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A Hybrid Digital Marketing Model based on Content Marketing and Inbound Marketing

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ABSTRACT

To assist marketing strategists in creating various marketing plans for different target markets, lower overhead costs, and boost the effectiveness of online advertising, the study aims to create an accurate and data-driven digital marketing platform. A Hybrid Digital Marketing Framework (HDMF) is designed in this research to combine the content marketing and inbound marketing strategy using big data analytics. This paper primarily introduces big data mining and related technologies, including the decentralized platform, the web browser, and key modules engaged. It explains these technical foundations, operational procedures, and e-commerce sites to present the main applications and implementation strategies. The particular example is chosen as the study object, and its implementation of marketing transformation concerning its particular scenario is examined with experimental results. The entire big data marketing procedure, from data collecting to data application, is executed and summed up through the product marketing effect presentation and outcomes analysis using content marketing and inbound marketing strategy.

Keywords : Digital Marketing, Content Marketing, Inbound Marketing, Big Data Analytics

1. INTRODUCTION TO DIGITAL MARKETING

Digital marketing helps to enhance the online purchase and further helps to increase the sales of the products in all areas like clothings, accessories, electronic gadgets etc. As the usage of the social media splurges ahead these days, digital marketing becomes imperative in reaching out to the target audience. Through digital marketing one can broadcast the marketing ads after a thorough analysis of consumer interests and identifying the target audience. This helps in getting good conversion rate from the leads generated through such ads. Inbound marketing and content marketing are new concepts. Inbound marketing became a "go-to" approach for those searching to actively engage consumers, particularly millennials who have access to vastly more resources and knowledge than previous generations [1]. Thanks to the emergence of search techniques that allow users to obtain information and content quickly. Inbound marketing differs from conventional marketing in that it attracts clients to the business rather than having the firm reach out to them through traditional advertising like print or mass media. Although permission marketing, in which the target audience has the option of receiving marketing communications, is where inbound marketing originated, it has evolved into a distinct technique. Inbound marketing aims to build a website and its content to persuade users to inquire, purchase a product, or fill out a form. The generation and delivery of information through various channels are the only particular techniques that content marketing concentrates on [2].

Content development is the critical component of inbound marketing. Inbound marketing can attract the client willingly by using informative, creative, and helpful material. Consumers are more active, interested, and likely to endorse the message being offered as they watch the marketing message [3]. Many customers have learned to deliberately or unconsciously disregard advertisements to conventional media and advertising. Businesses can increase client involvement and closed sales by utilizing inbound marketing [4].

Content marketing is a strategy of producing and disseminating pertinent, valuable material to attract, gain, and connect to a well-defined and recognized target audience to generate consumer profit and foster customer engagement [5]. This concept focuses on the significance of producing and disseminating valuable, pertinent material that allows for user interaction. Instead of only being concerned with instantly boosting sales, it seeks to build a long-lasting, mutually beneficial relationship. By delivering appropriate materials, brands generate value with a high revenue return from consumer attraction, interaction, acquisitions, and retention [6]. The organization can establish trust and a long-lasting connection with the audiences by considering user-generated content and customer interactions.

The communication process has to adjust its thinking before implementing a content marketing approach. Organizations utilize an inbound strategy instead of outbound messaging, where consumers constantly seek out the brand because it offers them exciting and relevant material that informs and amuses them. Customers are interested and develop a favourable relationship with the brand when the company's soul surrounds the content.

As a result, they are more inclined to purchase the brand's products and engagement, cooperation, and loyalty are made feasible [7].

Users increasingly rely on the internet 'as it develops' since so many activities are carried out online, including commerce, amusement, data, interaction, and sharing. The advancement of internet technology allows for effective user recording. Through the study of these data acquired, advertisers get valuable insights into their behaviour and make predictions about their future actions and decisions based on their past actions [8]. Enterprises carry out precise advertising, promotional, and marketing activities for consumers based on these research and behavioral data collection, efficient data insights to consumers, and delivery of relevant data to the appropriate material at the right moment. Big data in marketing aims to maximize the user's conversion ability, prevent the wastage of advertising 'budget', and produce precise outcomes [9].

This research suggests effective, customer-centric advertising with content marketing. The inbound marketing and service support system into big data analysis is used to turn the opportunities into practical benefits. The study aims to create a support system based on big data analysis, strategy maintenance, and delivery system in the implementation process. The findings demonstrate the system's ability to actualize the advertising and service platform support for consumer perceptions and its accomplishments in customer identification, strategy administration, plan matching, plan conversions, and strategy assessment.

The main contributions of this paper are listed below:

- A big-data based digital marketing model such as content marketing and inbound marketing is suggested in this research.
- This research analyses and discusses key modules available in the architecture with big data.
- An economic framework is proposed in this research with digital marketing strategies and a mathematical model.
- An inbound marketing and content marketing-based implementation system is suggested in this research.

The remaining paper is organized as follows: section 2 indicates the background of the different digital marketing models and their outcomes. The proposed Hybrid Digital Marketing Framework (HDMF) is designed in this research to enhance sales with inbound marketing and content marketing using big data analytics in section 3. Section 4 illustrates the experimental findings and outcomes of the proposed HDMF system. The conclusion and future scope of the study are listed in section 5.

2. Background to the digital marketing strategies

Given the variety of e-commerce sites, it is important to seize all chances for communication and cooperation with all parties [11]. The content's purpose, reliability, and incorporation are the strategic elements. These elements should be established in an incorporated manner and should be a part of the company's overall brand approach.

Granata et al. offered Ukrainian firms proposals for a content marketing strategy to efficiently administer website content to ensure Ukraine's dominant position in the European and global markets [12]. Semi-structured conversations, surveys, observation techniques, content analysis using both quantitative and qualitative methods of local Business to Business (B2B) enterprises, and comparison analysis were used to obtain qualitative information. The following steps in the content marketing procedure were identified and categorized in detail: initial search and research, website content development, promotion and distribution, and content marketing progress evaluation. A company's on-site and off-site content can be utilized to connect with its intended audience and boost brand exposure online, as demonstrated by the strategic choices and actions at each level of the procedure.

The figure of the cyber customer, defined by the desire to convey individuality via the personalization of items or services one purchases, the brands one utilizes, and studied information, appears as one of the most obvious expressions of such a procedure. The buyer frequently checks the prices based on the willingness to pay and the consumer's worth of particular commodities. The circumstances above have shown that traditional marketing approaches, prioritizing the firm over the customer and favouring a largely unilateral interaction, fall short of meeting these objectives. Nieves-Casasnovas explained how online technologies might enhance marketing material [13]. What steps should be taken to improve marketing and communications to build stronger customer relationships? Tools like digital marketing, e-branding, storytelling, etc., are tools to enhance client interactions by establishing long-lasting ties.

Sharma et al. aimed to identify the different marketing communication goals that luxury vehicle manufacturers with social networking presence use in their digital content marketing [14]. It conducted content analysis on Facebook postings to examine five luxury vehicle companies using a longitudinal multiple-case research approach. This investigation identified the types of media material, social media analytics, and marketing communication goals through social networking content marketing methods. The findings indicated that brand knowledge, corporate reputation, and brand resonance are the most often employed objectives.

Research from the previous papers demonstrates that a more developed communicating power or force fundamentally drives a focused crowd. Weng et al. investigated and analyzed several Artificial Intelligence (AI)

techniques to improve targeted web-based advertising [15]. AI-based online targeted advertising methods are widely recognized and divided into categories: client-driven and content-driven methodology, television, broadcast, magazine, and word-of-mouth advertising. The suggested AI computation employs neural network and regression analysis methods to predict data with an accuracy of 73%.

More companies are moving their products on the Internet as e-commerce develops and becomes more popular. As a result, there is a growing global rivalry for selling commodities. This article first discusses the current research condition of association rules mining to increase customer gratification and the business connection with consumers. It provides a summary of the big data method. It uncovers the data consumers are particularly interested in and enhances the website of primary commodities sales [16]. The system application industry was created to enable firms to perform correct client placement through tailored products and services, decreasing their marketing expenses. The upgraded big data algorithm is utilized to analyze and derive frequent patterns.

Grubor et al. reported primarily focusing on leading Indian businesses utilizing Instagram to establish a strong brand and the advantages and future potential [17]. Social media has become the most crucial connection in human lives nowadays, both for interacting with one another and marketing enterprises. Social media content marketing enables advertisers to increase their scope, impact, and ability to provide customers with useful information. Instagram adopted this pattern in 2010 and has since developed into one of the most significant venues for advertisers to engage with customers, even if Facebook and other social media tools are the ones that set the patterns in this digital age.

When developing effective Internet marketing techniques, which are very different from conventional ones, it is important to consider the future trends and lifestyles created by the strength and allure of the online environment. Desai et al. aimed to investigate the foundations of internet-based marketing and analyzed the opportunities and challenges that contemporary businesses should address in their digital marketing techniques, as well as any potential constraints and risks that have emerged in the online marketplace [18]. The study's secondary research strategy thoroughly evaluates previous investigations and research in the subject area.

All the above researches lack efficiency and accuracy [19]. So a hybrid marketing system with content marketing, inbound marketing strategy, and big data analytics is suggested to enhance the overall outcomes.

3. Proposed Hybrid Digital Marketing Framework

The use of big data for customer comprehension and discovery based on market and user attributes for strategy development, and matching is a common thread throughout big-data driven marketing and services. It seeks to contact users through relevant channels at the proper time, enabling users to comprehend strategies and make connections between procedure and outcome assessments for content marketing and inbound marketing strategy. This method's core is utilizing big data to understand and identify the customer. This serves as the foundation for creating the marketing and service approach, and it is ultimately transformed into all marketing and service delivery. As a result, the process serves as the central processing unit. A big-data advertising and support functions system that analyzes consumers and records customers' real-time big data situations as a starting point, via policy-making and policy matching, is feasible to set up, depending on the logic flow of the procedure.

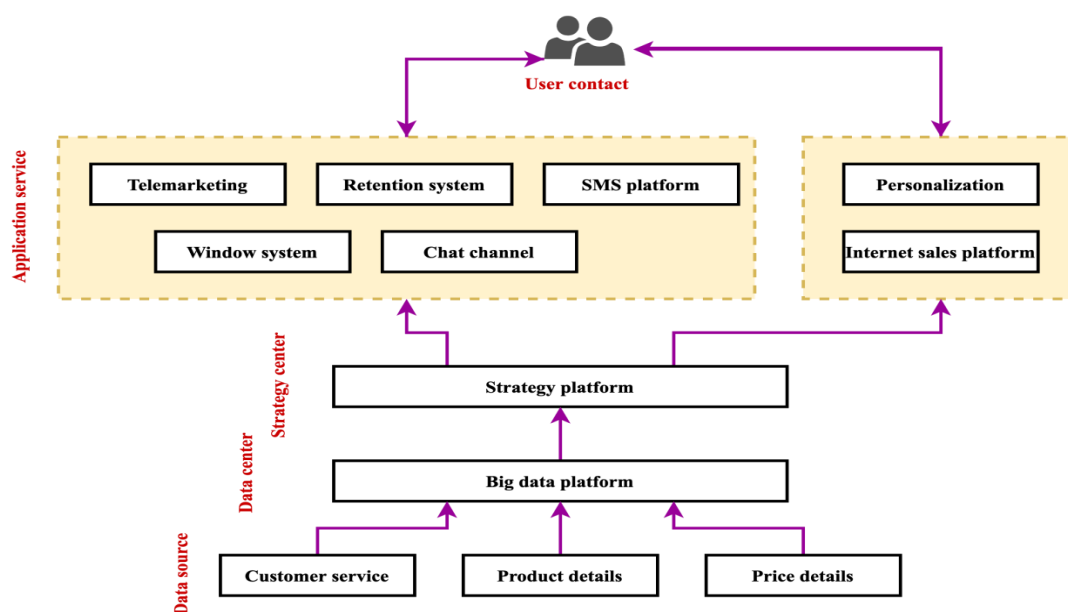


Fig.1:Architecture of the proposed HDMF

The architecture of the proposed HDMF is shown in Fig. 1. The system has five modules, namely data source, data centre, strategy centre, application service and user content. The proposed HDMF with big data analytics, content marketing, and inbound marketing helps increase sales. The data source has customer service, product details and price details. The application service has telemarketing, retention system, Short Messaging Service (SMS) platform, window system and chat channel to enhance sales. The sales data is enhanced by personalization and the Internet sales platform.

3.1 Key modules design

The main modules of the architecture are discussed in this subsection.

- **Function timing design**

The design examined the primary performance time to ensure that each performance module could execute the necessary activity effectively. Each usage of the performance module is connected to it to incorporate content marketing and inbound marketing strategy. Network resources are the fundamental factor in network infrastructure marketing. Adder, communications, network object reading, webpage textual analysis, multimedia collecting, correspondence, and other objects are frequently used for storing and transmitting data sets.

- **Order management**

The combined management system's central component is the order management solution, which must perform various tasks, including data editing, packaging setup, logistics setup, waybill number setup, delivery, and others. The order management system accomplishes the one-stop administration of orders to fulfil the actual demands of merchants. It is organically connected with other systems like inventory control and transportation control through the administration and distribution of requests. Information about the order, name of the order, the items bought, the logistics chosen by the customer, the payment amount, the receiving address, any special needs, etc. The first step is to gather order details. It utilizes the Hibernate framework to direct the connection between the databases.

- **Logistics management**

The secondary construction is done following the Google map Application Programming Interface (API) interaction to implement the vehicle display function in this platform. Google map is employed as the display instrument [19]. The Google map API is a collection of application interfaces created in JavaScript. It enables the construction of map applications with rich features and robust website interactivity, as well as map development using Hyper Text Transfer Language (HTML) elements. The fundamental map function, map central controlling process, covering feature, position feature, local search feature, and other parts are all included in the Google API, which creates the necessary framework for the system's growth.

- **Database design**

The system is separated into two sections: the enterprise component and the storage component. However, the enterprise and shop subsystem simply differ in the decision-making; their core functions are identical, and subsystems for customers be combined. Customers, enterprise users, commodities with classifications, orders identity, orders with items, stores, and other entities are among those intended from this platform.

- **Implementation of a presentation layer**

A simple and cohesive user interface has been created for the sales management system of various internet channels. The system's end page divides the full page into three sections: User information and the initial portion of the system interface are displayed on the page using the interface's top, middle, and bottom areas. The second portion of the system's second part is on the left, and the section of the system's operation area is on the front. This section provides information regarding the system's assistance and knowledge. The customer interface finishes with HTML and big data analytics [21]. The language innovation on this page enables mobile phone customers to reach the administrative interface for some web browsers for the proposed architecture. The display and deconstruction layer is made special using the proposed design.

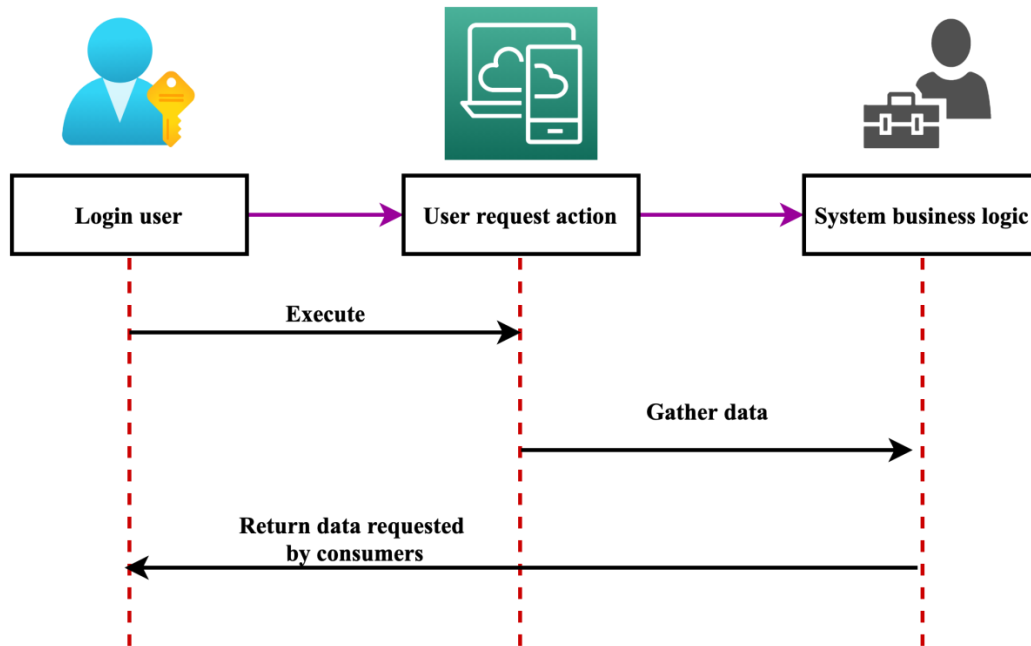


Fig.2: The logical relationship of the proposed HDMF framework

The logical relationship of the proposed HDMF framework is shown in Fig. 2. The system is initiated by user login, and then user requests the data. The user request action has a big data analytics module to gather the related data about user interests based on the use purchases in the system business logic model. The final digital marketing messages are sent to users based on their interests and profile.

3.2 Economic Framework

The economic framework is designed with content marketing and inbound marketing to analyze the cost of different marketing strategies and the final profit of the business. Generally, a dashboard (collection of metrics) is used to assess certain marketing. Depending on the goal of the analysis, the most pertinent statistic for decision-making and goal control should be chosen. For instance, the Return On Investment (ROI) is typically employed as a conventional measure of productivity from a financial standpoint. It uses the advertising elasticity of demand as a metric to assess the success of a particular campaign from a commercial perspective. Both strategies are considered in this study to reduce expenses and increase profits.

According to the principles of classical microeconomic theory, economic effectiveness is as follows: Users are classified as efficient if they have generated as much as feasible data with the real inputs or created that output at the lowest cost. The mainstay of marketing optimization tailored to content marketing and inbound marketing approaches is what it employs in the current study. The model's implementation examines the best advertising income for a certain digital content approach.

The research describes the company's profitability in the content and inbound marketing context, focusing on Search Engine Optimization (SEO) and Search Engine Marketing (SEM). The profitability of the business is indicated in Equation (1).

$$\alpha = \frac{k}{F(k, F_{SEO}, F_{SEM})} - \frac{k}{(F(k, F_{SEO}, F_{SEM}); F_{SEO}, F_{SEM})} \quad (1)$$

The scalability of the business is denoted in k , and the SEO and SEM attributes are expressed F_{SEO}, F_{SEM} . Where demand, and revenues, depending on the volume of traffic to a webpage, digital marketing expenses depend immediately and inextricably on the importance of traffic. As a result, variable costs, rather than a fixed amount of advertising, comprise a significant portion of content marketing and the inbound marketing context's pricing structure. It distinguishes between visits attributable to SEM campaigns (F_{SEM}) and visits produced by SEO (F_{SEO}). In this context, a better "conversion innovation" generates more additional revenues from extra visitors than a lesser technology.

The expenses are the result of adding the production prices vary according to the number of items sold online—and the content marketing and inbound marketing context expenses, which are primarily performance-based and directly related to the number of website visitors. It might include a set of marketing spend (A) and distinguishes between the explicit expenses connected with SEM traffic (P_{SEM}) and the implicit expenses related to SEO (P_{SEO}) since the visits produced by various content marketing and inbound marketing context approaches have varying expenses.

The variable expenses matter to the business (explicit or implicit). The relevant costs, in this case, are the content marketing and inbound marketing context's changeable financial consequences, modifying the marketing price. The reasonable cost is denoted in Equation (2).

$$V_P = VP(k) + F_{SEO}AP_{SEO} + F_{SEM}AP_{SEM} \quad (2)$$

The average expenses per visit for the related content marketing and inbound marketing context approaches are AP_{SEO} and AP_{SEM} And the SEO and SEM attributes are expressed F_{SEO}, F_{SEM} .

The allocated content and inbound marketing budget determine the number of visitors the business hopes to produce from its various traffic source materials. The marketing benefit of the company is denoted in Equation (3).

$$M_B = F_{SEO}AP_{SEO} + F_{SEM}AP_{SEM} + A \quad (3)$$

The average expenses of the SEO and SEM are denoted AP_{SEO} and AP_{SEM} The SEO and SEM attributes are expressed F_{SEO}, F_{SEM} . The total market spending amount is denoted A .

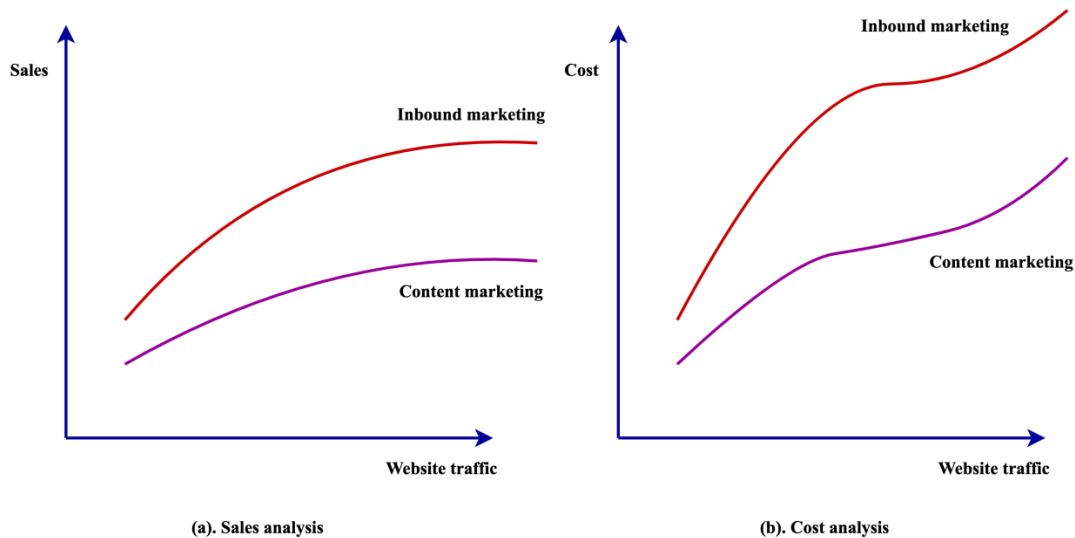


Fig.3:Website traffic vs sales and website traffic vs cost analysis

The website traffic vs sales and website traffic vs cost analysis of the system is shown in Fig. 3. The sales and cost relationship concerning website traffic is computed based on the dataset [20] and plotted. The variations in the inbound and content marketing concerning the sales and cost are devised. It should be noted that the cost of producing more visits (Minimal Cost (MC)) varies on the firm's webpage traffic quantity and pricing structure compared to rivals.

There is no universal rule, just a firm-specific optimization condition based on the minimal cost and return of extra internet visitors, given a firm's unique conversion and pricing structure based on Equation (4).

$$\frac{BP_{SEO}}{BP_{SEM}} = \frac{BR_{SEO}}{BR_{SEM}} \quad (4)$$

Business prices of SEO and SEM are expressed BP_{SEO} and BP_{SEM} The business rate of SEO ad SEM are denoted BR_{SEO} an BR_{SEM} .

3.3. Empirical approach to analyze optimal inbound marketing and content marketing

Technical efficiency (converting visits into sales) and distributive efficiency are two areas where the empirical research on assessing the company's functioning above minimal costs in style distinguishes itself (using SEO and SEM in the wrong proportion). This strategy necessitates the evaluation of the cost function and creating sales using various digital marketing approaches like content marketing and inbound marketing. This experimentally calculating efficiency inspired the analytical procedure, which is necessary in this case. It refrains from a more in-depth investigation of this analysis for conciseness.

It directly evaluates the optimality criterion given the existence of cost information at different quantiles (costs for SEO and SEM). It assumes that marginal profits per visit are unrelated to the traffic source. The proportion of discrete variations in expenses and visits between the two subsequent months be used to determine the minimal cost from the information directly.

Other research findings that compare the effectiveness of guesstimates versus the utilization of basic minimal price information from the electricity industry take into account the prediction of mark-up or the poor productivity of guesstimates versus the utilization of seamless access cost data. It is from their knowledge of data assessment or empirical study. Each firm's monthly calculations for 72 periods of the variable assess the deviation from the optimization problem [22].

It explores the theory using both graphs and economic analysis. The optimization hypothesis is tested using time series analysis, which treats the difference from optimization as a stochastic process that ought to follow a white noise procedure. The optimized inbound and content marketing is shown in Equation (5).

$$D_{it} = BP_{SEO,it} - BP_{SEM,it} \quad (5)$$

The business price of SEO and SEM concerning optimized inbound marketing and content marketing are expressed $BP_{SEO,it}$ and $BP_{SEM,it}$.

Be aware that greater values reflect an ineffective inbound and content marketing mix. In contrast, low values show the business works near the lowest inbound marketing and content marketing spending allowed for a certain goal, such as website visits or sales.

Therefore, comparisons are impossible due to the extreme departure from optimality. It reformulated the deviation from the optimization problem in absolute terms, standardized it, and expressed it in Equation (6).

$$RD_{cit} = 1 - \left(\frac{D_{it}^2}{\sum_{i=0}^N \sum_{t=0}^T D_{it}^2} \right) \quad (6)$$

The deviation from the predicted revenue to the actual review is denoted D_{it} . It should be noted that this method of transforming the deviation from optimality is equivalent to the error formulation used in the conventional least squares method and was chosen for the following characteristics:

- Account for all market variations without positive and negative variances offsetting one another.
- Relative measurement enables the system to rank companies within a nation based on their inbound marketing and content marketing efficiency.
- A normalized measurement within the range [0,1], where $r_D = 1$ denotes a fully efficient operation by the company and $r_D = 0$, a poor allocation of inbound and content marketing resources wastes advertising dollars.

In addition to the marketing-efficiency metrics being offered, it considers typical primary indicators for average prices per visit and average sales per visit, which correspondingly assess possible cost advantages in conversion systems. It examines how the enterprises are positioned locally, nationally, and internationally.

3.4 Implementation of content marketing and inbound marketing

Every marketing technique achieves the aim that content marketing and inbound marketing are committed to, whether to increase readership or sales. Creating a practical and accurate customer persona is the first step in establishing a solid content marketing and inbound marketing plan. Businesses aiming at a bigger customer base must develop many personas to identify the subtle differences between their target market's various characteristics and viewpoints.

When engaging with the intended audience, the buyer persona, a fictionalized portrayal of the consumer base, is crucial. It is a persona that embodies the characteristics and passions of those potential clients who are most likely to interact with the business. Despite having a foundation in conventional segmentation, the persona adopts traits from the target audience. It seeks to comprehend just their professional and demographic backgrounds but their objectives and difficulties. The customer persona aims to understand the buyer's values, informational habits, and obstacles to goal achievement. Recognizing the buyer persona entails awareness of the target market's motives, worries, objections to purchases, pains, and fears.

The business must take the time to comprehend the emotions that drive the customer to take action and look for a solution to identify this buyer persona. To do this, it must provide answers to various questions to create a valuable and accurate profile of each persona. The following classifications demographics, attitudes and sentiments; motives and intents; concerns; and interaction styles—are among the many patterns used to identify the buyer persona.

Demographic data from the person's private and professional life supports the identity. Marketers might consider solutions that the character could find appealing based on his demographics, career level, and profession. For instance, a company that sells home office supplies can develop goods and services specially designed to address problems in an office setting for various administrative and support levels. Knowing the persona's career stage can help with the needs and issues of that stage's intended audience.

Overcoming obstacles to attracting the target customers is made easier by recognizing the values and sentiments of the persona. These are some factors that the persona finds appealing about the promoted solution. The occupational demographics are extended into the real personality of the persona by the values, anxieties, ambitions, and problems. They enable the company to understand the objectives and key elements of the organization.

Intentions and motivations are related to the persona's overarching goals. It inquires about the aims and objectives of the drivers who are seeking. What motivates them, and how do they handle difficulties? The firm distinguishes and comprehends its content's value for the specific target by knowing both the human values, motives, and goals, meeting consumer demands beyond but limited to profitability.

Knowing the persona's issues entails looking at any obstacles the character could have in resolving a situation. It might be a lack of alternatives, internal expenses, industry restrictions, or a lack of remedies. Understanding the persona's aims and problems is important, but so are the difficulties they provide. Lastly, how a business resolves possible biases and how to reach out to and engage with the persona be influenced by knowing the communication/information patterns and disadvantages that affect the persona. It is crucial to comprehend how to interact with the character. Different personalities prefer both face-to-face and technological communication. The company ensures that its communication methods align with the audience by understanding how to address and resolve the issues of the personas in a manner and manner that they can comprehend.

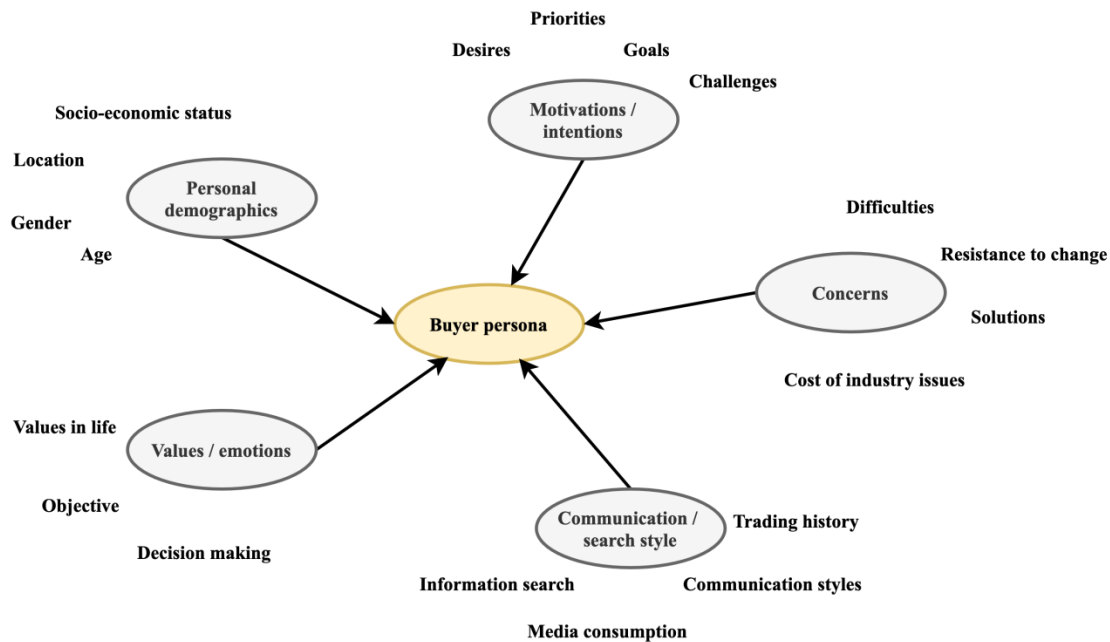


Fig.4:Buyer persona analysis

The buyer persona analysis for the inbound marketing and content marketing is shown in Fig. 4, and the different factors like the buyer values, personal demographics, motivations, intentions, concerns, communication and search style are analyzed to send inbound marketing and content marketing messages to buyers. The next stage after creating a persona is ascertaining what that person needs regarding the issues, tasks, and results. This process, called "trigger-based advertising," involves the marketer determining the crucial occasion that started the case or action that gave rise to the persona's dilemma. The key problem at this level of implementation is identifying the circumstances that can lead a customer to seek solace from their suffering before being aware of the strategic challenge faced by the persona. The answer to this question is found in a well-developed buyer persona. The more closely the material relates to the buyer persona's requirements and concerns, the more clearly one understands the buyer persona and inclinations. The marketer engages the persona in the emotive resolution to the problem the company can now offer through that material.

The persona's strategies for looking for a solution are discussed in this phase. In the past, the responsibility for disseminating information rested with the advertisers who pushed it through the medium. The persona now has access to a wide range of resources and a wealth of previously gathered data. Businesses must comprehend the personas' search processes to design search engine optimization strategies that direct personas toward the firm's solutions. Thanks to SEO, an industry's content is more likely to be seen by those unfamiliar with its brand. Companies should ensure that their content speaks the same language as their personas, emphasizing their requirements and addressing issues from their point of view. That influences the creation of the information and a search route to the company.

Even though content and inbound marketing call for new abilities, the following methods demonstrate that anyone can use them. It might be challenging but valuable to create a buyer persona, identify the trigger events, and understand buyers' routes to locate answers. The material is produced, and users and advertisers can be turned into leads for new sales.

The proposed HDMF is designed in this research with big data analytics and inbound and content marketing to enhance sales. The economic design analyses the business's revenue through inbound and content marketing.

4. Experimental analysis and outcomes

The experimental analysis and outcomes of the proposed HDMF are discussed in this section. The necessary data for the examination is taken from the dataset [20], and the yearly information for 2018, 2020 and 2022 are considered from amazon, Costco, eBay, reliance and other e-commerce sites. The experiment uses a computer with 8GB RAM and a 2.4GHz operating frequency. The digital sales revenue is analyzed using the previous sales and user interests based on the last searching and buying history.



Fig. 5(a): Average revenue analysis

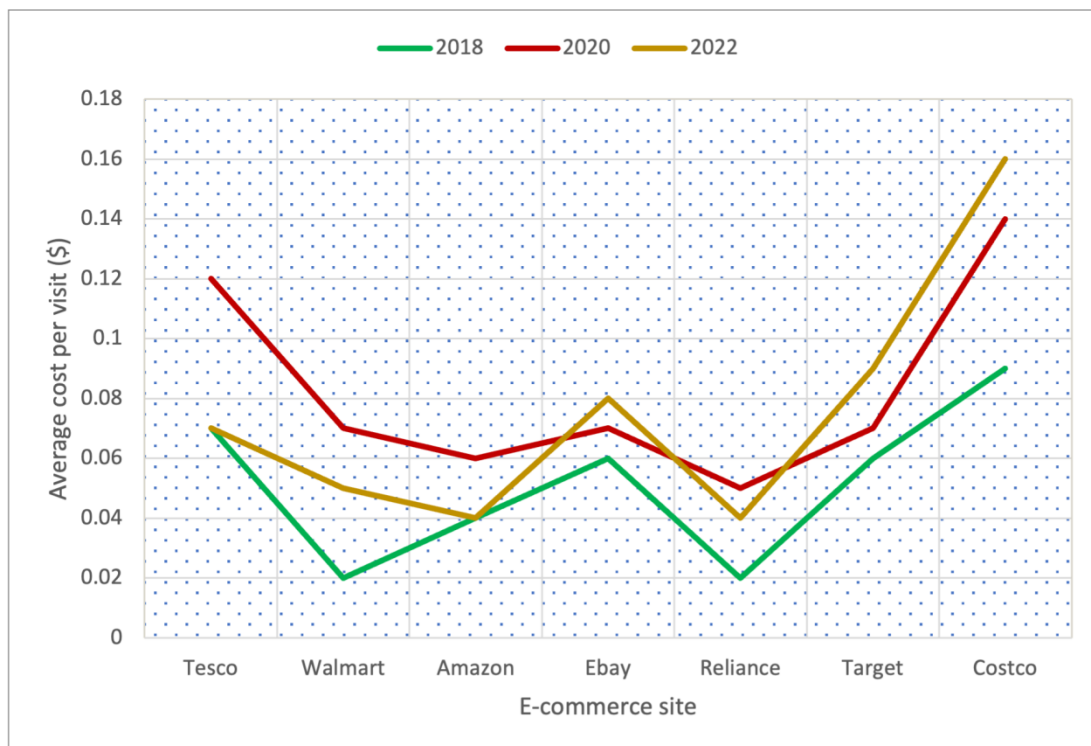


Fig. 5(b): Average cost per visit analysis

The average revenue analysis of the different e-commerce sites and the average cost per visit is computed for the financial years 2018, 2020 and 2022 and plotted in Fig. 5(a) and 5(b), respectively. The revenue of the different e-commerce sites such as Tesco, Walmart, Amazon, eBay, reliance, Target and Costco are accessed from the dataset [22]. The data is accessed from the dataset, and the variation shows those companies' user interest and digital marketing. The higher results increase users' popularity, further enhancing sales and increasing the average cost per site visit.

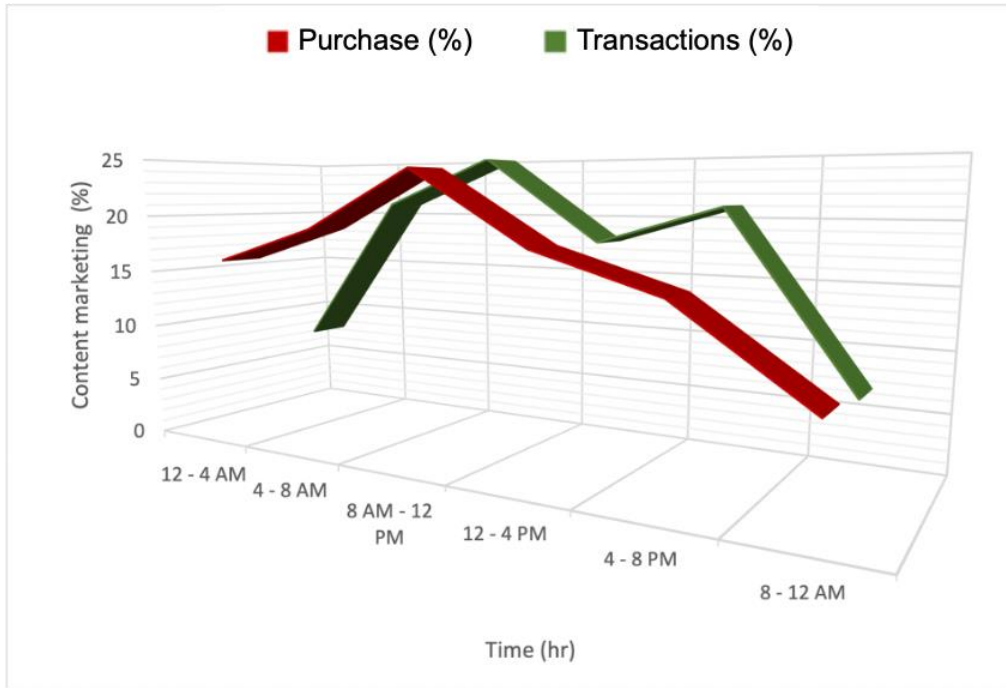


Fig. 6(a):Content marketing analysis

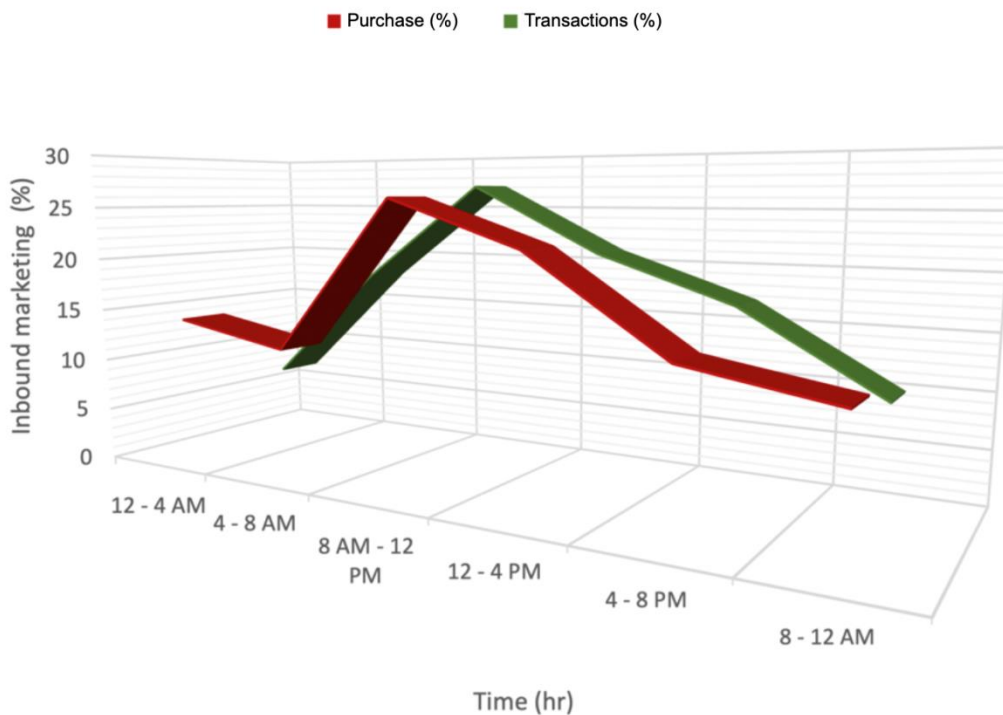


Fig.6(b):Inbound marketing analysis

The content marketing and inbound marketing analysis of the Amazon e-commerce site on the black Friday sale in 2020 is considered for the study and plotted in Fig. 6(a) and Fig. 6(b), respectively. The different products are

randomly selected from the given dataset, and the products are marketized using inbound marketing and content marketing. The respective marketing results are analyzed every second. The total marks are grouped into 4 hours and plotted in the figures. The results are plotted concerning the number of purchases and transaction costs. The result shows the impact of inbound and content marketing on the sales of the products.

Table 1. Return on investment analysis

Marketing medium	2018 (%)	2020 (%)	2022 (%)
Desktop	26	35	38
Mobile	35	42	43
Custom content	42	38	39
Video	38	52	56
Search advertising	52	47	49
Online display	49	51	50

The return on investment is computed for digital marketing mediums such as desktop, mobile, custom content, video, search advertisement and online display in 2018, 2020 and 2002. The measured results are tabulated in Table 1. The dataset is analyzed using the proposed HDMF with a big data analytics model. The outcomes show the highest impact in digital marketing with inbound marketing and content marketing in mobile advertisement because most consumers use mobile phones to search for and buy products. As the year passes, the involvement of mobile in digital marketing is analyzed from the analysis.

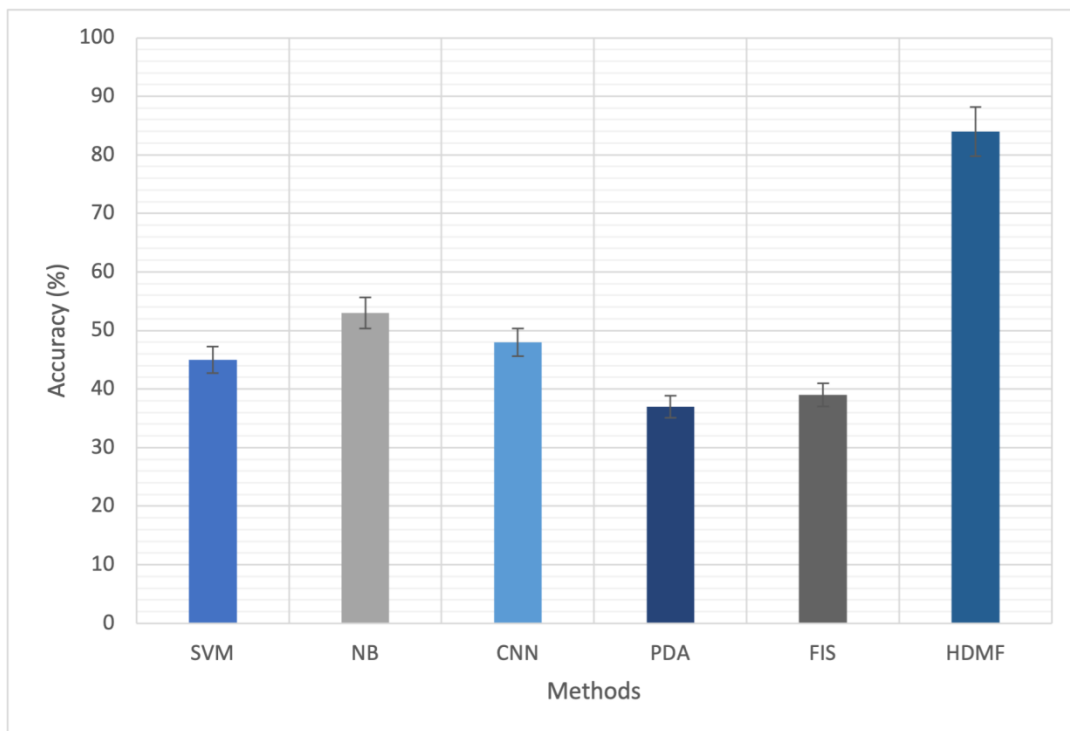


Fig.7(a):Accuracy analysis of the proposed HDMF

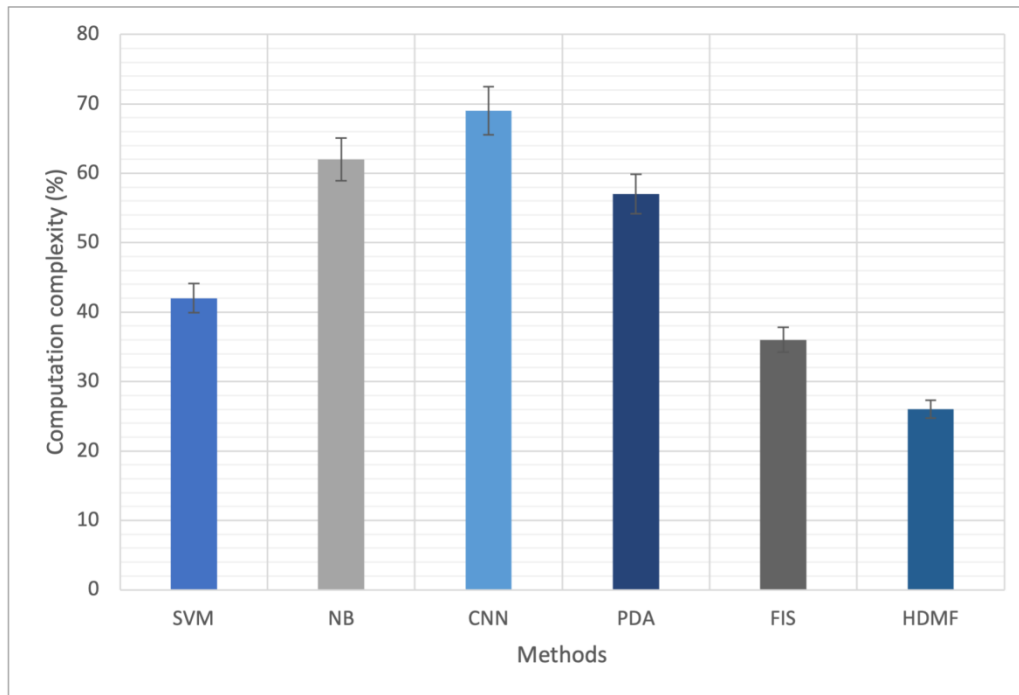


Fig.7(b). Computation complexity analysis of the proposed HDMF

The accuracy and computation complexity analysis of the proposed HDMF framework are measured and plotted in Fig. 7(a) and Fig. 7(b), respectively. The experimental investigation of the proposed HDMF framework is evaluated, and the results are compared with Support Vector Machine (SVM), Naïve Bayes (NB), Convolutional Neural Network (CNN), Primary Discriminant Analysis (PDA), and Fuzzy Inference System (FIS). The proposed HDMF framework shows the high accuracy of 84% and lower computation complexity of 26%, which is ensured by big data analytics and inbound marketing and content marketing.

The proposed HDMF framework is analyzed in this section to analyze the effectiveness of inbound marketing, content marketing, and big data analytics. The result ensures the higher accuracy of the proposed HDMF with the higher prediction of revenue using SEO and SEM. The experimental outcomes are analyzed and compared with the mathematical results.

5. CONCLUSION AND FUTURE SCOPE

An effective analytic tool is needed to solve the challenge of accurately and efficiently extracting relevant information from marketing in a large log. Such a technology that excels at handling such data is to verify the inbound marketing and content marketing. A Hybrid Digital Marketing Framework (HDMF) is designed in this research with combined content marketing and inbound marketing strategy with big data analytics. This paper suggests a digital data marketing system using inbound marketing, content marketing, and big data to create a large data marketing system that employs big data storage technologies. The system's implementation and operation are explained, which is ensuring the accuracy in determining the business's revenue.

Furthermore, the system's viability and accuracy are confirmed by contrasting the procedure with the existing methods. The system is limited by the higher computation time and system complexity in programming. So the outcomes are enhanced in future by using Artificial Intelligence and machine learning models to analyze and process the data accessed from the users.

REFERENCES

1. Erdmann, A., & Ponzoa, J. M. (2021). Digital inbound marketing: Measuring the economic performance of grocery e-commerce in Europe and the USA. *Technological forecasting and social change*, 162, 120373.
2. Müller, J., & Christandl, F. (2019). Content is king–But who is the king of kings? The effect of content marketing, sponsored content & user-generated content on brand responses. *Computers in Human Behavior*, 96, 46-55.
3. Hollebeek, L. D., & Macky, K. (2019). Digital content marketing's role in fostering consumer engagement, trust, and value: Framework, fundamental propositions, and implications. *Journal of interactive marketing*, 45, 27-41.

