which customers lead to the most profit over time); personalization (the ability to market to individual customers); event monitoring (for instance, when a customer reaches a certain dollar volume of purchases); what-if scenarios (how likely it is that an event will occur); and what-if scenarios (how likely it is that an event will occur) (for example, comparing various product development plans in terms of likely future success given the customer knowledge base). The results of an investigation of this sort lead to improved and more fruitful relationships with customers in terms of both sales and service.

Modeling and Evaluation

After the data have been prepared in a way that is consistent with what is anticipated by the mining engine of choice, the mining engine is now triggered with the necessary settings (e.g., table name, name of attribute to be predicted etc.). The mining algorithm may be selected from one or more of many different classifications, including association rule mining, clustering, and classification. It is not unheard of for a user to have the intention of contrasting the results obtained by a number of different clustering algorithms when applied to the same data. This assessment may lead the user to new options for the mining operator or algorithm, leading to an iterative process leading to an ultimate decision. The learned model is then used on any accessible test data in order to evaluate its quality.

Table 1: Effort Distribution

Data Understanding and Acquisition	30%
Data Preparation	40%
Modeling and Evaluation	15%
Deployment and Reporting	15%



Analytical Customer Relationship Management

The Internet has developed into a consumer communication channel that is distinguished by its cheap cost, low latency, and high capacity. Because of its interactive character, it enables businesses to have a more intimate and individualised conversation with each of their particular clients. The simultaneous maturation of data management technologies such as data warehousing and data mining has created the ideal environment for making customer relationship management (CRM) a much more systematic effort than it has been in the past. This environment has created the ideal environment for making CRM a much more systematic effort than it has been in the past. In this article, we discussed how data analytics may be utilised to improve the performance of a variety of CRM tasks, including customer segmentation, communication targeting, customer retention, and customer loyalty. We provide a concise overview of the essential technologies required to deploy analytical CRM, as well as the organisational concerns that need to be addressed in a thoughtful manner in order to make CRM a reality. Our objective is to demonstrate the issues that are plaguing the ongoing CRM initiatives, as well as the solutions that can be found via the use of data analytics methods. Our objective is to pique the attention of the community of data miners in this critically essential application sector. Everywhere you go, marketing teams are looking at this development as a chance to get in contact with prospective clients on a more personal level as bandwidth continues to expand and better information appliances become accessible. The quantity of client solicitation has also been steadily increasing due to the fact that businesses are constantly creating new methods of customer engagement that are more efficient and less expensive. Customer solicitation has reached levels that have never been seen before as a direct result of the Internet's position as the customer interaction channel of choice due to its low latency, large bandwidth, and almost free operation.

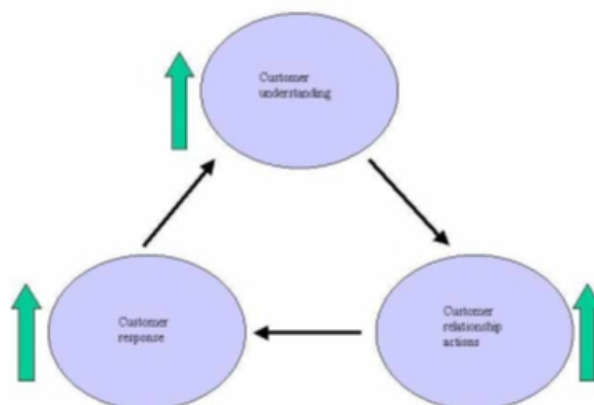


Figure 2: 'Virtuous circle' of CRM

RESULTS & DISCUSSION

Keeping existing customers happy is one of the most important drivers of a successful company. Optimizing the way in which customers are retained is one strategy that may be used to prevent customers from leaving. The term "customer retention" refers to the actions that a company takes in order to increase the number of customers who make subsequent purchases and the revenue generated from those sales.

There are four different explanations for why you should be worried about the retention of your customers. To begin, revenue from current clients is more than that generated by new consumers. According to estimates provided by Gartner, just 20 percent of a company's current customers are responsible for around 80 percent of the company's expected future income. Second, retaining already-existing consumers requires a lower investment of resources than bringing in new ones. Third, the cost to serve an existing client is lower than the cost to service a new customer. Last but not least, your current clientele may serve as an extension of your sales force by bringing in new business.

It might be said that customer retention models are the most lucrative types of models that businesses can build in order to increase their total customers' profitability. Within the context of an overall retention plan, the capability of targeting high-value customers who are most likely to defect or become inactive enables firms to focus limited resources in the most effective manner. Now that customers have been rated according to the value they bring to the business and the likelihood that they will leave, testing can be carried out across various groups or segments of customers in an effort to determine whether or not there is a difference in the percentage of customers who remain loyal.

The majority of the time, we are aware that the saving rate will change, which is why we need to predict the net lift. The idea behind this is to build tools for targeted or predictive analytics that can not only identify who is most likely to leave the organisation but also determine whether or not it is still possible to rescue them. Numerous Predictive Analytics Conferences have included discussions on prominent topics such as net lift and the strategy that was used in the creation of these tools. The real idea of retention is something that has not been explained in great detail up to this point. The concept of retention is vague, and the manner in which different organisations define it might vary greatly from one another. If we depended on the customer to genuinely signal that they were no longer a client, then developing a definition for "customer retention" would be a simple and straightforward process.

Renewal-based programmes are a good illustration of this, since they require me to periodically renew either my subscription, my insurance policy, or my participation in a certain programme. However, this kind of active-based retention only accounts for a tiny percentage of the activity that most firms engage in towards retention. The vast majority of activities relating to retention are passive in the sense that the client does not actively communicate with us that they are departing. The organisation is tasked with determining the level of client retention based on the activity level of customers within a certain window of time. But this is the conundrum that we face. When referring to the length of time, what exactly do we mean, and how do we go about calculating it? It is possible to construct simple frequency distribution reports that provide information about buying activity within a variety of time periods. The following are some instances of different types of industries.

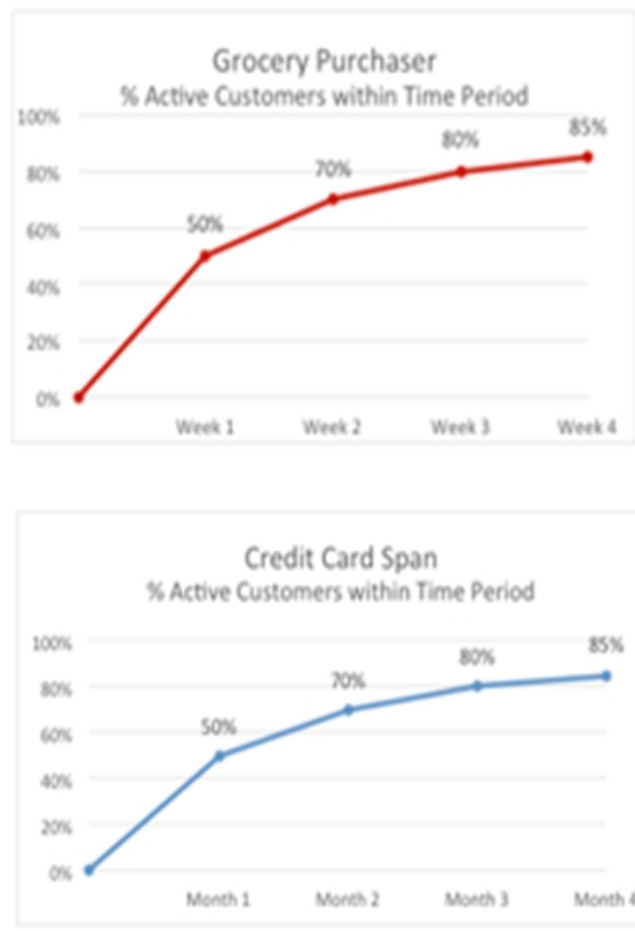


Figure 3: Grocery purchaser and credit card span

The following report examines the customer activity of active consumers on a weekly basis for the grocery store, but the interval is on a monthly basis for the credit card firm. On the basis of these two cases, it would seem that seventy percent of active customers engage in repeat activity within a period of two weeks, but in the case of the credit card firm, seventy percent of active customers engage in repeat activity within a period of two months. In the meanwhile, using the purchase of tyres as an example, we observe the following:



Figure 4: Tire purchaser

The effects of a successful retention plan have the potential to be considerable. For instance, it has been shown that a five percentage point gain in customer retention may result in an increase in customer lifetime value (CLV) that is anywhere from seventy-five percent to one hundred percent or more across a variety of different businesses. According to research conducted by Bain & Company. The methodology that was used to arrive at these conclusions is broken down visually and shown below.

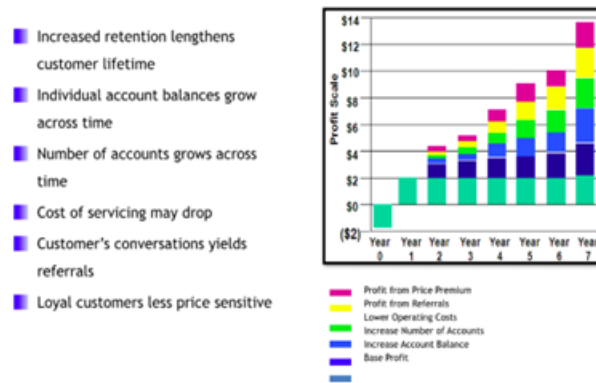


Figure 5: Potential benefits of retention

CONCLUSION & FUTURE WORK

Using an ANOVA-based approach, the present investigation focused on the identification of customers when there was an existing common name in CRM databases. This was done so in order to maximise efficiency. The suggested algorithm's primary objective is to identify the user by engaging in a conversation with them in which a minimal amount of questions are asked. The algorithm will provide a list of the most informative questions (customer features) that need to be asked of the client. This list will be the result of the algorithm. The proposed framework links the customer interactions (responses) with the organisation database in order to fulfil customer recognition task. This is accomplished by using two sources of information: customer record(s) in the organisation database and customer interactions (answer) with the CSR (or: information provided by customers in their interaction). It's possible for the primary data source of information (the CRM database) to have sloppy or inaccurate information.

References

1. Abdul-Muhmin, A. (2012). CRM technology use & implementation benefits in an emerging market. *Journal of Database Marketing; Customer Strategy Management*, 19(7), 82-97.
2. Agariya, A., & Singh, D. (2013). CRM index: An effective weapon for relationship enhancement. *International Journal of Financial Services Management*, 6(3), 179-199.
3. Baran, R., & Galka, R. (2013). *CRM: The foundation of contemporary marketing strategy*. New York, NY: Routledge.
4. Crnkovic, J. (2013). Invited Article: The Future of CRM is UX. *Business Systems Research*, 4(1), 4-13.
5. Heyn, J. (2012). CRM – How it can help medium size companies & are there any downsides to its

implementation. München: GRIN Verlag GmbH.

6. Jamieson, C. (2014). *Small Business' Guide to Social CRM*. Packt Publishing.
7. Josiassen, A., Assaf, A., & Cvelbar, L. (2014). CRM & the bottom line: Do all CRM dimensions affect firm performance? *International Journal of Hospitality Management*, 36(7), 130-136.
8. Kaufmann, H. (2013). *Customer-centric marketing strategies tools for building organizational performance*. Hershey, Pa.: IGI Global.
9. Kim, H. (2012). How CRM strategy impacts organizational performance: Perspective of customer equity drivers. *Journal of Database Marketing & Customer Strategy Management*, 19(6), 233-244.
10. Metz, A. (2012). *The social customer: How brands can use social CRM to acquire, monetize, & retain fans, friends, & followers*. New York: McGraw-Hill.
11. Mullins, J., & Walker, O. (2013). *Marketing management: A strategic decision-making approach* (8th Ed.). New York: McGraw-Hill.
12. O'Reilly, K., & Paper, D. (2014). Customer Relationship Management (CRM): An Approach for Transforming the 'Myth' of CRM Success into Dual-Creation of Value. *Journal of Information Technology Case & Application Research*, 11(3), 1-8.
13. Safeer, M., & Malik, A. (2014). A Step towards Real-Time Customer Relationship Management (CRM). *International Journal of Future Computer & Communication*, 2(6), 581-584.
14. Ghosh Hazra sandip & Kailash B Srivastava,(2009) "Impact of Service Quality on Customer Loyalty Commitment & Trust in the Indian Banking Sector",The ICFAI University Journal Of Marketing Management; The ICFAI University Press VOL.VIII Nos.3&4August & November 2009.
15. Dasari shailendra,(2009) "Indian service firm's customer centric or customer antagonistic? Marketing mastermind VOL-IX the ICFAI University press December 2009.
16. Bardicchia, Marco (2020). *Digital CRM: Strategies & Emerging Trends: Building Customer Relationship in the Digital Era*. p. 12.
17. "Management Tools - Customer Relationship Management - Bain & Company". www.bain.com. Retrieved 23 November 2015.
18. Nahshon Wingard, "CRM History: The Evolution Of Better Customer Service". www.streetdirectory.com. Retrieved 24 May 2020.
19. Chris Vitek, "How Context Sits at Intersection of CRM, ACD". Retrieved 8 June 2017.Unified Communications & Collaboration
20. Arthur Zuckerman, "History of CRM Software". comparecamp.com. Retrieved 8 February 2017.
21. Lakshman Jha (2017). *Customer Relationship Management: A Strategic Approach*. ISBN

9788190721127. Retrieved 8 June 2017.

22. Kate Leggett, Stephen Powers, Mark Grannan, Sara Sjoblom, Chad Rafferty, Peter Harrison ,The Forrester Wave: CRM Suites For Enterprise Organizations, Q4 2016, Forrester, 21 November 2016, retrieved 13 September 2017
23. Buttle, Francis; Maklan, Stan (11 February 2015). Customer Relationship Management: Concepts & Technologies. ISBN 9781317654766.
24. Feiz, Setareh & Ramezani Ghotbabadi, Ali & Khalifah, Zainab. (2016). Customer Lifetime Value in Organizations. Asian Journal of Research in Social Sciences & Humanities. 6. 53. 10.5958/2249-7315.2016.00103.9.
25. Josiah, Ahaiwe; Ikenna, Oluigbo (February 2015). "Role of Technology in Accounting & E-accounting". International Journal of Computer Science & Mobile Computing. 4 (2): 208–215. Retrieved 27 October 2018.