

A STUDY ON THE IMPLEMENTATION OF MARKETING DECISION SUPPORT SYSTEM

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This thesis was submitted in partial completion of the Master of Science in Management Information System requirements.

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This Thesis/Project titled “A STUDY ON THE IMPLEMENTATION OF MARKETING DECISION SUPPORT SYSTEM”, submitted by Pulak Mandal to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of MS in Management Information System and approved as to its style and contents. The presentation has been held on 24 January 2023.

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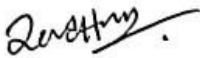
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ABSTRACT

Every organization is affected by the unstable economy. Tax, cost, competitive, human, and financial pressures besiege it from all sides. Today's new tendencies of globalization, privatization, and liberalization have increased competition in the industry. To obtain a competitive advantage, businesses must therefore carefully plan and carry out each of its various components. If implemented correctly, the Marketing Decision Support System (MDSS), one of its components, can be a source of outstanding performance. This document makes it possible to become familiar with the various elements of MDSS. A growing trend in the field of marketing that uses decision support system (DSS) technology more frequently to improve decision-making is the development and implementation of marketing decision support systems (MDSS). In order to pinpoint potential advantages and restrictions of MDSS, this study examines current developments in MDSS applications and technology. The research backs up the idea that an MDSS can be a useful decision-making tool.

Despite these interdependencies, the integration of DSSs and CRM solutions has not been sufficiently taken into account in studies. In terms of knowledge-driven marketing in B2B marketing, this paper's original contribution is the integration of marketing DSSs and CRM from both a theoretical and practical standpoint.

LIST OF FIGURS

SI No.	Name of Figures	Page No.
1	Types of Marketing Management Support System	9
2	Data Road-Map	14
3	Structure of MDSS	27

CONTENTS

SI No.	Name of Contents	Page No.
CHAPTER-1		
1.1	Introduction	1-2
1.2	Introduction to DSS and CRM	2-3
CHAPTER-2		
2.1	Decision Support System (DSS)	4-5
2.2	CRM: An Overview	5-6
2.3	DSSs and CRM	6
2.4	Digital Technology and Marketing Strategy	6-7
2.5	B2B and B2C Context	7
2.6	E-Commerce	7

2.7 B2B and B2C Similarity 8

2.8 B2B and B2C Differences 8

CHAPTER-3

3.1 What Is A Marketing Decision Support System (MDSS) 10

CHAPTER-4

4.1 Review of Literature 10

4.2 Overview of MDSS and Related Literature 10-12

4.3 B2B-Specific Related Literature 12-13

CHAPTER-5

5.1 The Structure of Proposed Marketing DSSs 14

5.2 Customer Profiling 14-15

5.3 Frequency of Purchases 15

5.4 Size of Purchases or Monetary 15

5.5 Regency of Purchases 15

5.6 Identifying Typical Customer Groups 15

5.7 Computing Customer Lifetime Values 16

5.8 Prospecting 16

5.9 Success or Failure of Marketing Programs 16

5.10 Deviation Analysis 16

5.11	Trend Analysis	17
5.12	Forecast Future Sales	17
5.13	Other CRM Components	17
5.14	Data-Mining Components	17
5.15	Marketing Strategy	18

CHAPTER-6

6.1	Decision Making Process in MDSS	19
6.2	Defining the Problem	19
6.3	Identifying Decision Maker	19
6.4	Gathering Information	19
6.5	Evaluating Alternatives and Deciding	20

CHAPTER-7

7.1	Elements of MDSS	21
7.2	Characteristics	21
7.3	Implementation and Usage of MDSS	21-22

CHAPTER-8

8.1	A Marketing Decision Support System (MDSS) in Action	23
8.2	Benefits of Marketing Decision Support System (MDSS)	24
8.3	Limitations of Marketing Decision Support System (MDSS)	24

CHAPTER-9

9.1	Content of Service Sector Case Study	25
9.2	The Problem	26
9.3	The Solution	27
9.4	Database	28
9.5	Processing	28
9.6	Outputs	28
9.7	System Benefits	28
9.8	Results of Proposed DSS	28-29

CHAPTER-10

10.1	Risks	30
10.2	Conclusions and Future Research	30-31
	References	32

CHAPTER-1

1.1 Introduction:

The development of decision-support systems (DSSs), which can be crucial in the development of an enterprise, is made possible by advancements in computer technology and information-handling methods that are computer-based. There is a desperate demand for technologies that can improve marketing decision-making. It has taken a lot of sweat to create the right software solutions that can assist marketing directors. Information system operations jobs are widely available in the marketing sector. A corporation can manage the growing information intake and improve its quality with the aid of cutting-edge information technology and information systems. These marketing-decision-support systems (MDSSs), which are intended to be utilized in complex marketing decision-making challenges, are becoming more and more popular (Talvinen, 1995). "A coordinated collection of data, models, logical tools, and computing capacity by which an association absorbs information from the environment and transforms it into a base for action," is the definition of an MDSS (Little, 1979). The artificial revolution gave rise to the generalizations of mass production and mass marketing, but new ideas are replacing them in which customer relationships are the primary concern. At the moment, businesses are focused on increasing client value through client lifecycle analysis. "Vend- make- redesign" is taking the role of the outdated "design- figure- sell" perspective on products (a client- acquainted view). The new strategy of one-to-one marketing is posing a challenge to the conventional method of mass marketing. The goal of marketing in the conventional procedure is to increase the number of visitors and the clientele. But it makes more sense to do business with current guests given the hefty cost of luring in new ones. In a business-to-business (B2B) setting, massive amounts of information are regularly exchanged. In the area of information technology (IT), one of the terms used in marketing the most is "B2B." A B2B process, to put it simply, is any transaction between two businesses that involves digital technology. A rise in B2B demand could potentially be of far less relevance than a rise in B2C demand (Berthon et al, 2003). The internet offers the possibility for lower prices for goods and lower sale expenses, but this isn't just inferred from the internet as a dispatches structure, which is what is driving the explosion in internet-based B2B. (Kuechler et al, 2001). Likewise, modern associations now gather enormous amounts of data on a variety of topics, including payment histories, financial transactions, loan operations, and others, thanks to advancements in computers, databases, dispatches, and internet technologies. This size of data analysis and the process of turning it into knowledge to support

decision-making bring innovative new difficulties. CRM has emerged as one of the most important corporate tactics in the current renaissance. Finding an accurate and comprehensive description of CRM is challenging. The structure and management of relationships with guests can still be summed up as "directorial sweats to manage business contacts with guests by merging business procedures and technologies that aim to understand company's visitors." CRM encompasses all client acquisition, client retention, and client civilization procedures (Hwang et al, 2004). A new class of automated technologies called data mining is used to unearth knowledge that is concealed in vast amounts of data. It's crucial to support sphere moxie in order to form superior judgments and new IT strategies in order to advance B2B marketing (Changchien and Lu, 2001). In order to further support marketing beliefs, data booby-trapping techniques are useful (Bose and Mahapatra, 2001). This paper focuses on a very specific DSS for request directors who wish to create and implement effective B2B marketing campaigns by fully utilizing a customer database. This is significant since many businesses spend a lot of money connecting houses that could be accessible to tailored marketing dispatches as a result of the increased interest in marketing. The convenience of data storages integrating behavioral, psychographic, and demographic data makes this even more crucial. In this study, we will focus on data mining models and analysis-driven DSSs for B2B requests. By analyzing client data, it is possible to correlate the purchasing behaviors of specific visitors and groups, but it also enables the development of individualized marketing strategies that provide unique marketing advice for each client. The goal of DSSs is to provide directors with information that will help them find a stylish solution from a wide range of options and comprehend the colorful directorial aspects of an issue. The structure of the essay is as follows.

1.2 Introduction to DSS and CRM:

Most of the top businesses in the world are always seeking for new methods to enhance their performance. They implement modern systems like Enterprise Resource Planning (ERP), Client Relationship Management (CRM), and Decision Support Systems into the organization in an effort to improve their work quality and develop their client relationships (DSS). The institution's data volume is growing as a result of this. The institution's introduction of business intelligence was prompted by the growing demand for data. With the aid of this technology, employees in the institution are able to utilise the funds properly and according to plan. This supports the company's planned budgets in the long run. There are two different categories of BI software drug users in the script as it is. Business drug users and IT drug users are the two categories of drug users. Business

drug users are small-scale software vendors or merchandisers who don't focus on the creation and functional conditioning of their products. IT addicts focus more on the technology's practical application. They make an effort to incorporate information from diverse sources outside and outside of the company. There are variations in the software utilized depending on the type of stoner.

CHAPTER-2

2.1 Decision Support System (DSS):

A decision support system (DSS) is an interactive, computer-based tool that breaks down complex problems using data and models.

The goal of Decision Support Systems is to improve and speed up the processes by which an organization formulates and communicates decisions; in most circumstances, the focus of DSSs is on increasing both organizational and individual effectiveness. It's really difficult to determine exactly where the vertical and horizontal interconnectedness of different company functions is highlighted.

A DSS is a coordinated set of information, system tools, and methods with accompanying software and hardware by which a company collects and analyses pertinent data from industry and the environment and uses it as a foundation for making operational decisions. The system, which is typically based on a model and computer software program, uses a set of input data to characterize the defenses of particular marketing beliefs and/or advocate particular marketing behavior. This data might be stored in the DSS permanently, entered into the relevant script, or both. The information can be classified as either primary information (such as deals and cost data from business records or private assessments by directors of the likely effects of increased advertising spending) or secondary information (such as deals of rivals' products from a distributed database created through store inspections).

The facilitation of "what if" analyses, or the perceptivity of the best marketing approach to the hypotheticals in the input data, is a significant feature of many DSSs.

In a methodical view, DSSs are classified into four main corridors:

- **Input:** include logical models and large or low-volume databases.
- **Processing:** includes interactive simulations and tools for data analysis.
- **Outputs:** specialized reports, analysis of decisions, and answers to inquiries.
- **Users:** Managers and professionals.

Associations are becoming less complex as a result of a focus on decentralized decision-making. Enterprise DSSs are required by this trend in order to make successful decisions. In the decision-

making process, decision-makers integrate various data types (such as internal data and external data) and knowledge kinds (both wordless information and unequivocal knowledge), both of which are present in the institution in vivid forms. The decision-making process itself produces new knowledge and improves comprehension of the problem and the procedure. In other words, the processes of making decisions and creating knowledge are interrelated.

2.2 CRM: An Overview:

The four fundamentals of a straightforward structure—know, target, sell, and service—define CRM. The establishment must be aware of and comprehend its customers' needs. In order to select the most profitable guests and recognize those who are no longer worth addressing, this requires in-depth client knowledge (Rygielski et al, 2002). CRM also involves creating an offer that specifies which goods to sell to specific visitors and via what channel. Businesses employ movement operation in sales to boost the efficiency of the marketing division. In the end, CRM aims to keep its visitors by offering services like call centers and assistance departments. CRM is essentially conceived in two stages. Mastering the fundamentals of establishing client focus is the first stage's duty. This entails changing the focus from product exposure to client exposure and defining the request strategy from the outside-in rather than the outside-out. Client needs should take precedence over product features. In order to negotiate functional CRM conditioning, analytical CRM gives all aspects needed to analyze client attributes (activities). In order to implement a successful CRM strategy, an organizational data storehouse is essential. Most businesses have sizable databases filled with financial, human resources (HR), and marketing data. Even yet, the marketing data emporium may only provide a small portion of the data required for CRM. The CRM system must then analyze the data using data mining and statistical methods. Marketing experts must comprehend client data and commercial imperatives regardless of whether the institution employs conventional statistical methods or one of the data mining software products. The establishment should use data mining judges who will be involved but also watch out for the establishment's initial intent when conducting data mining. Having the appropriate individuals who have been taught to value information with these technologies is crucial. The request is ultimately divided into sections, and judgments are made about which components are attractive. Crusade prosecution and shadowing are the CRM system's final component. These are the procedures and frameworks that enable the stoner to plan and carry out precise dispatches in a trial-and-error environment. Through crusade prosecution and shadowing, data mining and online logical processing (OLAP)-based

opinions are propagated. Currently, software solutions exist that assist sales departments in managing this intricate feedback process. Software used for movement operations organizes and tracks client deliveries through a variety of touch points, including direct mail, telemarketing, customer care, point-of-sale, email, and the Web. While crusade operating software might play a role in the end result, people and procedures are ultimately responsible for the positive interactions between marketing, IT, and the deal channels. The transformation of client data and client knowledge are two essential components of marketing data intelligence. From a variety of internal and external databases, marts, or storages, raw data is extracted and converted.

2.3 DSSs and CRM:

Despite similar interdependencies, the integration of related systems has not been sufficiently taken into account in the research on DSSs and CRM results. The necessary trade will be supported by proper DSS and CRM integration, and new opportunities for improving the level of assistance provided by each system will arise. By combining decision support and CRM, a community can be built since these two technologies are conditioned to work together. More specifically, CRM's knowledge acquisition, warehousing, and distribution conditioning allow for the dynamic generation and conservation of decision models, improving the decision support process. In exchange, the operation and assessment of diverse decision models, the attestation of decision instances, and a DSS provide the tools for gathering and storing the unambiguous and wordless knowledge of various decision makers as well as facilitating the production of new knowledge. Decision-makers learn fresh information about the particular problem area through experience with similar tools and methods. A specific DSS is built utilizing information extracted from vibrant data sources and models extracted from vibrant knowledge sources.

2.4 Digital Technology and Marketing Strategy:

The rise of digital technology is fundamentally altering how business is done. These adjustments are changing how every business generates wealth and adds value for shareholders. The wide range of crucial computing and dispatching technologies enable institutions to improve customer service, manage company operations, and provide goods and services. An establishment should analyze its active patrons to find opportunities for marketing creativity as it develops a marketing plan to

address the problems of environmental change. Choosing an effective marketing approach could result in better performance (Chang et al, 2003).

2.5 B2B and B2C Context:

B2C is for "business to consumer," whereas B2B stands for "business to business." B2B ecommerce makes use of online channels to sell goods and services to other companies. B2C ecommerce focuses on specific customers. An example of a B2B company might be one that sells office furniture, software, or paper to other businesses. In general, B2B e-commerce is more complicated than B2C e-commerce. It entails more in-depth inquiry, more purchases based on requirements, and less purchases motivated by marketing. Many B2B purchasers have extremely strict restrictions on what they can buy. Therefore, conventional profit drivers like add-ons do not have the same effect. B2B associations did not often have a strong incentive to improve client travel, but this is changing in the current environment.

2.6 E-Commerce:

Researchers contend that internet-based e-commerce goes beyond merely transacting electronically and incorporates a number of pre- and post-sales conditions, including advertising, preserving business relationships, and improving business communication. E-commerce can be classified into the following categories based on the parties involved in the business sale:

- 1. B2C:** the sale of goods and services to private individuals.
- 2. B2B:** the exchange of goods and services between businesses.

In this study, we focus on business-to-business (B2B), a topic that has become less significant for both experimenters and interpreters.

2.7 B2B and B2C Similarity:

There are some aspects that are similar:

1. **Marketing Data:** A customer's segmentation, scores and indications for loyalty, satisfaction, regency, frequency, and wallet share, as well as a history of all campaign offers you've made to the consumer and their responses to those offers, should all be included in marketing data.
2. **Sales Information:** The quotes and proposals you've given to clients and the orders they've placed with you should both be included in the sales information. All quote, proposal, and order data (as you portray them), as well as an indication of the touch point with pertinent touch point information, should be included.
3. **Service Information:** Customers' requests for product support and service, order management activities like returns and complaints, and customer management actions like identifying information updates are all represented in service information. The history and specifics of these encounters, the touch points via which they happened, the pending requests and their priority, and the identification information of pertinent individuals should all be included in this data.

2.8 B2B and B2C Differences:

Relationships are different between B2B and B2C. The terms and conditions of any ongoing business between you and your customers are represented by relationship information. This information serves as a representation of the contracts you have with your clients in B2B interactions. Contracts specify the product, price, level of service, and terms of payment. They have identification, role, and authority information for contacts and administrators (different from identifying contacts), and they are connected to a customer's organizational entity. When it comes to business-to-consumer transactions, this information may be represented by warranties or service contracts that include terms for the product, pricing, and level of service, in addition to contact information.

CHAPTER-3

3.1 What Is A Marketing Decision Support System (MDSS)?

A method for interpreting and investigating implicit business scripts in order to form judgments about operations. Some companies view marketing decision support systems (MDSS) as a key instrument for getting an advantage over rivals. Decision-makers can be assisted by MDSS rather than having their hands freed by the convoluted scripts that are frequent in marketing.

In order to solve unstructured problems based on operational wisdom, decision proposition, systems wisdom, behavioral wisdom, computer wisdom, and information technology, MDSS assists decision-makers in using data and models. They focus on supporting, rather than replacing, directorial judgment. Together, these three elements provide the marketing director with the framework she needs to make decisions.

A force of marketing-based knowledge is the Marketing Management Support System, an IT structure-supporting system that includes a thorough study of marketing-related data.

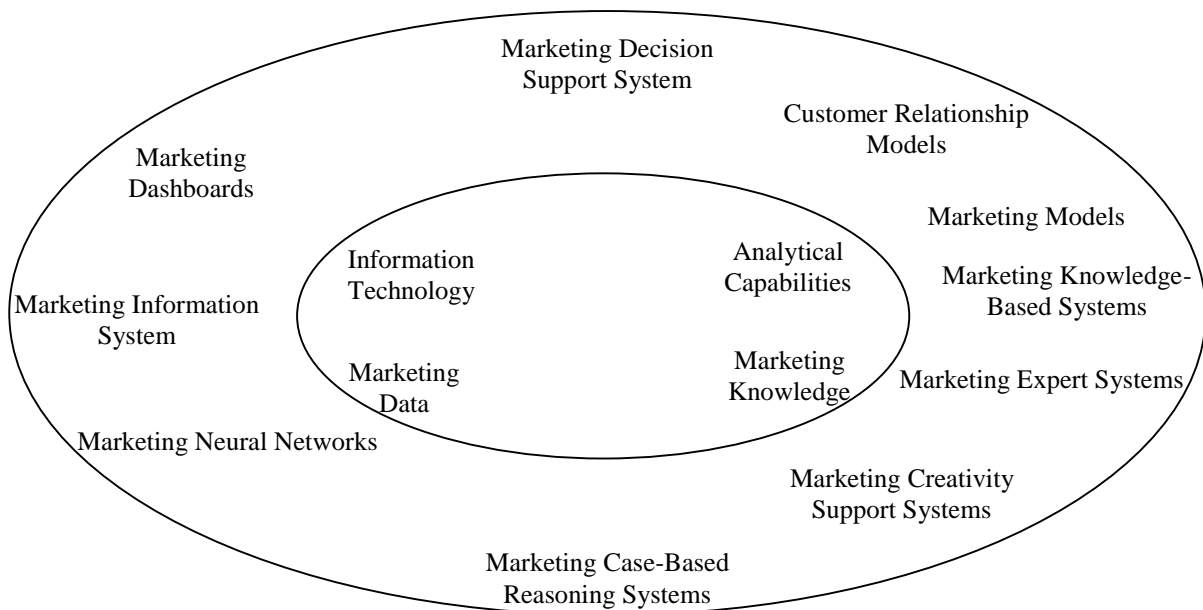


Figure 1: Elements of Marketing Management Support System

CHAPTER-4

4.1 Review of Literature:

External environmental factors, organizational factors, task terrain elements, stoner factors, and perpetration factors all have a significant impact, according to Wierenga B. et al. (1997). Relinquishment and operation rates are intended to be higher for consumer goods companies than for businesses engaged in business-to-business transactions. SternD. (2003) explored the fact that although many associations have used marketing decision support systems extensively, there is still a readiness for its complete implementation. Exploration revealed a lack of comprehension, therefore the experimenter developed a number of educational programs that may help a director become a proficient reader. According to BaggioR. Et al. (2005), the impact of decision support systems on tourist assiduity was highlighted. We've established a key experimental framework that showed a combined horizon of distributed knowledge, data, and model bases. He asserts that any business can be successfully managed provided the assessment of the relationship is made with consideration for both home and international operations. By relying on information gathered from branch, local, zonal, and head office repliers of State Bank of Patiala, Bhatia A. (2011) focused on the identification of certain characteristics for the creation of a DSS frame in the instance of the banking sector.

4.2 Overview of MDSS and Related Literature:

This section addresses related topics while also providing a brief summary of the marketing DSS literature. But among other things, the system's support model affects how well these benefits are realized. A review of relevant DSS literature was also done.

The first functional area to embrace an operation information system model and tailor it to manager needs was marketing popularized the phrase "marketing nerve center" and described how a company may designate a specific place for its computer coffers to assist marketing efforts. Mitchell and Wilson (1998) examined some of the most recent recommendations for when and how to respond to B2B queries. The idea of relationship operation in the marketing field has grown in importance since the early 1980s. A company's efforts to carry out additional targeted marketing

juggernauts are seriously focused on attracting and keeping the most lucrative customers. Information on client value must be gathered in order for CRM to be effective. Many have thought that benefit of client retention (CLV).

Since no two customers are the same from the standpoint of niche marketing (they have distinct continuation values or purchase behaviors), even if they purchase the same goods or services, request segmentation is important. Software is becoming less effective at highlighting the importance of guests' continued worth (Berger and Nasr, 1998). The usage of CLV has been considered in numerous studies. It has typically been measured using the regency, frequency, and financial (RFM) approaches (Kahan, 1998; Miglautsch, 2000). The idea has been used to group visitors for specialty marketing (Haand Park, 1998). Vaticinator models have placed a lot of emphasis on projected future income inflows derived from past profit donations made by visitors. A CLV model taking into account once profit gift, implicit benefit, and client dereliction likelihood is suggested by Hwang et al. (2004). Marketing's foundational idea is segmentation. Only 30 additional papers in the Journal of Marketing and 50 additional papers in the Journal of Marketing Research were found when this keyword was searched in composition titles. In the early marketing operations, it was common practice to divide a population of visitors into homogeneous groups using clustering methods without the use of a dependent or target variable. Nevertheless, marketers understood that segmentation should serve as a tool rather than an aim in and of itself. Marketers quickly discovered that segmentation should ensure that "better" guests are isolated from other guests because most businesses want to maximize gains (or some other volume, such as bargains). This primarily explains the capacity of fashion clustering methods utilizing a dependent variable similar to automated commerce discovery using chi-square (CHAID). Another crucial component of database marketing is the function of segmentation and predictive modeling (DBM). Subsystems in marketing information systems (MKIS) support the evaluation of new products, ratiocinating demand or deals, product omission, pricing strategy, estimating deals profit, creation strategy, calculating operating budgets, choosing advertising media, assigning deals representatives to homes, approving client credit, positioning of installations (such as storages or stores), routing of salespeople or deliveries, calculating profitable order amounts (EOQ), and calculating reorder. The relationship between marketing information systems (MKIS) and other marketing and operationally relevant IS, such as MIS and DSS, was clarified by Talvinen (1995). Client-centered logical operations fall under the categories of business intelligence (BI) and decision support (we use these terms synonymously). They aren't business-related software programs. Because you can analyze business with their tools. Additionally, there are many different kinds of logical operations that may

be performed within BI or DSS, including client-centric or CRM analytics, business operations analytics, fiscal analytics, and force chain analytics, to mention a few. We define the field as client-centric intelligence because our interest, or more specifically our commercial focus, is on the client. We are particularly interested in client-centric logical operations, also known as CRM analytics or logical CRM client-centric logical operations are tools that help make you more client-concentrated. While King and Cleland (1974) acknowledged the MKIS importance in formulating marketing strategy.

4.3 B2B-Specific Related Literature:

The intense push to increase the efficiency and efficacy of marketing initiatives in B2B requests necessitates novel solutions to age-old issues.

The formulation and application of logical strategies derived from the artificial institution economics proposition might be beneficial for strategic opinions in company requests (Sashi and Kudpi, 2001). Compared to B2C inquiries, B2B requests feature closer buyer-dealer connections, better technology, and greater information exchange compared relationship marketing between B2B and B2C. Wouters (2004) investigated how artificial associations create their client service strategies and the effects this has on their B2B marketing strategy.

According to Wouters (2004), the following information elements are crucial for B2B marketing:

- 1. General Information** (such as company name, number of employees, past and present development times, geographic location, descriptions of key products and processes, relevant stakeholders, etc.);
- 2. Marketing and Sales Information** (e.g. development last time, development coming time, total request volume, request share, major trends, request support, product range, product quality, logistics and people grounded service, etc.).

B2B client- related conditioning are:

- Accept and reuse client orders;
- Pre-sales conditioning services;
- Product/service delivery via the web;
- Post-sale service (complaints, support, etc.);

- Distribution conditioning (force chain collaboration, etc.);
- Gathering and analyzing client data; and
- Accepting and reusing client payments are all examples of B2B client-related conditioning.

Deeter-Schmelz and Kennedy (2004) examined related B2B online conditioning literature. Client connections in the B2B space were examined by Easton and Araujo in 2003. Each client has specific requirements, thus juggling them generates prioritizing problems. Another issue is director's not receiving information promptly. It follows that an effective client information system, or DSS, might be utilized to identify and assist in resolving latent conflicts and problems.

Over 50 benefits and 40 drawbacks that may affect businesses when they use e-commerce in B2B operations were found in a review by Pires and Aisbett (2003) of a sample of 21 studies in the business and academic literature.

CHAPTER-5

5.1 The Structure of Proposed Marketing DSS:

Customers of today have such a wide range of likes and preferences that it is impossible to create marketing plans for them as vast, homogeneous populations. Each customer, in reality, wants to be attended to in accordance with her particular and special needs. Most associations have built up enormous databases regarding their consumers and their buy deals as part of database marketing, which is characterized by marketing methods based on the wealth of information accessible from client and sale databases. This need is met and helped with by knowledge- grounded marketing, which makes use of useful data mining tools and knowledge operation framework. Figure 1 depicts the proposed MDSS's component parts.

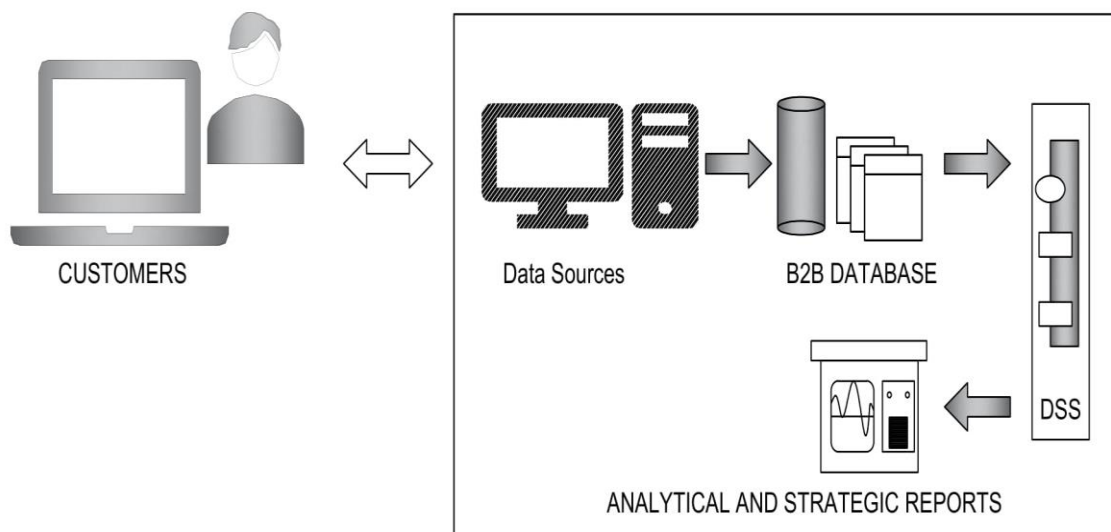


Figure 2: Data Road-Map

5.2 Customer Profiling:

Customer profile is one of the helpful pieces of information about a client, and it is employed to form numerous crucial marketing judgments. A client profile is a representation of the client, based on which the marketer chooses the best techniques and methods to satisfy that client's needs. A marketer is curious on the client's demographic information as well as the features of the client's buy deals as they learn about the client biographies. We give a list of sale qualities that can assist the marketer in creating valuable client biographies, and we discuss how data mining tasks like

reliance analysis, class identification, and conception description can be employed in client profiling.

5.3 Frequency of Purchases:

How frequently do customers purchase your goods or services? The marketer can create targeted promos like frequent buyer programs by being aware of this.

5.4 Size of Purchases or Monetary:

How much does the consumer typically spend on a transaction? The marketer can better allocate resources to the consumer who spends more with the use of this information.

5.5 Regency of Purchases:

When did this client's most recent order come in? The marketer may investigate the causes of a customer's or a group's prolonged inaction and take appropriate action. This can frequently be attributed to the client leaving that position or changing their fidelity.

5.6 Identifying Typical Customer Groups:

By class identification or conception description, it is possible to determine the features of each group. A targeted offer and client knowledge will increase response rates significantly above broad communication.

5.7 Computing Customer Lifetime Values:

Customer profile data paired with product and promotional statistics can be used to calculate customer lifetime values, a metric to determine what is happening to the size and worth of a customer base. Customer lifetime values are asset measurements that can be used by marketers to evaluate their outlays by assessing how effectively a plan produces assets.

5.8 Prospecting:

Customer profiles, particularly their purchasing habits, provide marketers with information about potential clients.

5.9 Success or Failure of Marketing Programs:

Client databases provide precise data on the outcomes of marketing initiatives. The database and associated marketing programs' buying patterns can be used by the marketer to measure the short- and long-term benefits of the campaigns.

5.10 Deviation Analysis:

An extremely crucial skill for a marketer is understanding deviations from the norm. A divagation might be a change or an anomaly scam. Similar detours in the past were challenging to spot in time for correction. Tools for data booby-trapping provide crucial methods for identifying and detecting comparable deviations, much like neural networks. When a divagation is exposed as a fraud, the marketer steps in to prevent future frauds of the same nature and starts the necessary corrective action. If the divagation has been identified as a change, additional data collecting is required. An example of a change would be if a client moved and/or gained a new job. In this situation, the marketer must update their understanding of the customer. A marketer can query past changes as a result of recent price increases or decreases by using the deviation finding capabilities.

5.11 Trend Analysis:

Patterns that continue over time are called trends. Trends can be short-term, like the sales' initial rise and then gradual decline after a sales campaign. Alternative long-term patterns include the gradual flattening of a product's sales over a long period of time. Data booby-trapping tools, which are comparable to visualization tools, assist us in seeing trends in the database that, if not for data booby-trapping tools like scatter plots, would have gone unnoticed. Trends can be utilized in marketing theories to project future sales or to estimate marketing plans.

5.12 Forecast Future Sales:

One of the common applications of trend analysis is to predict future sales. Marketers are curious to discover how different marketing initiatives will impact upcoming product sales. Data mining enables the detection of subtle associations, such as the correlation between a product's sales peak and a shift in the demographics of a certain consumer group.

5.13 Other CRM Components:

In the proposed DSS, we included four essential methods for CRM based on knowing customers better:

- Identifying the correct customers;
- Tailoring the product or service to the needs of specific customers. CRM research now focuses on the client interface and client relationship management. However, associations' efforts to manage their client relationships, particularly the marketing function, continue to be hampered by hesitant information about visitors and the absence of a methodical information operation framework.

5.14 Data-Mining Components:

Decision makers employ technologies that provide OLAP, inquiries, and ad hoc queries to access data warehouses and data marts.

5.15 Marketing Strategy:

Conducting internal, competitor, and client assessments as a first step in developing strategies for demand segmentation, targeting, and positioning is part of developing a successful marketing strategy.

CHAPTER-6

6.1 Decision Making Process in MDSS:

Initially, choosing the best practical course of action from the given options was entirely a cognitive activity. Nevertheless, this was a time before decision assistance systems existed. Currently, automated software systems play a significant role in decision-making. However, if we carefully examine the order or stages of decision-making, we may detect a tiny deflection.

In this more complex time, decision-making is facilitated by motorized systems. Following are the steps in a decision-making process.

6.2 Defining The Problem:

The first step in problem definition is admitting that there is a problem. When one of the following occurs, there is a problem:

- Anticipated and delivered differ;
- There is a departure from the norm; and
- The action conducted isn't maintainable.

A DSS analyzes deliverables and delivered to define the issue and any issues connected.

6.3 Gathering Information:

When a problem is assigned to the appropriate individual, they can start gathering information and linking the variables that are affecting the situation. Data collection and analysis will take too long without DSS. In just a few seconds, a DSS may reuse lots of data.

6.4 Evaluating Alternatives and Deciding:

At this stage, you must go through all feasible options and choose the best one by weighing the advantages and disadvantages of each choice. A DSS aids in defending a certain decision.

6.5 Implementation and Follow-Up:

Once a decision has been made, it is time to follow through. It's time to submit an application. Again, implementation requires much forethought. Monitoring is necessary to ascertain whether a specific choice aids in accomplishing the goals. It can require some adjustments or create a brand-new issue. If this is the case, you might have to go through the full procedure again.

CHAPTER-7

7.1 Elements of MDSS:

The feasible immediate external and internal terrain has always huge impact on the decision timber of the association. MDSS too has been vulnerable to it. An association should develop a database for both internal as well as external terrain. Data reclamation from different sources, position of information to be upheld and compass of content are decisive factors for the creation database.

7.2 Characteristics:

A MDSS always:

- Support rigidity, when an MDSS shows content according to the query criteria set up for, say, Instead of any director who must follow a thorough analysis of the subject area, a member from high position operation may be preview with further overall associated issues.
- Facilitates discovery; for example, a director can always formulate a problem description, identify outcomes, and (if practical) instigate a trend line that clearly defines the previously known information.
- Understands the outcome of a problem for a new bone that is incompatible with computer language, in which case it may even throw out the introductory formalities and offer data supporting simply the key aspects of it.

7.3 Implementation and Usage of MDSS:

- Any association that frequently employs such a method needs to revise its organizational structure.
- It needs top-notch operating assistance, obviously. A system cannot possibly succeed if Top operation doesn't make a conscious effort to fully equip its organizational foundation with its endurance, strength, and effectiveness. In order for the system to be implemented at the

foundation of an association, it is essential that the organizational members are aware of how it operates and all of its components, benefits, etc.

- Further, involving functional position directors in the decision-making process may make it more respectable and result in more beneficial outcomes. A statement will also gain more information from such an attempt. In comparison to other sources, information obtained from comparable ones does really tend to be more reliable. It can introduce "what if" questions to the stoner with ease.
- Similar viewpoints have a longer-lasting impact on an establishment's content. Similar viewpoints have to have consequences for establishment. As a result, every proposed design and its wording must be accurately written.
- For perspectives like maximization of profit or shareholder wealth or company happiness, i.e., whose aims are achievable in genuine or specific incremental ways, to be recognized, the deciding variables in the Marketing Decision Support System must be identified.
- The terrain outside is continually changing. In order to solve problems, it is necessary to conduct an environmental scan that takes into account both the perspectives that can be crucial for a company and those that are pointless.
- The director's expertise, threat-taking capacity, charisma, etc., are crucial for such a system because they help the establishment to choose among the various perspectives in the best way. Thus, MDSS is implanted with the guidelines for the unborn.
- A MDSS must distinguish the fashionable one from the colorful druthers, or the live line must be appropriate to admit the best from the given set of druthers, in order to advance the interests of many stakeholders.
- Organizations must survive in difficult times that are constantly changing, thus they cannot rely solely on MDSS; instead, they must also engage in group conflict. Cohesion within the group will enable an association to comprehend the unique aspects of the decision and its dragging effects, enabling the association to thrive in the same intense competition.

CHAPTER-8

8.1 A Marketing Decision Support System (MDSS) in Action:

A significant division of one of the biggest pharmaceutical companies in the world wanted to treble its sales growth in 1992, but marketing managers were flying blind in terms of comprehending their being request share and focusing on high implicit requests for their products. Finance and manufacturing requested to improve their prophecy, and marketing directors demanded to better comprehend their being requests and request eventuality.

Drug addicts were involved at all phases of the development process because the company recognized the crucial role they play in the successful implementation of a system. Models were introduced once the data storehouse was finished to aid in integrating, consolidating, and epitomizing information as well as to provide tools to enhance business shadowing and operation conditioning. The system supported marketing decision-making by using data on competitor request share, promotional spending, environmental trends, pricing agreements, and other factors. The business also had the capacity to cope with the effects of promotions, the effort of the sales team, and the financial effects of marketing initiatives. The distribution, manufacturing, and sales departments were equipped to prevent backorders, reduce overproduction, and enhance vaticinators.

"The MDSS allowed sales operation to measure the success of the deals association by covering factualism," according to Gaskin (1994). Estimate performance and soothsaying efficiency. Deals with the capacity to meet the competition are provided by traditional volume effort and estimated request share. Directors had the ability to change course and launch new programs as needed because they were aware of the request, the competition, and the performance of their own deals.

Overall, the company has been greatly impacted by the MDSS. Drug addicts now have easy access to information that was previously too delicate to decide. Information moves much more quickly throughout the organization, and the MDSS modeling capabilities have sped up and improved the quality of critical marketing and sales opinions.

8.2 Benefits of Marketing Decision Support System (MDSS):

First of all, MDSS are useful for capturing unbiased data to evaluate marketing issues. By merging and homogenizing information sources and by including the speed and simplicity of data reclamation, they can assist associations in managing information overflow. Marketing directors can experiment with vibrant marketing blend tactics and analyze the effectiveness of various scripts thanks to modeling capabilities and other cutting-edge technology that characterize MDSS.

Thus, MDSS aid marketers in tackling a number of the complicated problems they encounter, such as soothsaying, the introduction of new products, and the analysis of market trends.

Additionally, MDSS are adaptable and malleable over time, enabling the decision-maker to combine, delete, add, or rearrange introductory rudiments, providing quick response to unforeseen circumstances. An MDSS aids in creating a crucial community for the decision-making process while cooperating with the marketing director's expertise and suspicion (Cassie, 1997). This results in a hasty assessment of choices and advanced marketing opinions.

8.3 Limitations of Marketing Decision Support System (MDSS):

While it's true that adopting an MDSS can provide marketing directors with good decision support, it's fairly obvious that the full potential of MDSS has not yet been realized. In fact, experimenters and marketing analysts have also predicted that MDSS consistently break their promise and that drug users frequently get dissatisfied with the outcomes.

Even though it's typically thought of as one of an association's vital functions, marketing was one of the last and least effective industries to benefit from the DSS revolution. In other words, compared to DSS utilized to help decision-making in other functions, MDSS are less developed.

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The failure of an MDSS to be used may be its biggest and most important flaw. This is accurate, especially in light of the current MDSS realm's restrictions.

CHAPTER-9

9.1 Content of Service Sector Case Study:

The informational component of services it is acknowledged that selling information is a significant component of the best services. Nevertheless, information has typically been seen as a means to supplement the initial service and improve performance rather than as the primary emphasis for segmentation purposes. Information is traditionally viewed as being one of eight auxiliary services that are necessary for clients to receive the full value of any good or service, along with order taking, keeping records, billing, discussing, hospitality, handling exceptions, and payment. Information technology can be utilized to make services more tangible, as well as a tool for assessing customer behavior and changing marketing tactics.

"Incremental disparities in organizations' powers to acquire, distribute, store, analyze, and bring information-based conduct" frequently decide competitive success. As we progress farther into the era of virtual business, the capacity to manage and utilize information technology is seen as being extremely crucial. To counteract the "increasing pressure of commoditization," it will become less crucial to develop new isolationist tactics as information about products and services becomes more readily available to customers and competitors. Information is the main service in a number of diligences, despite being vital as a supporting component for many different sorts of services. According to the sort of service provided and the charity providing it, services are categorized into four categories: palpable conduct toward people's bodies, palpable conduct toward physical effects, impalpable conduct toward a customer's thinking, and impalpable conduct toward impalpable methods. Information processing services are the broad category that covers financial services as well as account, legal, operational, and other consulting services as well as similar services. The information service sector is a sizable one, and it is predicted that by the year 2000, 44% of service sector employees will be employed in the information field. These days, the most important component of information isn't so much the efficient use of information technology to collect, store, and analyze data about visitors as it is the comprehension of and capacity to cater to the various information needs and capacities of customers. The emphasis is then placed on exploiting information needs to increase client commitment, include more customer participation in the service process, and fortify client relationships. In other words, knowledge is becoming a crucial component of relationship marketing success.

9.2 The Problem:

Case study services also include IT services, specialized training in various fields in central Asia, automotive examinations, commodity examinations, safety evaluations of medical bias, product instrument and conformity tests, quality operation system instruments, environmental quality operation system instruments, artificial systems, and specialized examinations in artificial spots.

It has over 600 active customers who make B2B requests. Better, closer, more is the marketing axiom and the case's stated vision. Their top priority is to outperform the competitors in more ways. For them, being close to visitors and inventions is commonplace. Additional services make up the bulk of the company's portfolio.

Its decision-makers must identify target clientele, create request strategies to meet client needs, forecast client behavior in turn, recommend new services, draw in implicit clients, establish a system for producing new products, and keep active clients.

Between 2002 and September 2004, data for client deals were gathered from the internal data waiters (data storages) and the data storehouse. The dataset underwent preprocessing to value customer sales. Unreasonable records, such as those of clients who have made anonymous purchases but no transactions, were also deleted.

9.3 The Solution:

The DSS was created in the Visual Basic application language, supported by SPSS 12 and Expert Choice, and used an Access 2000 database. It can connect with legacy systems and is PC-based. Figure 2 depicts the DSS's block diagram.



Figure 3: Structure of MDSS

9.4 Database:

Figure 2's left side displays the introductory factors. The following sources of internal data are available (the company's web server serves as the source of external data):

- Customer checks of a subset of customers who respond to in-depth questions;
- Summary tables that define customers (such as billing records);
- Behavioral data found in deal systems (weblogs, credit card records, etc.);
- Account motorized system.

9.5 Processing:

On section 4, the processing component is based. The DSS does analysis and organizes the database. The entire process is collaborative and takes place in a welcoming setting.

9.6 Outputs:

Results are displayed in Figure 2. Related reports are created by combining these outputs.

9.7 System Benefits:

The system offers management and financial advantages:

- Financial advantages: Savings per new sale are predicted to be around \$10,000.
- Benefits to managers include a much improved decision-making process as a result of faster and more accurate analysis.

9.8 Results of Proposed DSS:

The following are the results of the proposed DSS:

- Identify fashionable customers;
- Identify most pious customers;
- Understand how effective and effective marketing, sales, and service business processes, and the operations that apply them, are in addressing customers' needs;

- Tune marketing, sales, and service business processes, and the operations that apply them.

How to create a practical segmentation and relationship marketing strategy that is related to the value donation of the customer base is a major concern for service organizations.

CHAPTER-10

10.1 Risks:

By removing the following flaws, MDSS can help an association drive better issues:

- MDSS has time limits linked with it, meaning that the marketing functionaries may spend a significant amount of their time generating similar MDSS, which may influence their functional responsibilities.
- The confidence of the functional position directors concerned must be taken into consideration when creating MDSS because only the questions asked will yield valid results.
- Those who couldn't separate out honest opinions from it needed to be educated on it in order to work on their impossible goals.

10.2 Conclusions and Future Research:

With its serviceability, the Marketing Decision Support System can work around a number of failing operations. A marketing director may produce the best, most current issues generating a rapid-fire stride towards achieving organizational accomplishment by easing commerce without actually needing a computer programmer. However, several problems, such as allocating directors' maturity time over its growth, may result in directors losing their needed attention on functional tasks.

In order to create the next generation of business operations that can integrate data-mandated approaches with domain-specific knowledge, it is imperative that the data and technologies already accessible be fully utilized. DSSs are an example of an analytical information technology that is well suited for these activities. These technologies can be used to automate expert-driven knowledge discovery and predictive analysis, as well as to employ the outcomes of simulations and models that are based on business acumen. Despite similar interdependencies, the integration of related systems has not been sufficiently taken into account in the research on DSS and CRM findings. This paper's new approach to knowledge-driven marketing in B2B marketing involves the integration of marketing DSSs and CRM from both a theoretical and practical standpoint. Our research provides details regarding a tailored MDSS in a B2B setting, as well as relevant literature

and a conceptual framework. It is then tested using a case study.

There are two directions for our work in terms of future exploration:

- 1. Model-based extension/case-grounded logic (CBR)**, which involves collecting, reusing, editing, and keeping cases. CBR has been well investigated and is used in a wide range of problematic families because it has been proven beneficial in helping people recall facts and knowledge from earlier circumstances. Developing MDSSs with CBR may open up new avenues for investigation.
- 2. MDSS expansion with distributed group support system (DGSS)**, DGSS is a technology that can assist groups in overcoming some of the challenges posed by being dispersed across different locations and, occasionally, time zones. Another important topic is the creation of DGSS for marketing.

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