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Product innovation: traditional marketing analytics vs. social media analytics approach

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Abstract: The present work highlights the use of traditional marketing analytics and social media analytics for product innovation. It presents the transition from traditional marketing analytics to the new generation of social media analytics with specific examples and case studies. An exploratory approach has been followed to identify how customers are actively or passively contributing to the creation of new product ideas and facilitating the process of new product development (NPD) through social media platforms. The role of social media analytics in the product innovation process has been outlined in a stepwise manner following a marketing strategy. A comparative analysis between the traditional analytics approach and the social media analytics approach has also been presented to understand the importance of social media analytics. The paper highlights that businesses can adopt a social media analytics-based approach for NPD and a collaboration of social media marketing analytics and the product innovation process can lead to significant competitive advantage for a business.

Keywords: NPD; new product development; traditional marketing; social media analytics; marketing strategy; product innovation; marketing research; social media; product life cycle.

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1 Introduction

The lifeblood of businesses is their products and services (Subagyo et al., 2020). Development of new products is an inevitable concept for both the large as well as small businesses (Kusumawati et al., 2021). It involves turning a customer's need into an achievable solution and turning an abstract idea into a physical good or service to create new wealth. The principal reason for existence of new products is to offer new value to the customer. This new value of new offerings is what keeps a company growing. To preserve its market position and deal with the fierce competition in such a globalised marketplace, the company must adapt to the new environment by innovating new products (Kumar and Nanda, 2022). Since a manufacturer's capacity to remain in business depends heavily on their ability to satisfy customer wants and gain market share, product development is an important step for manufacturers (Mirtalaie et al., 2016). Investments in product development should not be viewed as a luxury; rather, it is essential for the success of any business. There exist some competitive challenges for businesses, which make the product innovation extremely important. According to Sigala (2012), technology advancements, shorter product life cycles, quick customer shift, and flattened global marketplaces are some of the main challenges that businesses face today. It has now become vital for businesses to provide new goods and services to be competitive, as consumer preferences and demands keep on continuously changing (Nanda and Kumar, 2023). According to Edvardsson et al. (2012), researchers are more interested in consumer feedback for the development of new products. Even though it is simpler for rivals to enter marketplaces, consumers frequently change their minds about the products they buy, causing the market to quickly become saturated. Today's marketers face enormous obstacles because of increasing education, global marketing strategies, fierce competition, and the availability of many alternatives (Bhardwaj and Kumar, 2022). Fashion, preferences, and habits are ever-changing, and marketers have no choice but to accept these changes by positively responding to them through innovation

(Mittal et al., 2022). Thus, the products' lifespans are shortened and demand for new products is growing. Another reason for the necessity to create new or improved products is the growing customer desire for innovation and latest technology. Frequently, businesses create new goods, solely to diversify their risk. This could be because the current items are unable to satisfy market demands. A business can lower the level of obsolescence by providing more options. As an effort to discontinue older items, constant innovation is required. Many businesses have excess capacity, whether it be in the form of production capability or human talent. A business could decide to develop a new product to make the most of its resources and manufacturing capability. The company may occasionally be tempted to choose product innovation due to surplus human capacity. New items are occasionally created solely to reduce demand shifts caused by the seasons. A business can satisfy market seasonal demands by developing new products. Because there are products for every season, the marketplace is happy, and businesses can experience fast commerce. A company may also need to develop new items to increase market share, boost sales, and increase profits, when it is not possible to accelerate growth pace with the existing products.

Customer involvement is evidently significant at all stages of new product development (NPD), from concept formation and idea generation to design and development to testing and market launch of product (Dahan et al., 2010). If a company cannot provide customers with new value, it will eventually cease to exist in the market and die, while its rivals continue to have high value in society (Kumar and Ayodeji, 2020). According to Drechsler et al. (2013), marketing research is conducted throughout the NPD process to reduce uncertainty and risks. As an example, when Microsoft released Windows Vista in 2007, there were several compatibility and performance difficulties that led to considerable unhappiness. Even, devoted Microsoft users expressed dissatisfaction despite a big marketing spend and great hopes. This unfavourable criticism was accentuated by Apple's 'I'm a Mac' advertising campaign. The example is an illustration of why it is crucial to make sure a product needs to reduce risks and uncertainty and must be prepared to match user expectations before it enters the market. (<https://predikdata.com/the-best-way-to-do-market-research-for-a-new-product-development/#:~:text=Product%20market%20research%20involves%20systematically,in%20the%20product%20development%20process>). This risk can be reduced by gathering precise data on customer needs and ideas for new products so that this information can be incorporated into the new product's features. As a result, involving customers in the process of developing new products lowers the likelihood of failure in raising customer happiness. Battor and Battor (2010) explored how customer relationship management (CRM) affects a company's capacity and performance in innovation. They believed that a close interaction between customers and the NPD process enhances the company's capacity for innovation and emphasises the significance of customer understanding. Keeping the existing customers satisfied is very important for businesses that wants to expand and succeed in gaining market share. Many new products keep emerging in the market along with the existing ones. One such instance is that with the increase in number of working women, urban families have less time to prepare Indian food delicacies. But they have ample money to buy instant food items which are ready to eat. Maggi has been associated with noodles ever since it was introduced in India in 1983. The Nestle group of companies introduced it in 1980. In 1947, the Nestle family and Maggie had merged. When it first came out, it had to compete hard against the ready-to-eat snack categories like biscuits, wafers, etc. The business discovered that children

consumed the most Maggi noodles after performing thorough study. (https://www.academia.edu/13340676/Marketing_Research_on_Maggi_a_Nestles_product). With this background, Maggie launched Bisca Kwik Chow precooked noodles in 1989, a new product. The product was launched in heat resistant, expanded polystyrene disposable cups. This was very convenient for the users and was also pocket friendly. Apple is a more prominent example, as it has rapidly expanded its market share and experienced rising earnings from its continual product upgrades (Gurbuz, 2018). Today's marketers are expected to provide so-called 'fast foods' and 'instant drinks' to the incredibly time-conscious consumers. Compared to conventional postal channels, courier services have improved in dependability. Digital watches have replaced the analogue watches as an innovation. According to Battor and Battor (2010), a firm's financial resources alone are insufficient to produce successful innovation; in addition, the organisation must listen to and comprehend the needs and preferences of its customers. According to Bharadwaj et al. (2012), a company's innovation and customer service are enhanced when it pays attention to what its consumers have to say.

Companies across all industries are required to engage in Research & Development and innovation in their management practices, products, and marketing tactics. The creation and release of novel items in the market contribute significantly to the expansion of businesses by assisting them in maintaining their current markets and discovering the new ones, both of which increase their competitive advantage. For this, one strategy is to examine the consumer feedback on various aspects of either the current or related products and use it to inform the creation of the product's next generation. Through the analysis of consumer data, the organisations may want to have a comprehensive understanding of each of their individual clients. To determine what consumers, think of their goods or services, businesses have typically depended on surveys, focus groups, and research reports (<https://hbr.org/2012/09/better-customer-insight-in-real-time>). The findings from these can serve as the foundation for product research teams. However, a lot of drawbacks of these traditional analytics like cost, inaccurate results, magnitude and speed have forced the business to take technical help for analysing the customer data.

The concept of analytics, which is applicable to modest data volumes like kilobytes, gigabytes, or terabytes, forms the basis of most traditional marketing strategies (Kumar and Saurabh, 2020). The installation and analytical platforms for these datasets have limitations and they can only be used on the computers of researchers or managers (Aljumah et al., 2021). In general, large resources and market prospects are needed for attempts to successfully implement NPD. Companies have more opportunities to connect with people outside the organisation due to availability of internet based channels. These channels are also very cost effective as compared to traditional marketing channels. Research and Development on new products can be conducted by several methods with the help of online/virtual communities. To build a product that can accommodate the changing channels, businesses have started an attempt to incorporate social media analytics tools into the development of product. By using social media analytics and involving their users, businesses may regard their customers as co-creators in the process of developing new products (Nanda and Kumar, 2021). Social media has made it possible for businesses to go beyond the usual methods of getting input directly from clients or conducting surveys (Singhal, 2019). Due to these features, organisations have a lot of options to interact with customers in terms of assessing, storing, and exchanging a significant amount of client insight using big data methodologies (Kunz et al., 2017). Businesses can interact anytime with the customers thus reducing costs in terms of travel

and time. Massive amounts of data are gathered by businesses with the help of social media analytics tools to generate real-time business knowledge regarding consumers, risk, return, efficiency, and output (Gartner, 2017). As a result, Organisations can use social media analytical tools to analyse this enormous amount of data to make sense of it and take corrective or preventive action.

2 Traditional marketing analytics approach

As the business environment got more competitive, companies have sought ways to deliver new products more quickly and effectively (Trott and Simms, 2017). The process of NPD is constant, while the result keeps changing. For the creation of products in the past, numerous theories were employed. One of these theories was linear and proceeded through several stages, including the concept generation, concept screening, business analysis, product development, testing, and commercialisation (Chunawalla, 2008). Businesses work on every aspect of new product design, from the initial concept to the commercialisation of the finished product. Cooper (2010) developed the Stage-Gate method as a step in increasing development effectiveness. The Stage-Gate technique divides the process of product innovation into a specified number of stages, each of which consists of a set of predetermined, cross-functional, and parallel activities. To advance the project to the next gate, the project team members must complete crucial activities during stages. Additionally, there is a set or required list of duties for each stage. Senior managers can make critical decisions regarding the next course of action with this sort of organised development at several decision-making points, or 'gates,' along the development process. According to Gurbuz (2018), firms typically produce new products in the form of items with significant improvements or modifications to those that are already on the market. Portfolio management, a constant process in which new products and existing products are continuously assessed, new items are chosen, and underperforming existing products, is used to allocate corporate resources among the goods, in an effective manner. For instance, if there are many new product ideas, resources may not be sufficient and new product ideas may not be in line with business strategy. Also, badly performing products may not be identified at the proper time, or the quality of the portfolio may decline with poor new product decisions (Bruch and Bellgran, 2014). The incorporation of outside knowledge into an organisation's analytical processes thus has grown in importance for NPD in recent years (Lichtenthaler, 2016).

Consumers did not harness the full potential of internet during the web 1.0 and 2.0 eras, which made its integration to NPD as less consumer oriented (Saurabh and Kumar, 2017). The stochastic regression modelling procedures, diffusion modelling, multidimensional/mapping, and optimisation were analytical approaches of marketing then, and they were successful. For instance, 80% of Sony's new goods are upgrades of its older models. Like Sony, Nike began with running shoes and quickly expanded its product line to cover a huge variety of sports gear while making constant improvements (Kotler and Keller, 2007). Firms using these analytical marketing techniques reported the improved performance, lower expenses, and more profits (Lunardi et al., 2014). For many businesses, spreadsheet served as their primary analytical tool. Using customer analytics could provide advantages, however Wang et al. (2018) concluded that small merchants frequently overlook these advantages. According to Dinçer et al. (2019), consumer surveys, SWOT analyses, and net present value (NPV) models occasionally

offered useful business insights to NPD. These conventional methods were time consuming and costly. Some of the other drawbacks of these conventional methods include:

- The actual population of the target customers is very huge. Therefore, it is difficult to collect the primary data from required sample size. This can cause biased sample sizes, which may result in inaccurate results.
- Since the data is collected offline or maybe it is not real time data, it might take time to organise studies, and the findings turn quickly out of date. This makes the results outdated and lead to inaccurate decisions.
- People frequently contradict their words and actions. Customers might fill something in the Survey whereas they might not implement the same. For example, some people may protest about low-cost airlines while still fly on them.
- By using conventional methods of Survey, questionnaires, and interviews, decisions are made by a central entity. Hence, these decisions might take longer time and might not be based on real facts.
- The conventional methods are also costly in terms of time consumption as physical collection of data requires a lot of time and effort for collecting data by personally visiting the customers and convincing them to answer questions.
- Customers' memories, which are unreliable, are used in surveys and focus groups, and the presence of observers may induce customers to act differently.

For understanding the needs of clients, potential markets or sectors, there was a need for enormous data from many sources for the NPD. There are factors of business, which are moving and changing rapidly. Most businesses are now using social media data mining to drastically cut the time needed for product release, evaluation, and feedback collection (Kumar et al., 2022). With social media data, the unfiltered nature of organic conversations generates insights in the data that one did not think of asking about (Kumar and Nanda, 2019). New product development (NPD) and strategic actions can now be evaluated to determine their level of effectiveness. This may be due to the recent and quick advancements in information technology and marketing that have enhanced mobility, improved solutions, and the volume of these activities (Kumar and Pradhan, 2015). According to the latest statistics, Facebook generates 4 petabytes of data per day in 2023 including user posts, liked content, and submitted images and videos ([https://kinsta.com/blog/facebook-statistics/#:~:text = Facebook%20generates%204%20petabytes%20of, about%20300%20petabytes%20of%20data.](https://kinsta.com/blog/facebook-statistics/#:~:text=Facebook%20generates%204%20petabytes%20of,about%20300%20petabytes%20of%20data.)). Mazzei and Noble (2017) believed that increasing data and technology proficiency levels are changing the nature of innovation, competition, and production. Before moving on to final design and prototyping, businesses can improve product designs with the aid of these new tools. It is important to keep in mind is that after a product has been released, making significant modifications to it is more challenging. For decision-making and tracking the effectiveness of their products, many organisations have begun to use analytics based technologies (Mittal and Kumar, 2020):

- The potential of a new service for Netflix has been evaluated using millions of real-time data points. Netflix gained more than 61 million Facebook fans because of

creative social media marketing strategies. 11 million new followers joined the brand's account in just one year. Nearly 90% of the videos on Netflix are posted, with the remaining 10% being photographs. Videos from future films and TV episodes are frequently displayed on Netflix's Facebook sites, giving fans a preview of what to expect. These videos frequently include interviews with the performers from the upcoming films. These OTT platforms broadcast images, animated gifs, funny memes, and plain text postings with inquiries about current movies and television shows in addition to videos (<https://www.themarcomavenue.com/blog/a-case-study-on-netflixs-marketing-strategies-tactics/>).

- On its 20th anniversary, Easyjet launched a new data driven campaign for marketing. The company developed unique personal storylines for each customer based on the travel history of each of its clients. These produced forecasts about the customers' potential next travel destinations and included customer information such as when they had their first flight experience. As an important part of the campaign were personalised emails, which used 28 critical data factors among other things. As a result, this campaign had open rates that were 100% higher than their standard newsletters and CTRs that were 25% higher. (<https://www.aroscop.com/5-examples-of-brands-winning-it-with-marketing-analytics/>). The campaign's core objective was to engage more customers, boost consumer sentiment, and ultimately translate that feeling into sales. The company was able to learn motivating details about the experiences of their clients due to this campaign (<https://flightchic.com/2017/01/04/easyjet-data-driven-campaign/>).
- Sephora, a major retailer of beauty products, offers a highly customised digital experience. To create a memorable client journey, everything is done, from product discovery tools to personalised loyalty rewards. The homepage of the brand's website features suggested products. The entire selection is determined by the consumers' previous purchases and browsing habits. Similarly, they also have another button on their homepage that has a customised feed of recommendations called 'new for you' that highlights their most recent product releases. Consumers can choose between recently viewed new products, related products, and one may even enjoy suggestions on the product pages. The company employs predictive analysis for the same. Such data-driven marketing initiatives have been very effective for the company.

The ability to quantify the level of performance of strategic efforts has been improved because of recent and quick improvements in electronic technology and marketing. One such initiative is the usage of usage of social media analytics and how it can be useful in NPD.

3 Social media analytics approach

Social media has established its influence by penetrating customers' personal and daily lives for all kinds of businesses. It has provided an opportunity for both current and potential clients to interact with businesses in a more two-way manner (Kumar and Nanda, 2019). It has enabled organisations to explore well beyond the conventional methods of getting direct customer feedback or conducting surveys. They have assisted

businesses in making strategic judgements about ROI calculations and other business tasks including assessing data and implementing corrective or preventive measures. A huge amount of data is being generated on social media with customer engagement. Most of the consumer data comes from social media platforms like Instagram, Facebook, LinkedIn, Twitter, etc. Businesses have the chance to monitor client feedback, identify their problems, and implement remedial action due to the enormous growth and popularity of social media platforms (Ayodeji and Kumar, 2020). Customers can easily post opinions and reviews on products on social media channels today (Kumar and Pradhan, 2016). They can also communicate on these channels, their wants and needs for new items and improvements. According to Barnes and Pavao (2017), more than 98% of Fortune 500 firms have deployed a variety of social media tools for internal use or to communicate with clients, suppliers, or partners. These platforms facilitate many-to-many interactions and effective NPD due to the increased media richness and outreach (Huang et al., 2017). Businesses that integrate social media analytics into their operations progressively change their customer relationships and have unimaginable value-creation potential. For market research and product creation, firms may mine the information available on social media. In the past, businesses were happy to conduct surveys, focus groups, and interviews to learn more about client preferences. However, businesses are now discovering that social media analytics offers several benefits over those older techniques. Nike, for instance, has a rather simple social listening method. The business leverages social media data to track trends in the running, fitness, and sneaker communities. As part of its product creation process, it also examines data on sports equipment purchases. Nike's strategy relies on three primary tools: Facebook Insights, Twitter Analytics, and Google Trends (Google Trends has a free version). These apps enable them to keep an eye on conversations happening across all major social media platforms (<https://konnectinsights.com/blogs/12-companies-with-great-social-listening-strategies/>).

The goal of social media analytics is to analyse the user-generated data, that is present on social media and recommend a course of action for the organisations (Nanda and Kumar, 2022). Social media analytics operations can produce specialised knowledge or intelligence that can assist the adopting organisations in comprehending potential situations or issues and aid in resolving them with wise business judgements (Kumar and Ayodeji, 2020). When social media analytics are implemented properly, they can help organisations achieve the following goals:

3.1 Better marketing strategy

Marketers may use the plethora of consumer data found on social media sites like Twitter, Facebook, Google+, Pinterest, and Instagram to understand how consumers interact with and respond to businesses. With the use of these audience insights, marketing teams can create experiences that are more individualised and pertinent, increasing their online presence. Businesses can develop successful marketing strategies by monitoring and analysing this data. For instance, International House of Pancakes (IHOP), also known as IHOP, initiated a new logo using IHOB and enquired of followers what they believed the 'b' stood for. Before they revealed they would create burgers, people went crazy attempting to guess it. Not only did it increase sales, but they had also discovered a way to start a conversation about their brand, which kept them in people's minds. (<https://www.planthat.com/social-media-campaigns-2020/>).

3.2 Decision making for new product development

Social networking is crucial for businesses trying to keep a significant competitive advantage. Up to 98% of customers intend to make purchases on social media in 2022, according to recent study by Sprout Social. According to the same study, social media has a market potential for eCommerce that exceeds \$1 trillion (<https://www.trustradius.com/buyer-blog/social-media-analytics-enterprises>). With the development of social media analytics, brands may now leverage information from sources other than marketing to make targeted decisions. Every year, more and more information is shared on social media which is crucial to draw useful conclusions from this information (Bhardwaj and Kumar, 2022). By monitoring social media for rapid responses and making judgements based on sentiment-based data, social media analytics can enhance important decision-making related to development of new products. E-books are a perfect illustration of a current business potential. The ability to read books using a digital device that resembles a tablet computer was pioneered by Amazon, one of the earliest companies in the online bookselling industry (<https://www.wired.com/story/can-amazon-change-books/>).

3.3 Reputation management

Auditing, monitoring, and listening to what the audience is saying and thinking are necessary for managing a brand's reputation on social media. The way businesses engage with a brand's audience, affects how well it is known. Prospective customers may give a brand more credit if it keeps a track of user feedback and reply to their inquiries quickly and consistently (Kumar and Pradhan, 2020). Learning how to handle any issue is a necessary part of developing a social media reputation management, particularly when dealing with unhappy customers. Remember that most customers read reviews before deciding to purchase a service or product. They will refrain from purchasing a product if all they find critical reviews and unresolved problems. For a user, the brand must display or provide correct solutions for their queries. An Australian corporation, Qantas is a well-known airline worldwide and is establishing a very good reputation. They place a high value on comfortable flights for their passengers. Small errors can, of course, occasionally occur. The goal of their Facebook group is to hear about issues that their customers had prior to or during the flight. (https://www.facebook.com/Qantas/posts/10159004555397686/?comment_id=660097849162952&paipv=0&eav=AfZZU7j-mjd7cz0wylvc16v92L9bXLBe9EJX2Pp0eEwd9avy3itKVH9xN6JcLG2ovE&_rdr).

3.4 Customer engagement

Customers have a stronger relationship with a brand when there is better social media involvement. A brand has more opportunity to foster customer loyalty, boost word-of-mouth recommendations, and boost sales as a result (Pradhan and Kumar, 2016). With the proper allocation of social media resources, the platforms for collecting data from users can be used for business purposes. On these social media platforms, users interact and exchange both positive and negative feedback. The analytics can assist in monitoring the conversations being made by various clients on social media. They give context to the information accumulated through various social media platforms and evaluate the effectiveness of decisions taken because of social media activities. The capabilities of social media analytics for obtaining relevant insights include behaviour analysis,

sentiment analysis, share of voice, clustering analysis, and visualisations. Uber Eats is an excellent example of this because it uses dynamic content to personalise its messaging to users' geolocation and past behaviours by showcasing restaurants that are nearby to the respective customer. Although not every message needs to be personalised, Uber Eats does a terrific job of making customers want more of what they already enjoy (<https://clevertap.com/blog/customer-engagement-examples/>).

3.5 Better customer service

Use of social media platforms to address queries or issues raised by customers is known as social media customer service. Since users may contact the team on their preferred platforms, social customer support is quite successful. The main goal of social media marketing is to design an enjoyable and memorable consumer experience from awareness through advocacy (Mittal and Kumar, 2022). To do this, one needs to leverage social media data to comprehend the needs and expectations of their customers at each stage and to give value and solutions in line with those wants and expectations. Marketers can utilise social listening to pinpoint their consumers' pain areas, inquiries, feedback, and sentiments to increase customer loyalty and the customer journey. According to the most recent data, 50% of customers claim that receiving a prompt reply to their customer service inquiries affects their choice to make a purchase. Companies that respond to questions and concerns on social media see a 20–40% increase in consumer spending. When contacting a brand on social media, 40% of customers expect a response within an hour, and 79% expect to hear back within 24 h. 80% of consumers want businesses to resolve customer service issues more rapidly. (<https://blog.hootsuite.com/social-media-customer-service/>). For instance, Spotify is one of the top brands redefining how consumers listen to music. Not only are they skilled at what they do, but their consumers appreciate their help. Customers of Spotify who contact them via their dedicated Twitter account @SpotifyCares, frequently receive a music chosen by their support staff that is thematically relevant (<https://www.wixanswers.com/post/examples-social-media-customer-service/>).

3.6 Product innovation

Social media has generally been seen as a means of communication between businesses and customers. This viewpoint disregards the potential utility of social media data while acknowledging the importance of using it as a promotional medium. For every company that wants to stay relevant and advance in a highly competitive market, product innovation is crucial. Social listening is a terrific approach to allow the audience and competitors determine the directions in which the business can go. Information about specific consumers and larger networks of consumers can be collected from social media data. Businesses may foresee market changes and modify their product offers accordingly, ensuring they stay relevant and in front of the competition. Starbucks is an excellent illustration in this regard. Customers have been at the centre of their marketing strategy from the start, and they are conscious of what their customers want. They were aware that the pandemic had made their audience more health conscious; this trend had persisted among their younger audience after the pandemic. Baya, a caffeine-free energy drink from Starbucks, was the result of that.

3.7 Cost effective

Comparing traditional marketing strategies like TV or radio ads to social media marketing often results in a lower cost. Businesses can select the advertising solutions that best suit their budget on social media platforms because they offer a variety of options. Businesses can reach a broad audience without spending a lot of money by using paid ads, collaborating with influencers, or promoting content.

3.8 Targeted advertising

Social media platforms have access to a variety of user data. They are aware of their behaviours, demographics, and hobbies. This makes it possible for firms to target advertising to particular audiences who are more likely to be interested in their goods or services. Businesses may make the most of their advertising efforts and use the least amount of resources by addressing the correct audience.

Customer involvement is seen as essential for the NPD process (Tsinopoulos and Mena, 2015) since customers play a continuous role in opinion calls such as customer inclinations, market demand, and popular trends (Chong et al., 2016). Enterprises gradually recognise the value of customer input for smooth advancement of innovation process in response to the growing demand for more diverse and bespoke products. User engagement can spur businesses to come up with fresh concepts, urge them to devote more resources and capabilities to product innovation, and support activities aimed at co-creating customer value (Romero and Molina, 2011). Consumer involvement becomes the relationship of resource sharing between the consumer and the company during the NPD process, contributing significantly to the process (Chang and Taylor, 2016).

4 Social media analytics and the product innovation

The information provided by social media platforms is incredibly extensive, which contributes towards an organisation's desire to start the process of generating a new product. The data accessible on social media or related platforms is characterised by a huge volume and can provide organisations with insightful information. Social media platforms can help create good quality of product/service by highlighting the necessity for enhancing/innovating the current portfolio of products/services or developing an entirely new product/service. New product development speed (NPD speed) and new product creativity (NPC) are the two types of New Product Advantage that Tang et al. (2022) concentrated on, finding that social media has varying effects on each. Social media, according to their speculation, can speed up NPD and have an impact on NPC. Social media analytics are tools which can assist businesses in attaining objectives like higher revenue and the identification of service problems. These tools assist in analysing social media data to comprehend usage experiences, expected behaviours, feelings, referral possibilities, and innovation insights while offering enough support for adopting enterprises to use the above, deliver the desired behaviours, and develop new products (Ayodeji and Kumar, 2019). In contrast to weeks or months for traditional research methodologies, these tools can deliver data in a matter of hours or days. Social media analytics, according to Holsapple et al. (2018), can aid in maximising opportunities and controlling concerns by detecting both opportunities and obstacles. To improve or

innovate the current product/service portfolio or to create new products, social media analytics can be utilised to better understand the experiences, expectations, and user behaviours. For example- Medical professionals can now forecast disease and suggest precise medicine usage for optimal disease therapy. Tuarob and Tucker (2015) suggested a new method for NPD using social media data. They highlighted the use of social media analytics for NPD. These authors proposed a set of mathematical models that mine social media networks for lead users and the product features that they express relating to specific products. Giannakis et al. (2022) investigated the role that information collected from social media might play in supporting NPD decision-making. They examined the differences in consumer feelings during all stages of NPD with a focus on the emotions that consumers express via social media.

Accessing a wider geographic variety of clients is simple with social media analytics. A Boston-based business, for instance, would interview clients primarily in the Boston region, but social media analytics can increase its reach. Additionally, businesses can listen in on discussions about items from rivals. They can immediately imitate features that receive positive feedback from customers and take care to prevent comparable problems that lead to complaints. They can also keep an eye out for sudden increase in social media activity that could portray the release of a new product or the introduction of new features that are likely to cause significant satisfaction or unhappiness. Similarly, organisations can upgrade their products or innovate them due to the data that is being producing in real-time. With the use of social media analytics, it is possible to examine tweets, posts, and product reviews all at once to get a clear picture of how customers' wants, and desired features are evolving. To find the gaps and start the process of developing new products, these trends can be compared to the lines of already-available products. This helps in releasing a product that meets the customer's needs months before competitors take a definitive advantage. Using the Twitter API, sentiments can be retrieved from a large number of tweets. It represents a significant advance over the labour-intensive and time-consuming manual tagging of data (Schoenherr and Speier-Pero, 2015). Managers can look through a few online sites to predict how different organisations will score in terms of value and recognition in society. Wamba et al. (2015) suggested that tracking viewership data for a movie on Wikipedia can be used to gauge interest in the film before its debut. By integrating data from social media websites, businesses are given a way to improve their strategic decisions and achieve success in NPD.

Social media analytics might discover hidden opportunities and even unanticipated customer requirements. It might inspire the creation of products like timed-beeping toothbrushes, for instance. This can assist people determine how much time to spend on different mouth areas throughout their oral hygiene practise (https://glean.info/how-to-use-social-media-analytics-for-product-development/?doing_wp_cron=1687274424.5626239776611328125000). The comments on social media platforms can reveal a hidden important need, not met by existing products. Social media analytics has also enabled organisations to explore well beyond the conventional methods of getting direct customer feedback or conducting surveys. Numerous social media analytics businesses offer customised solutions that combine automated sentiment analysis with human evaluation. The metrics that are derived from these platforms help identify trends and develop a comprehensive strategy on how to take the business forward. Analysing multiple metrics

and combining them with experience and expertise can help businesses understand the needs of their customer better, which in turn helps improve efficiency in serving their customers. Following a competitive study, new social media analytics tools can suggest new or specialised markets for the goods/services. To assist organisations in preparing for potential disruptions, social media analytics can also be used to identify upcoming risks. Thus, companies must make sure that they create an innovative product that will enable them to not only maintain a sizable client base but also capture new markets in the constrained time frame, taking technology progress and their competitors' reactions into consideration.

While firms continue to get along well with digitisation, the adoption of technologies addressing the automation of data collection and management introduces a whole new range of ethical problems and challenges. It is quite challenging for organisations to getting relevant insights from the collected data. According to Farris et al. (2010), there are data reservoirs available, but there is a significant gap in the process for turning the data into actionable insights, which could lead to an analytical mismatch for a strategy from the standpoint of consumers and marketing (Zhang et al., 2010). The most common ethical dilemmas for traditional marketing analytics also involve purposeful or inadvertent customer privacy invasion using digitalised, seamless data extraction and scanning methods that could put the business in a difficult situation regarding customer data privacy and security (Mikalef et al., 2015). Social Media Analytics are used by companies in response to the competitive pressure. These companies sometimes may adopt short cuts and act unethically or even illegally in the form of corruption, bribery, low grade products and much more. Additionally the access and use of data by people in a variety of different roles leads to ethical issues on data storage leading to increased risks for society. A very important issue for organisations, while managing data is also the quality of data. The consequences of formulating business strategy on insights that are derived from inaccurate or poor-quality data can be long lasting. When inferences are made about individuals based on poor data, they may be of poor quality. The ability to share data facilitates the extraction of more intense insights from data. Repeated and unpredictable analyses of this data is possible. With the use of advanced analytics, businesses can mine expanding pool of unstructured data, provide more relevant and helpful insights, and develop better business and operational plans. This influences decision-making in many ways. Although not limited to group characteristics, the insights could contain significant inaccuracies and be biased toward specific individuals.

5 Comparative analysis

Traditional marketing encompasses a variety of advertising and marketing strategies. It includes the commercials that one can see and hear every day, making it one of the most well-known sources of marketing. Social media marketing is described as employing a variety of internet channels to connect with clients where they spend a lot of their time: In Table 1, a comparative analysis has been shown between social media marketing and traditional marketing approaches for the product innovation.

Table 1 Comparative analysis of traditional analytics vs. social media analytics

<i>Parameter</i>	<i>Traditional analytics</i>	<i>Social media analytics</i>
Communication	One way conversation	Two way conversation
Data	Data can be limited due to one way communication	Huge amount of data which needs to be integrated
Timeliness	Can be delayed due to press	Immediate
Transmission	Operate in a transmission system of many sources to many receivers	Operates under one source to many receivers' model
Understanding of consumer behaviour	Involve asking consumers a set of predefined questions, which will generate definitive responses	Help gain a better understanding of customer behaviour
Engagement	Traditional media is about reach	Social media is all about engagement
Tools	Excel, optimisation models	Social media analytics tools
Outcomes	Significant waiting period	Quick
Associated cost	Costlier	More affordable

From the above table it is quite evident that traditional marketing analytics approach is expensive compared to social media marketing analytics approach. It is easy to find the target customers with social media analytics and other source of tools. Social media marketing analytics can be used to promote the products over the internet with social media, smart phones, google Ads, etc. Tracking of results through social media analytics is easy and thereby improvement of campaigns is also easy based on the results. This ease and effectiveness of the Social Media Analytics approach can make it more effective towards the product innovation.

6 Conclusion

It can be difficult for businesses to respond to the constantly shifting needs and demands of their customers because of numerous internal and external factors. For a new product to be successful, numerous stakeholders must provide a considerable amount of information. Organisations can use social media analytics to analyse user-generated content that is publicly available on their social media platforms and those of their competitors to learn more about their customers and identify chances for NPD. Social media analytics can give businesses the possibility to better understand their customers and identify opportunities for the creation of new products by looking at customer information that is publicly available on their social media platforms. Real-time data mining and text mining may be made possible by technology advancements in social media analytics, which could help organisations gain a competitive edge that is tough for rivals to imitate. Leaders that use social listening to analyse what customers are saying on social media can gain an edge over their competitors. Additionally, businesses and management need to implement effective tactics that promote new, innovative items for improved performance, which encourages customers to pay more. Businesses can improve and refine their products and produce the next generation of products. A careful

implementation of the social media analytics in the marketing strategy can serve as an automated feeder to the product innovation process and provide a continuous support to the product development process.

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