

A Framework for an e-CRM Customer Segmentation

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Abstract

The Customer is an important resource in every organization since they are responsible for generating profit, hence in recent times, most organizations have engaged in management frameworks to attract and retain customers. To be able to achieve this goal, this research therefore employed a segmented approach towards addressing the challenges organizations face in managing customers. A segmentation system was designed and implemented for classifying customers who share common characteristics into distinct customer segments. Using the segmentation system, we were able to group customers using data gathered from Internet users within the University of Benin community, thereby providing a platform for an in-depth understanding of customers' perception with regards to service needs and usage patterns.

Keywords: Customers, segmentation, CRM, e-CRM.

1.0 Introduction

The Customer (in this paper) is an individual, subscriber, user, organization or group of individuals who exchange values with a service/product offered. Customers are responsible for generating profit for the organization because they are the individuals or groups who exchange a value for a certain service or product being offered [1]. In recent times, most service organizations now engage various frameworks for customer management. Customer Management encompasses all the systems, processes and applications needed to manage customer relationships. According to Chang [2], building and maintaining a good relationship with customers is essential to long-term business survival. The advantage of adopting the philosophy of Customer Relationship Management (CRM) is that it helps many service providing firms to meet, satisfy, retain and maintain a good relationship with their customers. It is important for an organization to attract new customers and retain existing ones to flourish in business and also to put the right systems in place for managing them. In today's blooming market, customer's expectations are not only limited to getting best products and services, but also they want to be involved in businesses in which they will receive exactly what they demand and in time. Organizations cannot make it far away without giving attention to customers' needs [3], hence new concepts or initiatives are embraced from time to time to help them become leaders in managing their customers. One such concept (giving rise to a paradigm which addresses the problem of managing customers) is the Customer Relationship Management (CRM). CRM aims at developing sustainable, long-lasting affiliations between companies and customers. Almotari [4] observed that managing people in any organization is a sensitive and difficult task since they are liable to change. Egbokhare and Onibere [5] specifically emphasized the importance of the customer as the key player in software development projects whose level of participation is a major determinant of success/failure. While Almotari [4] opined that the technology component is the most overwhelming in customer management given the ever expanding number of technology offerings and alternatives. Technology refers to computing capabilities that allow a company to collect, organize, save, and use data about its customer. Technology is the enabler for CRM systems to achieve their objectives of collecting, classifying, and saving valuable data on customers. Integrating technology allows organizations to develop better relationship with customers by providing a wider view of the customer behaviour. Many industries and organisations are channelling their resources to differentiate (segment) and customize their products and services to suit and serve customers in order to establish better relationship with them. Obviously, segmentation is very crucial because no firm would want disloyal or wrong customers. A segment is a group of existing or potential customers who share common

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characteristics that make them different from other groups of customers. This means that organizations need to create a set or segments of right customers as some customers are better than others. Selecting these set or sets of customers is segmentation. It is assumed that the population of customers is heterogeneous and with diverse perception of needs, as they have the power to influence the buying decisions of others. Hence segmentation as a process helps identify the most profitable customers that an organization can develop relationships with. McGuirk [6] opined that customer segmentation is the practice of differentiating customers into distinct groups. Bounsaythip and Rinta-Runsala in [7] viewed customer segmentation as a term that describes the process of dividing customers into homogeneous groups on the basis of shared or common attributes (habits, tastes, etc.). According to Sharma et al [8], research studies exposed that customer dissatisfaction is the reason why customers leave a company or feel they can no longer be managed by the organisation, and this has increased switching behaviours, negative word of mouth and increased complaint behaviours. The need for having an in-depth understanding of what customers want and serving them best is on the high side as the competition to retain customers by organisations is increasing by the day. One way to meet such needs is to develop frameworks for understanding customer behavior and needs by grouping those with the same needs in one segment. This paper therefore develops an automated framework for customer segmentation.

2.0 Material and Methods

Customers have different perception of needs and service/product usage patterns, and this perception of needs places them as a group with similar characteristics of needs. Customers are generally grouped into two broad classes: satisfied and dissatisfied. To properly segment customers, we attempted to automate the process to generate the various segments and categories of customers. The flow diagram in Figure 1 models the phases used in this paper for the segmentation system.

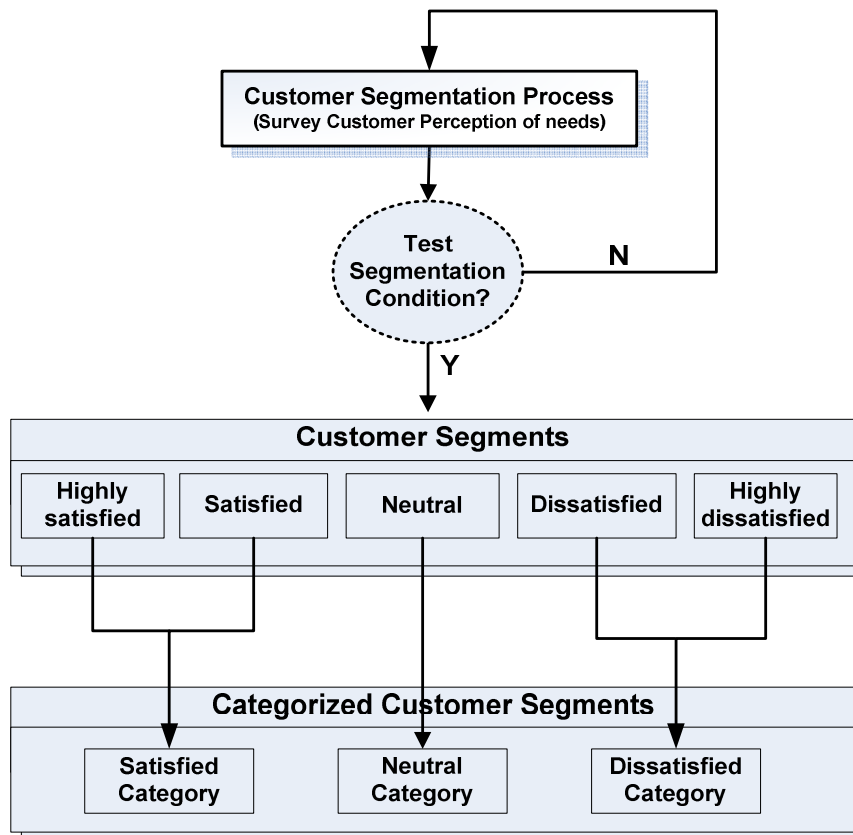


Figure 1: A Framework for Customer Segmentation System.

In this model, customer behavioural patterns and their perceptions of service or product usage are first studied. Such data is gathered and stored over a stipulated period for use in the segmentation processes. The segmentation process was a

program written in PHP to classify customers into distinct segments with shared and common characteristics. Initially, the segmentation process produced five categories of customers “highly satisfied”, “Satisfied”, “Neutral”, “Dissatisfied” and “Highly dissatisfied”. To optimize the process and further reduce managerial cost, we refined the categories by collapsing one or two segments with similar attributes.

The Input data for the system was obtained from a homogenous sample population consisting of Internet Service Users in the University of Benin using a research questionnaire. The items in the questionnaire were geared towards eliciting data from Internet users with regards to their level of satisfaction from selected Internet service providers. The survey data was structured around simple service providing business processes and functions to survey customer perceptions with regards to several attributes: demographic, transactional, operational and psychographic, using a five-point scale (e.g. highly dissatisfied being on the scale 1 to highly satisfied of scale 5) as seen in Table 1. The ability to determine the level of satisfaction was obtained from the responses in the questionnaire and used to group each customer into a segment.

Table 1: Five-point Scale with key Indicators

I	*Indicator	Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied
	Scale/Value	1	2	3	4	5
II	Indicator	Very Poor	Poor	Not Sure	Good	Very Good
III	Indicator	Highly Oppose	Oppose	Not Sure	Recommended	Highly Recommend

3.0 The Segmentation Process Module

Using the five-point scale indicator as shown in Table 1 to match responses with the determinant attributes, customer segments were created. The following criteria and determinant attributes were used to group customers into segments.

Determinant Attribute

- i. Complaint Handling (CH)
- ii. Problem Resolution (PR)
- iii. Service/Product Availability and Delivery (SAD)
- iv. Service/Product Value-Price Relationship (VPR)
- v. Company’s ICT level (CIT)
- vi. Customer Overall Impression (COI)
- vii. Recommend Service Ability (RSA)

Percentage satisfaction (%Sat) is defined as

$$\%Sat = N(x) / N(y) * 100$$

where

N(x) is the total number of a customer’s responses with regards to the determinant attributes

N(y) is the total number of segmentation determinant attributes

Using the segmentation model, a web-based e-CRM system was designed and implemented to automate segmentation conceptual processes. PHP (a scripting and a server sided language), MySQL (a query language to manage the segmented customer database) and a server software (apache to run scripts offline) were used to implement the system. The system provided customers at different touchpoints, the opportunity to register, login and fill the questionnaires online and offline. Data gathered offline were keyed into the system by the administrator for the purpose of segmentation.

Each customer segment highlighted the facts that customers have different satisfaction perception on product or service needs and usage patterns. From the pool of customer information in the database, it is apparent that segmentation concept has enabled the classification of customers with similar characteristics into five distinct segments as seen on the interface of Figure 2.

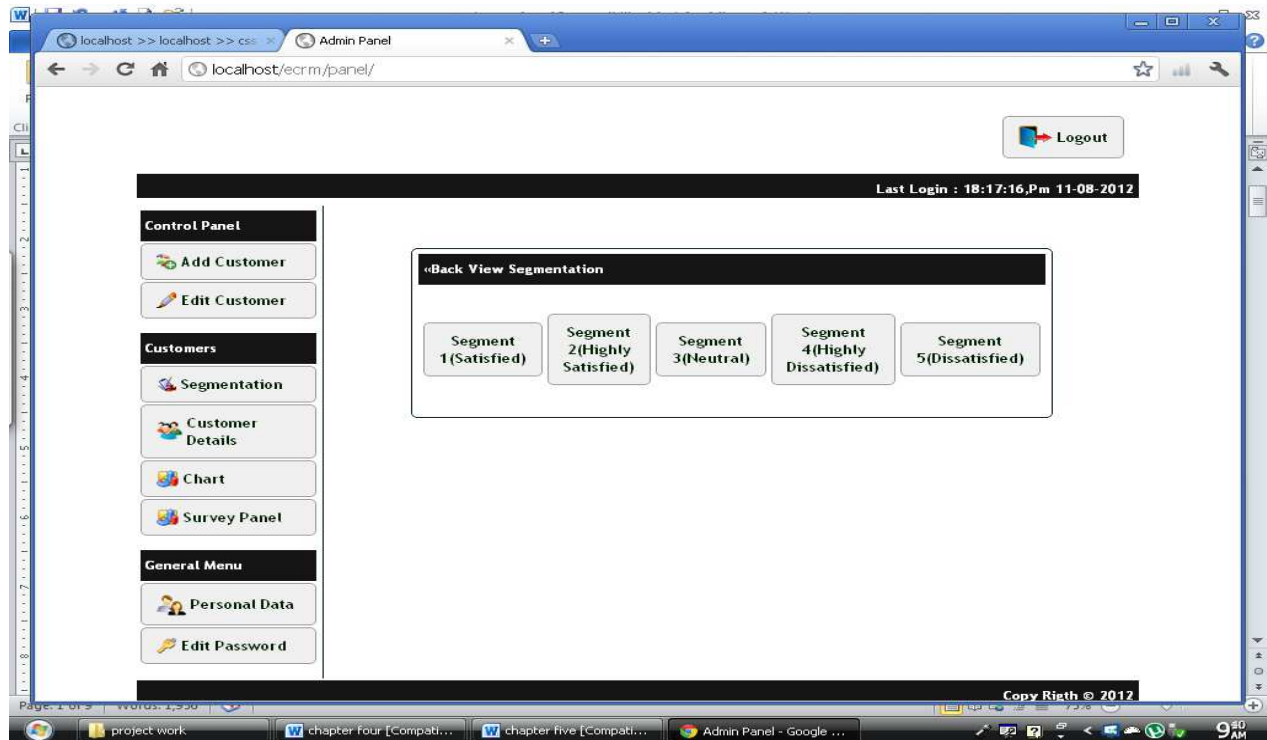


Figure 2: Customer Segments.

The segmentation management system (a web-based e-CRM system) integrated people, process and the e-CRM technological approaches (operational and analytical) thereby building a customer database which post classified the five customer segments into these three categories: Satisfied, Neutral and Dissatisfied as seen in Figure 3.

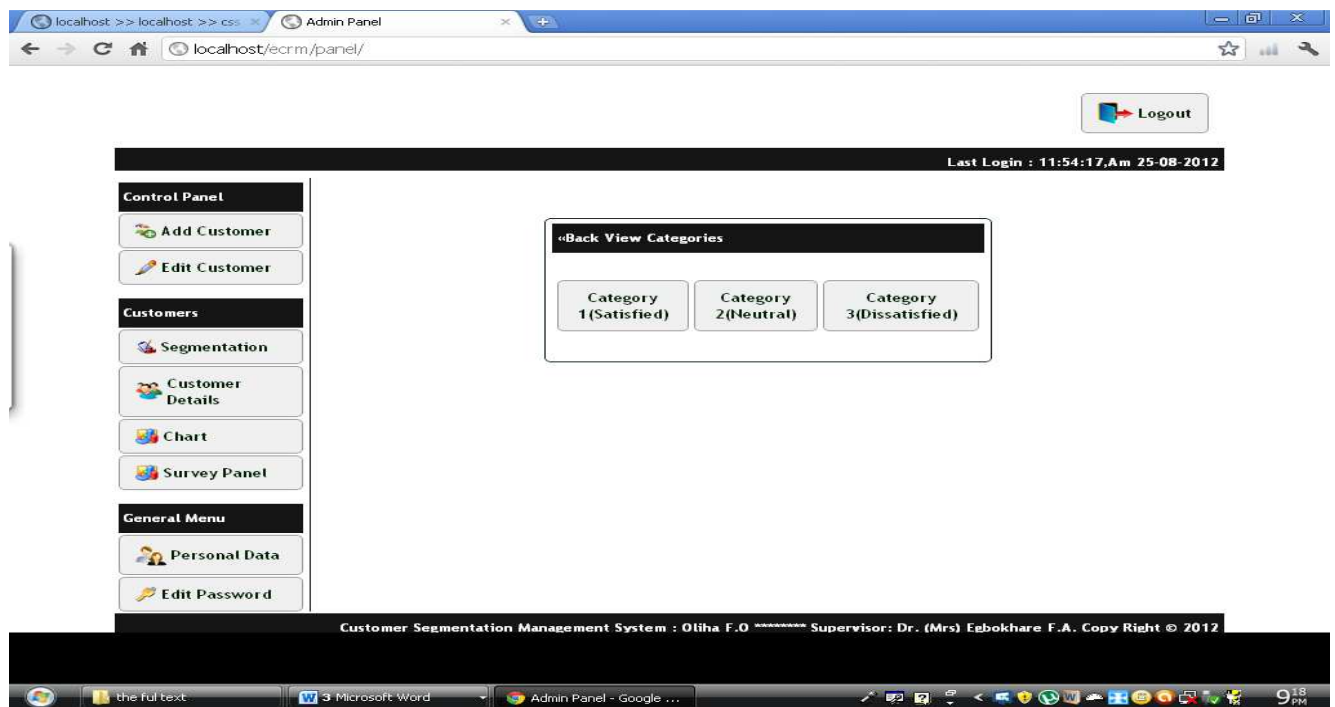


Figure 3: Customer Categorized Segments.

3.1 The Customer Segments

- i. **The Satisfied Customer Segment:** Customers in this segment are those who continually acquaint themselves to a company's product or service, as that company is deemed fit to meeting their needs and changing demands.
- ii. **The Dissatisfied Customer Segment:** Customers in this segment are those who were probably satisfied, but are having problems with the core values of the company's product or services. These sets expect the service providers to be able to meet their basic desires and when there is a failure to such customers' expectations, they are dissatisfied.
- iii. **Neutral Customer Segment:** Customers in this segment are those who do not tell if they are satisfied with the product or service being offered. They are sometimes referred to as wandering customers, having not the ability to be decisive of what their wants or needs are. They are neither satisfied nor dissatisfied.
- iv. **Highly Satisfied Customer Segment:** Customers in this segment are those who were of the mindset that their needs and demands are well understood and managed by a certain service provider. The sets of customers are most likely the loyal customers.
- v. **Highly Dissatisfied Customer Segment:** Customers in this segment are highly dissatisfied with a company's product/service as a regard to failed expectations or usual unfulfilled promises by a certain company. Such are of the perception that the company is no longer able to satisfy or meet their basic and core needs.

3.2 The Categorized Customer Segments

This module consists of categories of segmented customers that have managerial information to facilitate decision making for e-CRM managers:

- i. **Neutral Category** which consists of customers in the neutral customer segments.
- ii. **Dissatisfied Category** which consists of customers in the dissatisfied and highly dissatisfied segments
- iii. **Satisfied Category** which consists of customers in the satisfied and highly satisfied segments

Summarily, it is obvious that, with increased capabilities in Information Technology as an enabling component of e-CRM, segmentation of customers has been made feasible and has helped us in this research to understand customers and what they (customers) experience from the service providers, and provided the providers the amount of customer information in order to address customers individually or as a segment.

4.0 Conclusion

This work presented customer segmentation as the core of e-CRM systems. An automated system for customer segmentation, knowledge and information management was also proposed to generate a wide range of information on customer perception of needs which organizations can customize to fit their services or products to satisfy customers whose needs are within their business scope. We conclude therefore that a proper implementation of the formulated framework and the developed e-CRM segmentation system can resolve the bottlenecks faced by managers in service providing firms with respect to customer relationship management.

5.0 Recommendation

In order to survive the booming competition of retaining customers, organisations or companies that would adopt e-CRM for supporting business initiatives, growth and attempting to maximize the potential of each customer relationship should note that customers are with diverse perception of needs. They can decide to leave a company for another when they feel that the company can no longer meet or satisfy their needs and on this notion, it is therefore recommended that:

- i. Organisations should therefore address customers with respect to their product/service usage behaviour, demographic and life style characteristics, preferences, needs and attitudes.
- ii. Since some set of customers share common characteristics, a single framework should not be used to manage the entire customer base of the organisation.

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