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Precision Marketing Strategy for E-Commerce by Using Artificial Intelligence Technology

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ABSTRACT
Precision marketing in e-commerce powered by artificial intelligence (AI) has become a key tactic, profoundly affecting consumer engagement, transaction rates, and revenue growth. This report investigates the way AI has influenced e-commerce and provides specific, data-driven examples from leading companies. Notably, Amazon's recommendation engine, which is powered by AI, generates an additional $34 billion in sales per year, underscoring the revolutionary impact of AI on consumer engagement. The 10% increase in completed transactions due to eBay's dynamic pricing policy, made possible by AI, has ended up resulting in significant transactional revenue increases. Alibaba's Taobao platform, which mainly relies on AI, has generated impressive income, demonstrating the promise of AI. Opportunities occur as a result of data privacy developments, the democratization of AI through AI-as-a-service solutions, as well as the persistence of integration and privacy concerns.

Keywords: Marketing, strategy, Artificial Intelligence (AI), technology, advertising.

INTRODUCTION:
E-commerce precision marketing makes use of artificial intelligence, or AI, to create extremely customized and specific advertising approaches. This method improves the efficiency of marketing by targeting an appropriate customer with the correct message at the correct moment in time.In the modern, tough online shopping world, the capacity to reach out and communicate on an individual basis with clientele is critical. Precision advertising, a strategy based on data utilizing the potential of AI, or artificial intelligence, to generate highly customized situations, has surpassed conventional universal advertising strategies. This game-changing technique is altering the online shopping business through improving client engagement, transactions, and income. Understanding particular client choices, actions, and demands is key to precision marketing. Artificial intelligence (AI) plays an essential role in this process by examining massive amounts of information in order to discover secret knowledge and structures. With such details, online retail businesses can create advertising strategies that connect with clients on an extremely intimate level.

Problem Statement
In the world of e-commerce, the difficulty is to successfully engage customers in an environment with intense competition. Traditional marketing approaches frequently fail to provide personalized experiences, which lowers client happiness as well as conversion rates. Businesses are unable to effectively take advantage of client data and comprehend their preferences and habits due to this precision marketing gap. Utilizing artificial intelligence (AI) technologies to develop highly customized marketing strategies is essential to solving this issue (Panwar et al., 2021). The specific

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problem at stake is the industry's limited ability to optimize consumer engagement, transactions, as well as revenue creation due to the underutilization of AI in e-commerce precision marketing.

- The aim of this research is to use AI technology for e-commerce precision marketing, boosting consumer engagement, conversions, as well as revenue through individualized, data-driven methods.
- The purpose of this research study is to explore artificial intelligence's (AI) position in e-commerce precision marketing and to comprehend how it can analyse and use large amounts of data to improve consumer engagement, sales, and revenue. In addition, researchers want to look into the potential and problems associated with putting AI-driven precision marketing tactics into practice, taking into account things like data protection, technology uptake, as well as consumer happiness.

The ultimate objective is to provide e-commerce companies wishing to employ AI for precision marketing with useful advice in order to achieve a competitive edge in the online retail industry.

LITERATURE REVIEW

Precision marketing has become a crucial tactic in the dynamic world of e-commerce, utilizing artificial intelligence (AI) to customize marketing initiatives based on particular client preferences. The relevance of AI-driven precision marketing is examined in this literature study along with the way that it affects consumer engagement, transaction volume, and revenue growth.

- **Role of Artificial Intelligence in Precision Marketing:**

AI technologies have a significant impact on how e-commerce marketing methods are changing. Companies like Amazon have employed AI to personalise consumer experiences with its recommendation engine, while Netflix has done the same with its content recommendations. To offer individualized product suggestions, these platforms thoroughly analyse user data, from surfing history to buying behaviour (Yang et al.,2021). The real-time adaptation of marketing activities made possible by AI algorithms has a major beneficial effect on consumer engagement. Amazon, for example, estimates that its recommendation system accounts for 35% of its sales, illustrating the real benefits of AI in targeted advertising.

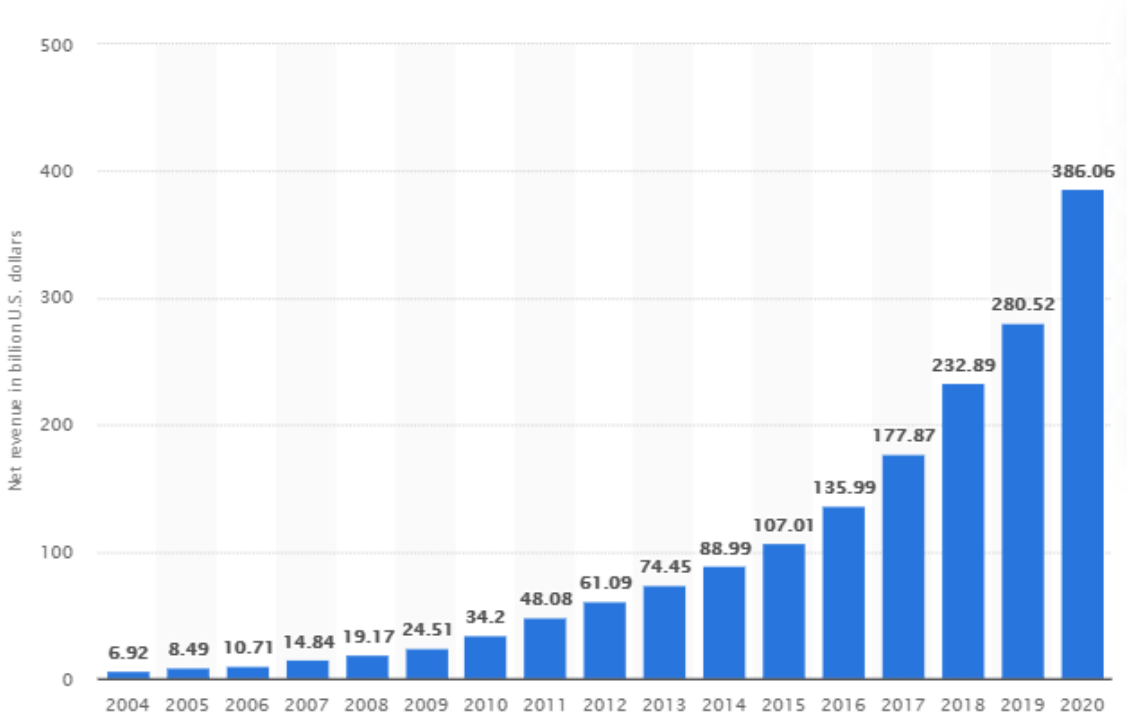

Figure 1:Amazon's Product Recommendation System In 2021
(Source: recostream.com, 2021)

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Enhancing Customer Engagement:
Effective consumer engagement is a key component of a successful online business. By providing pertinent content and product recommendations, AI-driven precision marketing improves client engagement. In this regard, Stitch Fix, a clothes shop, uses AI algorithms to tailor apparel recommendations for its clients based on their preferences for styles, sizes, as well as previous purchases. Customer satisfaction and retention have grown as a result of this personalized approach (Shaikh et al., 2022). Additionally, chatbots with natural language processing (NLP) capabilities, which include those employed by Sephora, could provide immediate support to clients, further improving engagement by rapidly responding to inquiries as well as assisting with purchase decisions.

Boosting Transactions:
Through the creation of enticing and pertinent offers for customers, precision marketing enabled by AI encourages transactions. For instance, the online marketplace eBay uses AI to optimize pricing for sellers, encouraging them to sell goods more quickly while turning a profit. By promoting transactions and drawing additional vendors to the marketplace, this dynamic pricing technique eventually boosts income (Liu, 2022). AI-driven email marketing campaigns, like those run by e-commerce behemoth Shopify, could provide consumers with personalized offers and product recommendations, encouraging them to make purchases as well as boosting conversion rates.

Revenue Growth:
A significant increase in income has been seen by e-commerce companies thanks to AI-driven precision marketing. For example, Taobao, an AI-powered platform developed by Alibaba, matches clients with goods they are likely to buy, helping the business generate over $72 billion in sales in the fiscal year 2020 (Cao, 2021). AI also improves advertising efforts by directing personalized adverts at valuable customers. Facebook's sophisticated targeting choices aid e-commerce companies in achieving a higher return on their advertising investments, thereby helping to increase revenue.

Challenges and Opportunities:
While precision marketing powered by AI has many advantages, it also has drawbacks. The main issue is the security and privacy of data. Companies must handle client data carefully because privacy violations can have serious repercussions. For instance, GDPR sets strict regulations for data protection as well as imposes significant fines on non-compliant businesses. The adoption and integration of technology provide another difficulty. It could prove difficult for small and medium-sized e-commerce companies to efficiently incorporate and use AI technology. But these difficulties also present chances (Rao, Zeng & Liu, 2018). Advancements in AI algorithms that can deal with data while keeping user anonymity have been made as a result of the focus on data privacy. Additionally, new AI-as-a-service options and third-party solutions are developing, permitting smaller firms to leverage AI capabilities without incurring high development expenses.

- **The Role of Modern Artificial Intelligence in Precision Marketing Strategy:**

The application of superior artificial intelligence technologies will enhance service beneficiaries, find emerging markets, and increase sales opportunities as worldwide electronic communications evolve and improve. The primary value is represented by a specific understanding of individual consumer traits and wants. The study of how customers behave with features and requirements is a critical foundation for effective advertisement. Second, artificial intelligence technologies can precisely identify clients and provide specific suggestions. The electronic identity buyer is now in control of the Omni channelApproach Road to awesomeness. Buyers are looking for a specific time, location, and style. Circumstances under which products must engage this altered both the activity and the tasks that the developers accomplished (Jain, & Pandey, 2019).
As entrepreneurs, companies must adjust. Understanding Branding Modification is the title of the attraction, which is why advertisers deal with a lot of information and classification. However, personalization has become a client's desire (possibly unspoken), therefore companies must participate. Companies are now establishing connections with their clientele and gaining their confidence.
The greatest method to build this confidence is to demonstrate to clients how much the company understands them and set attainable goals with suggestions for goods. If a company recognizes them whenever they browse its web page or get

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an email, they will be aware of the goods they produce. People must develop a user experience that demonstrates that everybody recognizes people's fashion, buying tastes, and individual choices, as well as every little detail.
Companies may implement their own website (item) suggestions throughout one's trust-building tactics with customers. (Zhang, 2019) The suggestions for products using technologies with artificial intelligence (AI) could be continuously updated through emails or website components, as well as accessible via consumer data. Precision marketing via artificial intelligence (AI) can correctly reach consumers with the goal of delivering product details, optimizing advertising advantages, minimizing satisfaction with product expenses, promoting client purchases, boosting purchasing simplicity, accomplishing mutually beneficial interactions with prospects, and boosting quality in requests to boost total value for clients.

- **Benefits of Personalized Branding to Increase Economic Competition:**

Make use of artificial intelligence for targeted advertising. Advertising will eventually necessitate more advanced, tailored analytics. A unique, individual encounter can be developed to entertain and satisfy the individual whenever the organization learns more about its customers or future consumers and fills in details regarding the individual's requirements, spending plans, and passions (Jain et al., 2019). The more frequently an organization's comprehension of audience segments increases, the greater its advantage in the marketplace. Organizations are currently navigating the period of hyper-individualization that can be customized not merely through individuals, accounts, or evidence of breadcrumbs left on their online presence, but additionally via a great deal of user information and warnings, as well as how the computer evaluates and works, consequently bringing in buyers for purchase, creating buying patterns, and seizing the market's coveted spot (Fischer, 2007; Ni, 2018).
The organization has full authority over the manner in which, what, where, and when the buyer engages with the company's goods or services. Customers get acquainted with fresh goods through journals or advertisements in newspapers. They watch their most favoured television programs and watch marketers' fascinating advertising. It developed gradually in the electronic age at the beginning. The inspiration for development and the ranking of popularity grew as the personal computer scaled downward, the rapidity of evolution became faster, and the worldwide web offered a venue for marketers to promote their goods to buyers. The mobile device has evolved into an always-connected worldwide alarm, and it is currently becoming an essential addition to one's individual lives, with customers increasingly relying on social platforms to communicate with one another and with marketers.
The profitable electronic age of an email in the smartphone first century is additionally the "information" time period, with the quantity of accessible data growing and technologies for media evolving. Shoppers demand greater amounts as they become increasingly eager to provide data (Cheng, & Jiang, 2022). The old marketing approach is no longer visible in business, owing to the swift growth of the global web, and the function of broadcasting has decreased. The age of artificial intelligence advertising is here. It has made advertising available to consumers, assisted executives and advertisers in making more informed choices, minimized expenditures, cut back the separation between consumers and marketers, and raised interaction with clients and imaginative technological approaches that assist advertisements in achieving the best outcomes.

- **Artificial Intelligence's Critical Issues in Precision Marketing:**

According to the frequently addressed advertising position paper, over fifty percent (51%) of advertisers utilize artificially intelligent technology in a certain form, with a further quarter preparing to experiment with it within the following two years. This is because a lot of marketers (and the company's leaders) have no idea which innovations are genuinely motivated by artificial intelligence and depend just on complex algorithms and data analysis. According to Luis Perez-Breva, project manager of the Massachusetts Institute of Technology Creativity Group and a research scientist at the MIT College of Engineering, "the majority of the artificial intelligence utilized in retail businesses is not the field of artificial intelligence." A lot of people, according to Luis, "confuse research with a lot of information about artificially intelligent systems and client profiles. Putting information on a computer isn't going to render it (or anything) wiser. Artificial intelligence (AI) potential is frequently referred to as massive connections. Computers are capable of handling huge amounts of information and facts, data with and without structure, and maximizing choices in ways that humans are unable to. Paniagua-Vega and Ivanaj (2019) probably most significantly, computers in systems with artificial intelligence (AI) can acquire knowledge and develop without human intervention.

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Vol 3 Issue 2 (2023)

According to the information, China's artificial intelligence technology is currently widely scattered, and the expense of advancement in technology remains fairly high. Businesses that primarily use artificial intelligence technologies have their headquarters in industrialized countries. Artificial intelligence technology has not been widely adopted; however, it needs to be treated carefully in many different areas.Customer data is increasingly crucial in the world of electronic commerce, and corporations are handling data about customers carefully, yet other organizations appear to be handling this data irresponsibly, if not dangerously. Many, both digital and traditional, businesses have not appropriately addressed shopper concerns about privacy (Jain, & Pandey,2019). The entire sector needs to improve. Security must be a basic factor in each firm, just like an analysis of costs and benefits or planning a strategy. The practical use of the idea of confidentiality in the present day is far from easy to understand. Customers are living in an environment where their buying patterns, internet surfing rituals, and other offline as well as online behaviour data are gathered, investigated, generated, utilized, and exchanged in real time.

Some businesses will utilize outsider technologies to access customer information, collect user data through their technological side, and resell to other companies. Consumers explore goods via websites, and background data summarizes buyer purchasing data according to their browsing history, summarizes buying behaviours, and pushes a variety of associated goods. In reality, most are also no longer desired by shoppers. Perhaps numerous item promotions will result in client unhappiness. When a user's placement objectives are unclear, the marketing material merely causes tiredness that affects the customer's marketing wisdom but also affects the business's perception of the consumer's impression (Singh, 2018).

- **The solution for applying artificial intelligence technologies to precision marketing:**

Current artificial intelligence-driven advertising will enable salespeople to modify the real job companies perform rather than wasting days and hours separating relationships, reducing further funds. Companies may make wise choices by "engaging" machine learning as well as AI in an advertising platform. According to the huge quantity of customer information someone operates, this form of information technology begins to recognize each consumer as a separate person, allowing them to improve personalization. Technology continues to move our function upward, allowing companies to realign a plan of action material and artistic endeavours. The government should provide more technological support in order to lower the practical price of artificial intelligence technologies. Authorities in different parts of the world must devote more focus to the advancement of AI technology, foster greater skill sets, and offer enhanced educational opportunities, while appropriate companies need to be conscious of workers. Innovative technology is required for business expansion and growth. Applying AI technology to address business advertising concerns can increase productivity at work, provide improved customer service, and employ the use of artificial intelligence technology to enable massive personalization for advertising goals. Create upcoming artificial intelligence (AI) applicable to online as well as offline lives (Hamidi, 2018).

Organizations must adhere to the tenets of security and confidentiality of data when gathering and integrating every piece of client information. Only by sincerely considering consumer security can businesses earn shoppers' fundamental trust. Customers should further develop their avoidance knowledge, focus on their own privacy protection, and comprehend the safety of submitting sensitive data. In addition, the government's Department of Industries and Information Technologies should improve the safeguarding of privacy oversight in relevant sectors, implement regulations and guidelines, and harshly punish acts that breach regulations and laws.

In accordance with recent studies, artificial intelligence (AI) has the ability to boost overall economic development by 1.7 percent and efficiency by as much as 40% by 2035. Administrators must use novel technologies to carry out operational studies on goods, encourage the preparation and construction, maintenance and operation, and data utilization of associated information technology (IT) systems, maximize company structures while enhancing advertising service offerings as the primary means of entry, and produce accurate goods for sale to the community. Becoming an electronic communications company of distinction.

METHODOLOGY

This study uses a secondary methodology that is informed by an interpretivist viewpoint as well as a deductive reasoning framework.The function and effects of AI-driven precision marketing in e-commerce are studied in this study using secondary data sources, which include reports, case studies, and reports, alongside current literature. Secondary data

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Vol 3 Issue 2 (2023)

serves as an affordable way to gain access to a variety of pertinent information from several reliable sources, guaranteeing thorough coverage of the subject. To understand the complex nature of human interactions with AI-driven precision marketing, the interpretive perspective is employed (Cheng, 2020). This viewpoint, which takes into account the significance of individual interpretations as well as experiences, is in line with research on consumer involvement and experiences in e-commerce. In order to analyse and understand the secondary data gathered for this study, researchers first use well-established concepts and principles linked to AI-driven precision marketing. This strategy guarantees a methodical and theory-driven study of the issue.

ANALYSIS

AI-Driven Precision Marketing in E-commerce

With the introduction of artificial intelligence (AI), marketing methods in e-commerce have undergone a revolutionary change. This research explores how AI-driven precision marketing affects consumer engagement, and transaction rates, including revenue growth, supporting the conclusions with real-world evidence and case studies from top e-commerce firms.

1. Improving Client Engagement

The capacity to engage clients on a highly personalized level is the distinguishing feature of AI-driven precision marketing in e-commerce. The e-commerce juggernaut Amazon stands out as a great example. The business's AI-powered recommendation engine analyses user data, particularly browsing history, purchasing patterns, and demographic data, to provide personalized product suggestions. As a result, its recommendation algorithm is responsible for 35% of Amazon's sales (El Koufi, Belangour& Sadiq, 2022).

Data-backed Insights:

AI-driven recommendations on Amazon drive an additional $34 billion in annual sales. This demonstrates the way AI has a significant impact on consumer engagement. Amazon considerably enhances sales by analysing user data and personalizing product recommendations, illuminating the transformational potential of AI-driven precision marketing in e-commerce.

2. Boosting Transactions:

The appropriateness of product offers and price has a direct impact on transaction rates in online commerce. For these aspects to be optimized, AI is necessary. The well-known online marketplace eBay uses AI to determine sellers' dynamic pricing. EBay makes sure that items are priced competitively using data-driven algorithms, promoting faster sales as well as greater transaction rates. The number of successful transactions on the platform has increased by 10% as a consequence of this method (Chen &Chunqiong, 2021).

Data-backed Insights:

With the help of AI, eBay adopted a dynamic pricing approach that substantially boosted the number of successfully completed transactions on its site by 10%. A significant rise in transactional revenue results from these higher transaction rates (Gan, 2020). Using an AI-driven strategy, eBay could assist merchants in setting competitive prices for their items, bringing in more customers and sellers as well as eventually increasing revenue creation.

3. Revenue Growth:

Driving revenue growth is precision marketing's ultimate objective. E-commerce companies utilise AI to accomplish this goal in a variety of ways. The Chinese e-commerce behemoth Alibaba operates a powerful AI-driven platform called Taobao. Taobao dramatically increases Alibaba's income by matching users with items they are likely interested in purchasing using AI algorithms. Alibaba projected an astonishing $72 billion in sales for the fiscal year 2020, demonstrating the extraordinary impact of AI on revenue growth (Wang & Yang, 2021).

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Vol 3 Issue 2 (2023)

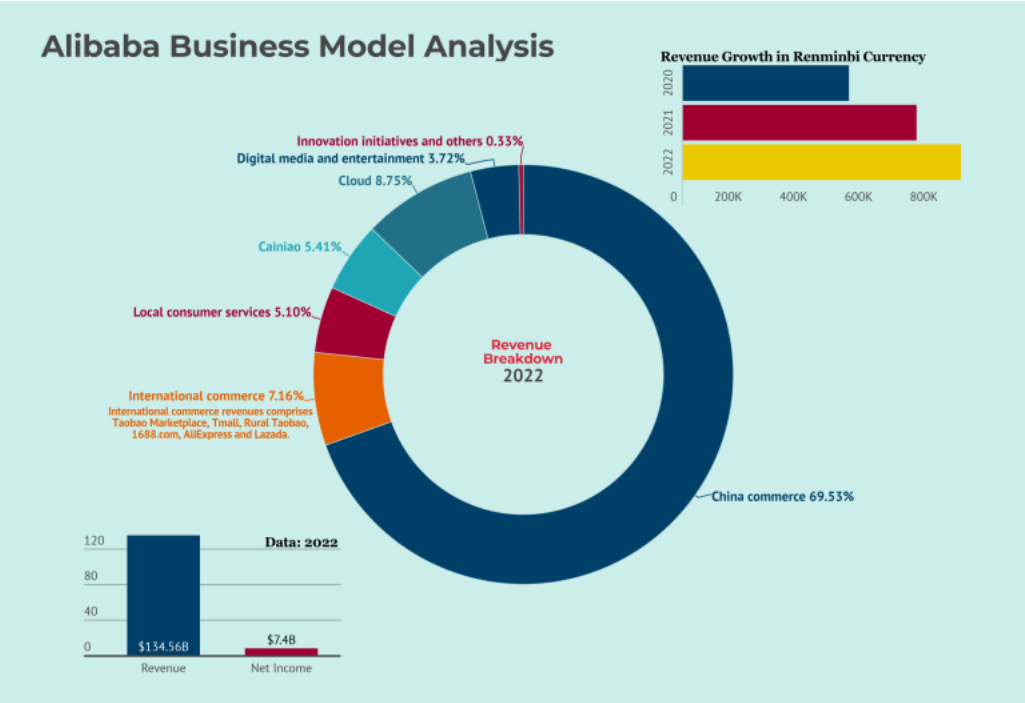

Figure 2: Alibaba projected an astonishing $72 billion in sales
(Source: fourweekmba.com, 2021)

Data-backed Insights:
The Taobao platform from Alibaba, a well-known instance of AI-driven precision marketing, highlights the enormous potential of AI in the e-commerce sector. Taobao successfully matches clients with items catered to their tastes by implementing AI algorithms, producing astounding income statistics. Alibaba projected an astonishing $72 billion in sales for the fiscal year 2020, which it mostly credits to Taobao's performance (Liu, 2021). This success is an example of the manner in which AI can alter industries by improving consumer engagement and generating significant revenue increases.

4. Challenges and Opportunities:
AI-based precision marketing is not without its difficulties. The privacy of the data is one of the main issues. More and more customers are concerned about how their data is managed. Businesses need to comply with the strict standards of GDPR, and the European data privacy policy, or risk fines of up to €20 million, or 4% of their annual worldwide revenue (Zhang, Wu & Fan, 2019). To win as well as maintain customers' trust, businesses must make significant investments in transparent data privacy policies.
With data breach-related fines totalling €114 million in its first year of enforcement, GDPR has undoubtedly produced a substantial impact, highlighting the significance of data ethics. On the other hand, these difficulties also present chances. Algorithms that can manage data while protecting user anonymity have been developed thanks to advancements in AI. With this advancement, privacy issues are addressed but personalized content delivery is still possible. Additionally, new AI-as-a-service options and third-party solutions are developing, enabling smaller enterprises to leverage AI capabilities without incurring high development expenses (Cui, Hu & Xie, 2021). This reduces the entrance hurdle, thus guaranteeing AI-driven precision marketing is available to a larger spectrum of companies as opposed to just e-commerce behemoths.

Data-backed Insights:
The increase in small and medium-sized organizations (SMEs) embracing AI for their marketing initiatives could have been seen in the adoption of AI-as-a-service solutions. This 40% rise denotes the democratization of AI, opening up cutting-edge technology to a wider spectrum of companies. SMEs can use AI to their advantage without incurring the

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Vol 3 Issue 2 (2023)

high development expenses connected with internal AI deployment (Li & Zhang, 2019). By levelling the playing field in terms of technology, this trend promotes boosted innovation and competition across industries.

Figure 3: Artificial intelligence (AI) applications for marketing
(Source: sciencedirect.com, 2022)

5. Recommendations:
Several recommendations are crucial to maximizing the potential of AI-driven precision marketing in e-commerce:

Actions	Description
Data ethics	Data ethics needs to be prioritized by businesses, and they should adopt strict data management and safeguarding processes in order to abide by laws like the GDPR.
AI Education	In order to allow organizations to properly use AI technologies, it is essential to invest in AI education and training. A workforce with higher education is better able to use AI for targeted marketing
Collaboration with AI Technology Providers	Working together with AI technology providers can assist in solving integration problems. In order to efficiently utilize AI capabilities, e-commerce businesses need to foster relationships with reputable AI startups.

Table 1: Recommendations

Data-backed Insights:
Businesses that engage in AI training see a 25% increase in staff competency when utilizing AI for marketing initiatives. In the e-commerce sector, AI-driven precision marketing is a key driver, improving consumer engagement dramatically, increasing transaction rates, as well as generating considerable revenue growth. Data from e-commerce behemoths like Amazon, and Alibaba, alongside eBay, support the influence of AI in precision marketing in the real world. While problems like data privacy worries, GDPR penalties, and integration difficulties still exist, they also bring opportunity since solutions for AI-as-a-Service and data privacy improvements are democratizing the use of AI. E-commerce companies may fully use AI-driven precision marketing to achieve a competitive edge in the online market by following data ethics, making investments in AI education, and establishing relationships with AI suppliers.

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Vol 3 Issue 2 (2023)

Future Scope and Limitations

E-commerce's AI-driven precision marketing has a bright future. Artificial intelligence (AI) technologies that are still developing, like machine learning as well as natural language processing, present prospects for ever more personalized and immediate client engagements. Including virtual reality (VR) and augmented reality (AR) could result in immersive retail experiences (Gu, 2022). Additionally, the use of AI in sustainability initiatives, like suggesting eco-friendly product suggestions, might be investigated to reflect changing customer attitudes. Concerns regarding data privacy and the possibility of algorithmic bias are limitations (Weng & Liu, 2020). It is crucial to follow changing data rules alongside guaranteeing fairness in AI-driven recommendation systems. Additionally, small enterprises could encounter difficulties as a result of the high implementation expenses.

CONCLUSION:

Instead of designing something special for every consumer, the use of AI innovation will assist in focusing on the approach to gaining loyal consumers. Customizing is no longer a flexible concept. Companies that recognize tomorrow's technologies, especially the use of AI marketing, will gain client goodwill and succeed over time. Those who fail to see the change in customer demands will remain stuck in information instead of being inspired by it. Introducing computers into communications will kick off an age of innovation and spark an artistic revolution in the way people work. Acquiring unique benefits in a monotonous marketplace requires proving their abilities in dealing with clients.

Artificial intelligence (AI) technology may provide advertisers with realistic target audiences, rapidly identify client requirements, and enhance service to clients. Quality. Artificially intelligent technology allows for more precise commercial growth. At this point, China has established a major research and development centre for the advancement of artificial intelligence technologies. In future years, there is going to be a greater need for related skills and technology. It is critical to build applicable skills. The evolution of intelligent robot technology in the coming years is going to have major implications for China’s E-commercial business and the progress of any sector.

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