

Data-Driven Digital Advertising Techniques for E-Commerce Companies

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Abstract: The most recent technological advancements are changing how businesses collect, analyze, and share data from individual individuals' internet activities. As a result, this contribution critically evaluates the most recent advancements in programmatic advertising and big data analytics. Additionally, it clarifies the usage of digital tools, a distributed ledger technology that enables safe, verified transactions between market participants. According to the findings, the ecommerce sector is increasingly using data-driven online technologies, such as programmatic advertising tools, to target and retarget people who are online or using mobile devices.

Ecommerce stores can prepare for emerging trends thanks to data-driven marketing. For instance, analyzing buying cycle data can reveal seasonality or other product usage trends, enabling marketers to foresee and cater to potential customers' requirements in the future. With this information, ecommerce marketing teams can create new trends and product lines, make changes to their pricing strategies, and adjust their budgets and forecasts. Ecommerce online stores may convince customers that they are being diligent by adjusting to client expectations, customizing the purchasing experience, and spotting emerging trends. Additionally, marketing especially to people eventually produces greater financial benefits.

Information about targeted consumers is gathered by enterprises and used to create data-driven advertising campaigns. Data-driven marketers base their approach on cold, hard facts rather than an executive's best judgment. Big data collection and analysis help businesses understand the characteristics of their current and potential customers, as well as possible needs and wants, and preferred methods of communication. This is important because if information isn't relevant, 50% of consumers won't read it or interact with it. With customer knowledge at their disposal, marketers can more effectively cater campaigns to specific user groups and prospects, increasing response rates. Finally, this paper presents a framework that clarifies the ways in which advertisers capture, analyze, and use data for better ROI for ecommerce segments.

Keywords: big data; data analytics, digital marketing, ecommerce, digital media

1. INTRODUCTION

Data-driven marketing refers to the method of deciding on a marketing plan based on information and data insights as opposed to speculation and gut instinct.

Customer behavior and comments, marketing effectiveness, sales trends, and product insights are all included in e-commerce data.

Digital commerce advertisers have the ability to: by gathering, processing, distilling, and evaluating this data created by the business: foresee upcoming trends, respond to customer expectations, customize the shopping experience, enhance sales and marketing effectiveness, boost ROI, and carry out more efficient marketing in general.

Data from customer contacts, orders, product performance, statistics from marketing campaigns, conversion rates, etc., is generated in plenty by e-commerce stores. This data is processed by ecommerce analytics tools so that you may discover patterns, connections, insights, and outcomes. In this manner, you gain a better understanding about whatever works and what doesn't, what is a waste of time and money, etc. You may then decide on marketing strategies more quickly and effectively using this insight. Your plan will be supported by data, free of distractions, and concentrated on the areas that have been shown to lead to growth.

2. LITERATURE REVIEW

Marketing used to mostly include making educated judgments about what people wanted from a good or service. In a few instances, unplanned initiatives have produced fresh leads and successfully converted prospects into customers. In other

instances, even extremely well-designed commercials failed to reach their target audience, the market showed no signs of change, and the only sound heard following the start of a campaign was silence. (A Ghandour. 2015). Have you ever been persuaded to take action by a personalized advertisement? It's challenging to compete with a business that has a successful data-driven marketing plan. The best advertisements make you feel as though they were made just for you, whether they utilize a model that remarkably like you, address a problem you were unaware you had, or provide a solution to the type of challenging use situation you and your teammate had been discussing. What then is the exact motivation behind these wildly popular commercials? Data. (JR Saura. 2021).

A method of advertising known as "data-driven marketing" significantly relies on information obtained about a company's desired customer. Rather than relying on the gut feelings of a company leader, data-driven marketers make judgments based on empirical information. Businesses may gain insights into the characteristics, preferences, and behavior patterns of their customers and prospects with regard to communication channels, goods and services, and other topics by gathering and analyzing enormous amounts of data. This is essential since 50% of users won't bother reading or interacting with content that is irrelevant. (M Kaptein. 2013). Having enough "specific" data to work with is, of course, the first and most obvious benefit of data-driven marketing. Instead of using a "one-size-fits-all" strategy, digital marketers for e-commerce should segment their customer base based on common interests and preferences. Based on the chance that particular demographic groupings will respond favorably to certain distribution channels, e-commerce marketers may utilize this information to decide the optimum times to post on social media, launch email campaigns, and release new adverts. (RM Visconti. 2017).

Marketers can determine what is working and where there is space for improvement by examining performance indicators and monitoring how customers respond to each campaign. A successful campaign can suggest that a certain piece of content resonates effectively with a particular audience and need to be highlighted more prominently in subsequent initiatives. (B Dinter, J Krämer. 2018).

Online retailers can show their dedication to their customers by attending to their demands, offering a customised shopping experience, and foreseeing new trends. The bottom conclusion is that targeted marketing can help businesses achieve stronger sales results. (G Franco. 2021). Without digital marketing endeavours, the world of marketing today would not work. Without them, it will be much more difficult to draw customers to your online store and establish a strong brand. The natural next step in digital marketing is data-driven marketing, which identifies the best content to attract consumers' attention and the best frequency to maintain their interest. (GW Holmér, IH Gamage. 2022).

Access to customer data allows marketers to more effectively target niche markets and boost conversion rates. Customer behaviour changes over time and is cyclical, therefore data-driven marketing must go through multiple iterations to keep up with these changes (the items they buy, the number of new rivals entering the market, etc.). To fine-tune their plans and spend their advertising budgets properly in order to acquire customers with the maximum lifetime value, marketers need real-time information about customer behaviour. Data-driven marketing is more labor-intensive but more successful. (KR Purba, YJ Tan. 2023).

To stay current and competitive, firms and ecommerce platforms must frequently change their data-driven marketing approach. We'll discuss data-driven marketing, how it may benefit brands, and the most effective strategies used by e-commerce marketing companies to raise the online profiles of their customers.. (SC Berning. 2021).

3. RESEARCH METHODOLOGY

The primary research has been conducted for completing this research paper. Sample size is of 60 Data Analysts from the major leading ecommerce companies in India. The data is taken from peers of the digital domain through structured questionnaire.

Research Objectives

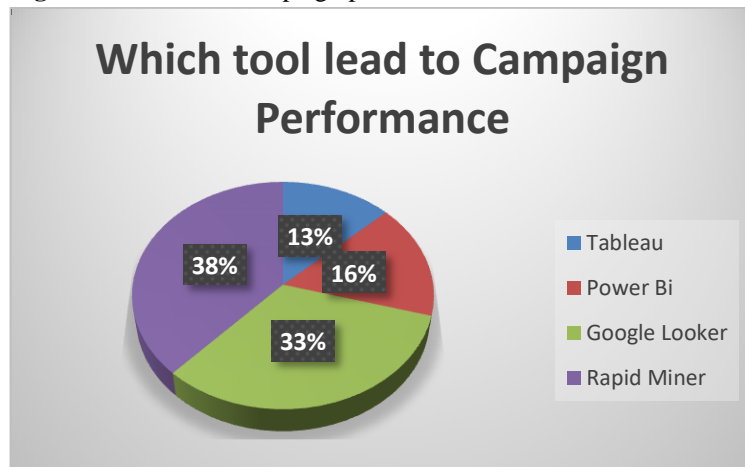
The main objectives of this research could be listed as follows:

1. To study effective digital marketing campaign using consumer data
2. To study on role of digital tools for enhanced ROI online
3. To study the impact of data visualization for decision making for ecommerce

Data Analysis

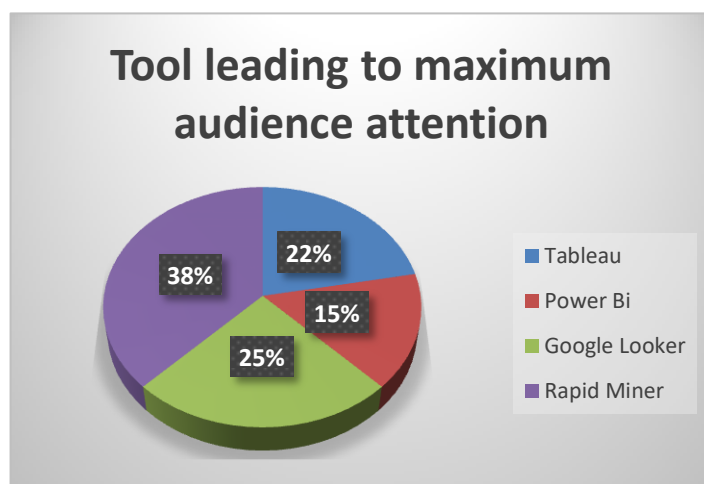
1. Use of digital Tool Leading to Campaign performance

Figure 1: Maximum campaign performance



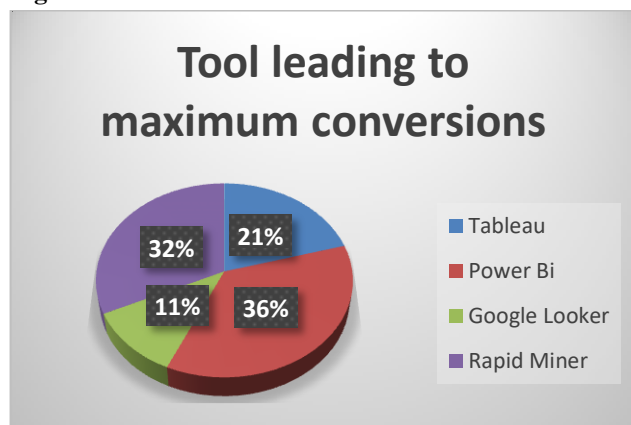
2. Use of digital tool to map consumer preference

Figure 2: Maximum Audience attention



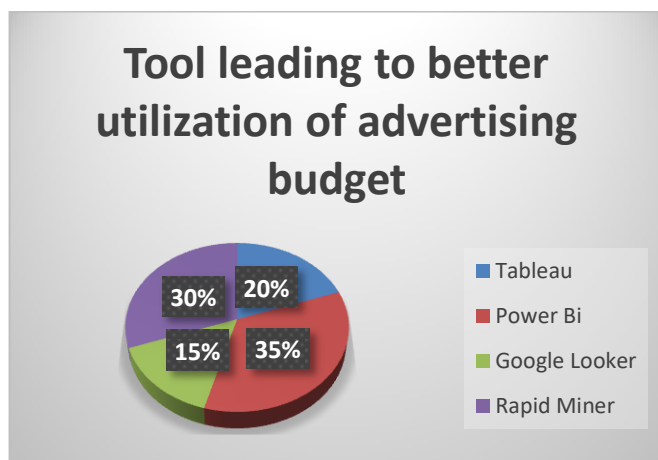
3. Use of digital tool leading to more conversions

Figure 3: Maximum Conversions



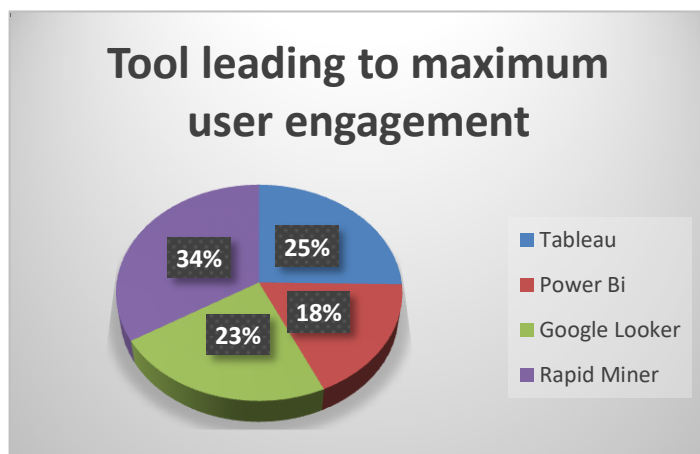
4. Online Advertising Budget Utilization

Figure 4: Maximum Advertising Budget Optimization



5. Tool leading to more user engagement

Figure 5: Maximum User Engagement



6. Digital Marketing Strategies used by Insurance Companies

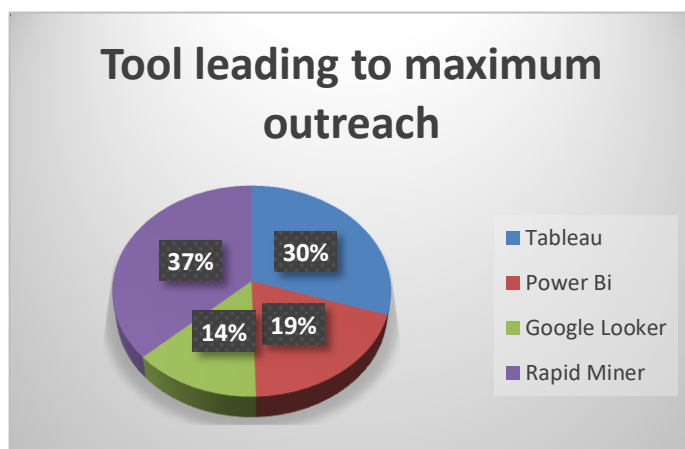


Figure 6: Maximum Outreach

4. FINDINGS

- As the survey shows, online stores are generating more ROI through research consumer data
- As per the survey, insights are helping ecommerce firms to create more personalized marketing strategies
- Sales data analysis playing an important role in segmenting the right audience for better ROI
- Planning the advertising budget across multiple digital platforms is systematic with sales prediction
- From the structured questionnaire, it is suggested that data analytics is providing consumer surfing and buying pattern beforehand

5. DISCUSSION & CONCLUSIONS

If internet firms want to keep on top of consumer demand and tastes, big data is essential. It is clear from this assessment that data analytics could help companies improve customer satisfaction and performance. With dynamic pricing features and interactive, rich product displays, it has made customization easier. This might aid in boosting brand loyalty and client acquisition as well as customer retention. In addition to giving businesses more sales chances, it also offers beneficial information into how to enhance processes across both buyer and seller networks. Organizations can also benefit from data analytics to make the most of their data as self service choices reduce costs. Ultimately, it identifies areas that need to be improved in order to increase sales performance.

Businesses should develop a long-term strategy for handling the many issues of managing projects given the growth of data storage, which is predicted to be 30 to 60 percent Publication of Economics. A new generation of scalable data management systems should be developed to take on the problems posed by big data and replace the existing ones. These systems must provide a solid, dependable assurance based on vertical scalability of computing and storage hardware. The new databases should also be highly scalable and performing, utilizing less complicated data consistency techniques, low-cost hardware to improve availability, and performance.

6. MANAGERIAL IMPLICATIONS

Top experts in online business can understand the relevance of data and how past information of their marketing campaigns can help them to reduce budget wastage and target right kind of audience. Data is an asset which can only be used by strategists if implementing the right data visualization techniques.

Businesses may now get information from customers at every stage of their journey. The use of mobile apps, online clicks, social media activities, and other data may be included in this information. Together, these factors create a data fingerprint that is fully individual to its owner. The idea of customers revealing information like when they woke up, what they had for breakfast, or where they went on vacation, though, would have seemed odd at one point not too long ago, to say the least. Expectations have increased as a result of the change in customer social norms. This article will provide five instances of how organisations may use data and analytics to benefit both their own operations and their clients while still upholding and supporting the highest level of data protection.

Companies are under more and more pressure from the competition to not just attract customers, but also comprehend their needs in order to improve the customer experience and forge enduring partnerships. Customers expect businesses to know them, establish meaningful connections, and deliver a seamless experience across all contact points in exchange for providing their data and granting relaxed privacy in its use.

Hence, businesses must record and combine various client identifiers, such as a customer's cell phone number, email address, and address, into a single customer ID. Consumers interact with businesses through a variety of channels, therefore it is necessary to combine traditional and digital data sources to better understand their behaviour. Customers also demand contextually relevant, real-time experiences, which businesses must provide.

7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

1. Geographical restrictions are the largest one of this study's shortcomings. The only region covered is that of India.
2. A problem forming relationships with people. It was challenging to meet people in person and acquire further information because of COVID-19.

3. Information sharing was cautious among the populace.
4. We had restricted access to data when conducting the study.
5. There was a timeframe for the research because there was a submission deadline.

My main focus over the coming months will be on figuring out which persuasive and personalization tactics blend the best in social networks with e-commerce. I'll accomplish this by conducting a number of user studies in which participants will be asked to provide information on how they've used various social media and e-commerce sites. Users will be shown product descriptions in both text and visual form in one of the experiments, and they will be asked to choose which one they consider more compelling and why. I will work on creating and implementing executable persuasion profiles for users with the purpose of addressing the next research issues because persuasion profiles are a crucial component of offering individualized content to customers.

1. How can one create a customized compelling product display using the data-driven user model and persuasion profile? Can a system, in other words, dynamically employ a user's persuasion profile while displaying data about a certain product?
2. How can the success of the user's customized experience be measured? To find the answers to these questions, one must read a lot of material on persuasion profiles. It will also entail conducting user research to verify the efficacy of persuasion profile implementations that are already in place.

8. FUTURE OUTLOOK OF ECOMMERCE SECTOR:

With the help of data-driven targeted persuasion, social network analysis, and user experience enhancement, this research seeks to increase the success of e-business organizations. The structure shown in Figure 1 and the success measures of customer loyalty, conversion, retention, and average order size are how I propose to accomplish this.

The ecommerce industries of the future will cater to clients from many geographical locations. There will be an increase in online users from developing and emerging economies. Due to the ageing populations in many nations, online retail providers will need to provide for a variety of demographics, including seniors and those with special needs. Smart technology can therefore be utilized to predict the needs of identified consumers. For instance, the usage of programmatic advertising is likely to improve people's intuitive purchasing experiences and can reach users' ad hoc spending. The likelihood is high that third-party shops will remain an important component of the distribution mix. To reach their intended clientele, many service providers will use their direct methods, though.

Machine learning and artificial intelligence are advancing the planet quickly. According to research, 48% of customers, or almost half, prefer to communicate with businesses via live chat since it offers prompt responses and prevents having to wait on hold for hours for customer care. Additionally, businesses can provide each customer a comfortable, personalized shopping experience by enabling customers to try on things from the comfort of their own homes thanks to improvements in augmented and virtual realities. The e-commerce industry is one of many that profit from enormous volumes of consumer data. The e-commerce industry is one of many that profit from enormous volumes of consumer data. But, when it comes to generating actionable insights that boost conversion rates and customize the client experience, the value of this data is rarely acknowledged. Companies wasted \$756 billion last year alone as a result of poor e-commerce customization. High speed data processing and fact checking, which enable businesses to take quicker and more informed decisions, are absolutely essential to the future and current success of e-commerce.

To put it simply, data has the potential to help e-commerce organizations evolve, but not just in terms of the operational factors of cost savings, higher productivity, and more informed choices. Data puts your company in direct contact with customers, providing you a greater knowledge of their online behavior through the anticipation of patterns, trends, and personalization so your items will stand out in today's crowded markets.

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