# NIGHT OUT

Project ID: 2023-379

Final Report

P.T.Samarasekara

BSc Special (Hons) - Information Technology

(Specialization in Information Technology)

Department of Information Technology

Sri Lanka Institute of Information Technology

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September 2023

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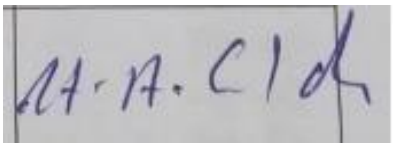
## DECLARATION OF THE CANDIDATE AND SUPERVISOR

We declare that this is our own work, and this project proposal does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of our knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

| Name | Student ID | Signature |
|---|---|---|
| P. T. Samarasekara | IT20493424 |  |

The above candidates are carrying out research for the undergraduate dissertation under my supervision.



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Dr. Amitha Caldera Date

# ABSTRACT

To increase profits in the cutthroat event management market, companies must create novel strategies. An approach that might be used is the implementation of a personalized recommendation system that uses machine learning techniques to deliver exquisitely customize recommendations based on users' unique preferences, proclivities, and pursuits. in this proposed system's profit maximization component entails careful consideration of numerous factors that influence profits. Businesses must first determine their objectives before understanding the key factors that have the biggest effects on profit in order to implement this component. They can then compile and examine relevant information about costs, revenues, market trends, and competitors in order to create a strategy that maximizes profits. Businesses can implement a system that offers a thorough report on trending events for particular demographics of people attending events that describe their preferences, from age groups to gender-specific events and food preferences, by gaining knowledge from the gathered and examined user data. When gamification elements are added to the recommendation component, user engagement can be raised and community participation can be sparked. The strategy needs to be continuously assessed and modified to keep maximizing profits. The results of a profit maximization component must be periodically assessed, and any necessary adjustments must be made to enhance outcomes.

In conclusion, the implementation of a personalized recommendation system with a Profit Maximization component can catapult businesses in the event management industry towards higher profitability by optimizing key variables. Through the employment of machine learning techniques that deliver highly personalized recommendations based on users; individual preferences and behaviors, businesses can stimulate user engagement and encourage participation in the community. The integration of gamification elements into the recommendation component can further escalate engagement, leading to a substantial rise in profits. Regular monitoring and adjustment of the strategy is the sine qua non to ensure sustained success.

# ACKNOWLEDGEMENT

I extend my heartfelt gratitude to the individuals and institutions whose support and guidance have been instrumental in the successful completion of this dissertation.

First and foremost, I express my deepest appreciation to my dedicated academic advisor, Dr. Amitha Caldera, who's unwavering commitment to academic excellence and tireless guidance have been the cornerstone of this research endeavor. Your mentorship has not only enriched this work but also deepened my understanding of the subject matter. I am indebted to the faculty and staff of Sri Lanka Institute of Information Technology for providing a nurturing academic environment, access to resources, and a platform for intellectual exploration. Your contributions to my academic journey have been invaluable.

My profound thanks go to my family for their unwavering support and encouragement throughout this journey. Your belief in my abilities and unwavering support sustained me through the challenges of research and writing. I also extend my appreciation to my friends and fellow students for their camaraderie, insightful discussions, and shared experiences, which have enriched this research.

This dissertation is a testament to the collaborative spirit that thrives within academic and research communities. Your collective support and encouragement have played a pivotal role in shaping this work. As we move forward, may the lessons learned and insights gained from this research continue to guide us toward a future of innovation, progress, and academic excellence.

Thank you all for your contributions, mentorship, and unwavering belief in the importance of this research.

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# 1 INTRODUCTION

In the quest for increased profits, businesses often seek out inventive strategies. One such avenue involves the use of a personalized recommendation system, powered by machine learning. Within this proposed system lies a Profit Maximization component, which necessitates careful consideration of various factors impacting financial gains. It calls for businesses to set clear objectives, comprehend the primary profit drivers, and conduct thorough analyses of costs, revenues, market trends, and competition. This system, capable of providing detailed reports on trending preferences, ranging from demographics to individual tastes, offers a potential path to greater profitability. The inclusion of gamification elements can further elevate user engagement and encourage community involvement. To ensure ongoing success, continuous assessment and refinement of the profit strategy are vital.

## 1.1 Night out hybrid event management/social app

Events no longer need to take place in real venues thanks to the digital age From the utilization of social platforms, person can establish communication with people across the world. This enables them to achieve a broader audience and subsequently facilitates their ability to engage in international collaboration efforts. Event organizers are increasingly using social media platforms for advertising, interaction with participants, and immersive experiences. Needless to say, managing events and social profiles may be a excruciating task that takes a lot of time and effort. A hybrid system that combines the capabilities of social media platforms with event management is now available to event managers. this proposed system uses AI, machine learning, and other Bleeding-edge technologies makes event planning easier while incrementing social media participation. Event organizers can now design high performing events that encourage more engagement among attendees by using a variety of social media platforms.

One of the main advantages of the system is, its analytical ability. Organizers can harvest data in many ways such as tickets sales, social media posts, comments and etc to make data-driven decisions based on analytical tools.. With the use of this software, event organizers may examine customer feedback to find potential event improvement areas, such as venue layout or food quality. These insights might then be used to enhance the experiences of future events. Real-time reporting, trend analysis, and data visualization also make it simple to track the development of an event while making data-driven decisions that ultimately contribute to its success.

The app's AI-powered capabilities include real-time data analysis and tailored suggestions. Event organizers now have effective tools at their disposal to provide unforgettable occasions while learning priceless information about guests'preferences and behavior. The analytics tools in Night out App are a priceless resource for event organizers. This tool can be used to organize successful events of any scale from small company functions to big conferences, thanks to its data analytics, automation, and integration capabilities. This enables event planners to remain ahead of the competition regardless of the size or number of participants. Due in large part to artificial intelligence (AI) technology, the event management business is quickly developing as event planners search for methods to improve workflow, engage guests more effectively, and create enduring experiences.

- Social Media Networks and Platforms

Social media has become an integral part of people. The people who uses social media is still rising in significant numbers. according to a recent study it shows that there are almost five billion people uses internet and more than half of them uses social media. This indicates how integral social media to people's lives.

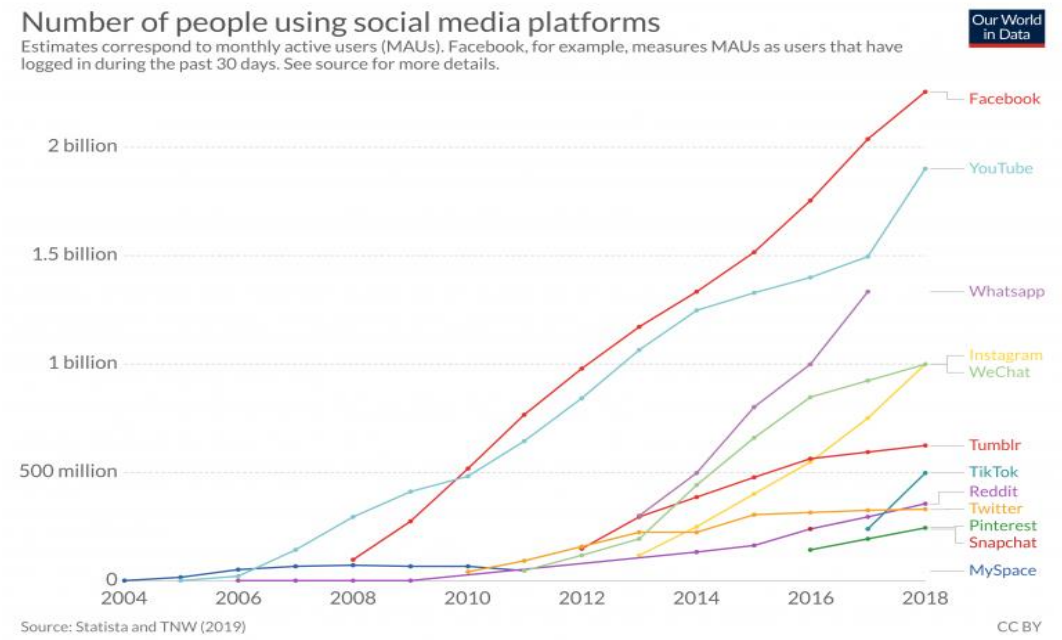


Figure 1.1: The rise of social media

Source: Statista and TNW (2019)

In 1996, Andrew Weinreichian launched "Six Degrees," the first social networking site ever [2]. User accounts, buddy lists for connecting with pals, and school affiliations were the fundamental social networking features. The service's networks were constrained despite the site having millions of registered users since there weren't many people using the internet. The website was bought by Youth Stream Media Networks in 2000.

The first known social platform was Myspace which was founded in 2003. It attained a million active users per month in 2004. Brad Greenspan, Josh Berman, Chris DE Wolfe and Tom Anderson founded it. it even became the most popular website in 2006 surpassing Google, and in 2007 its valuation reached $12 billion. Myspace was unable to regain brand dominance following Facebook's arrival into the market in 2008 and sold the platform to the advertising company Specific Media. Since that time, social media has quickly expanded. In 2008, a group of people including Mark Zuckerberg, Dustin Moskovitz, Eduardo Savarin, Andrew McCollum, and Chris Hughes founded Facebook now has more than 2.91 billion active members worldwide. As of September 2021, the corporation "Meta" owned this social media network, which has assets of

169.585 billion USD. The second most popular social media site is YouTube which its parent company is ABC.inc . The third most popular social media is WhatsApp with over two billion user which also owned by Meta Company.

Table 1.1: Most popular social media platforms

| Rank | Platform Name | Parent Company | Country | Monthly Active Users |
|---|---|---|---|---|
| 1 | Facebook | Meta | United States | 2910 million |
| 2 | YouTube | Alphabet | United States | 2291 million |
| 3 | WhatsApp | Meta | United States | 2000 million |
| 4 | Messenger | Meta | United States | 1300 million |
| 5 | Instagram | Meta | United States | 1287 million |
| 6 | WeChat | Ten cent | China | 1225 million |
| 7 | Kuaishou | Kuaishou | China | 1000 million |
| 8 | TikTok | Byte dance | China | 1000 million |
| 9 | Telegram | Telegram | United Arab Emirates | 600 million |
| 10 | Qzone | Ten cent | China | 600 million |

Source: [3]

In addition to being used for communication and networking, which was social media's original purpose, it is also often used for sharing media, blogging, online shopping, and other activities. social media can be divided in to few types

Type 01 - Social Networks

Ex: LinkedIn, Facebook, Twitter

1. Type 02 - Media Sharing Networks

   Ex: Snapchat, YouTube, Instagram

2. Type 03 - Discussion Forums

   Ex: Reddit, Digg, Quora

3. Type 04 - Bookmarking and Content Curation Networks

   Ex: Flipboard, Pinterest

4. Type 05 - Consumer Review Networks

   Ex: TripAdvisor, Yelp, Zomato

5. Type 06 - Blogging and Publishing Networks

   Ex: Tumblr, WordPress, Medium

6. Type 07 - Social Shopping Networks

   Ex: Polyvore, Fancy, Etsy

7. Type 08 - Interest-Based Networks

   Ex: Goodreads, Last.fm, Houzz

Given that it has characteristics from both types of social media network, this proposed system is a combined system between social network and a event management systems. It contains unique characteristics that other social media network has ever had before, such as user navigation, user assessment, and user recommendation subsystems.

## .1 Background Survey

To identify the main problems and issues within the domain, and to get an overall idea about the domain such as to whom we provide this solution and how the problems diverse, we conducted a google form and 378 people have responded.

1. User Age

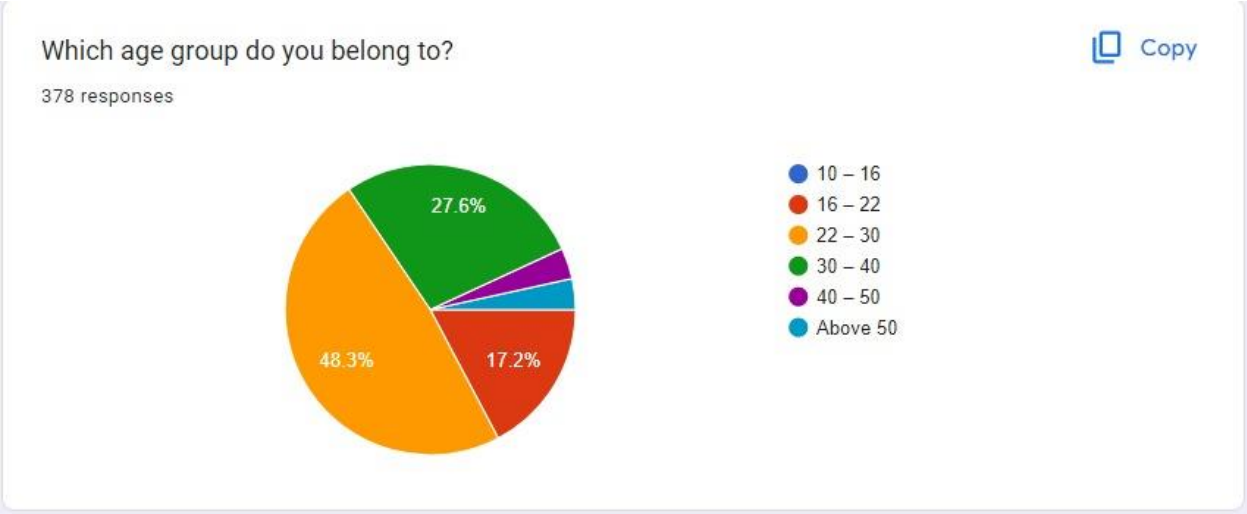


Figure 1.2: Age groups of the users

Out of the sample of 378, 48.3% of the people have responded that they are between 22-30 years which means most of the participants were younger crowd. The second and the third age groups were to respond is 30-40 and 16-22 which are adjacent to th2 22-30 group. From the result, we can assume the users will be mainly 22-30 years of age.

2. User Gender

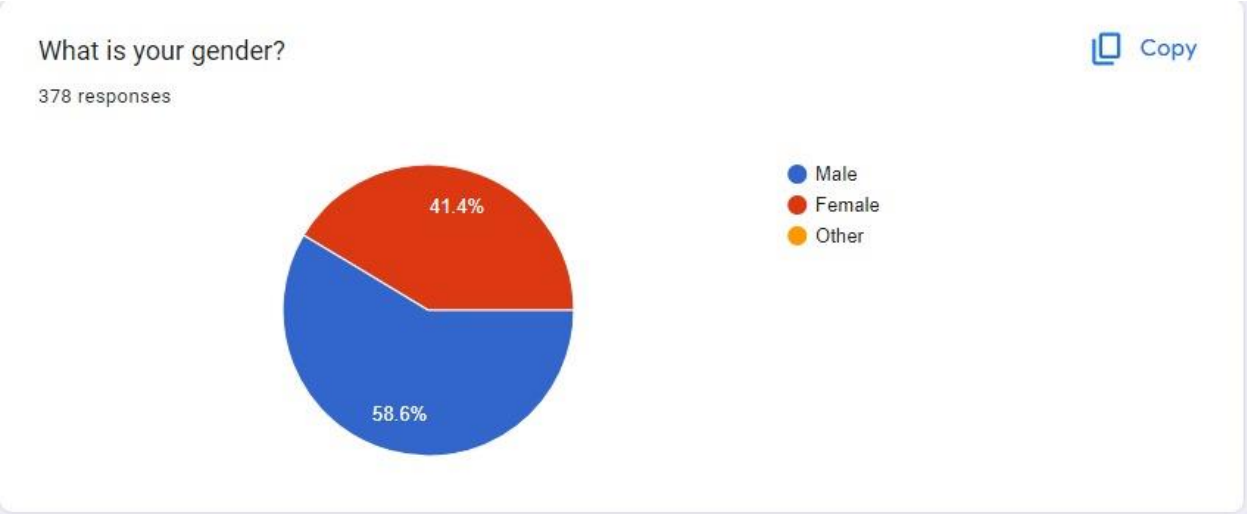


Figure 1.3: User Gender

Out of the 378 responses received, 58.6% of the participants identify them as male and the rest is identified as female. This information is essential when considering the human computer interaction aspects of the app. App color themes and the user friendliness highly depends on the user gender and the age group.

3. User Type

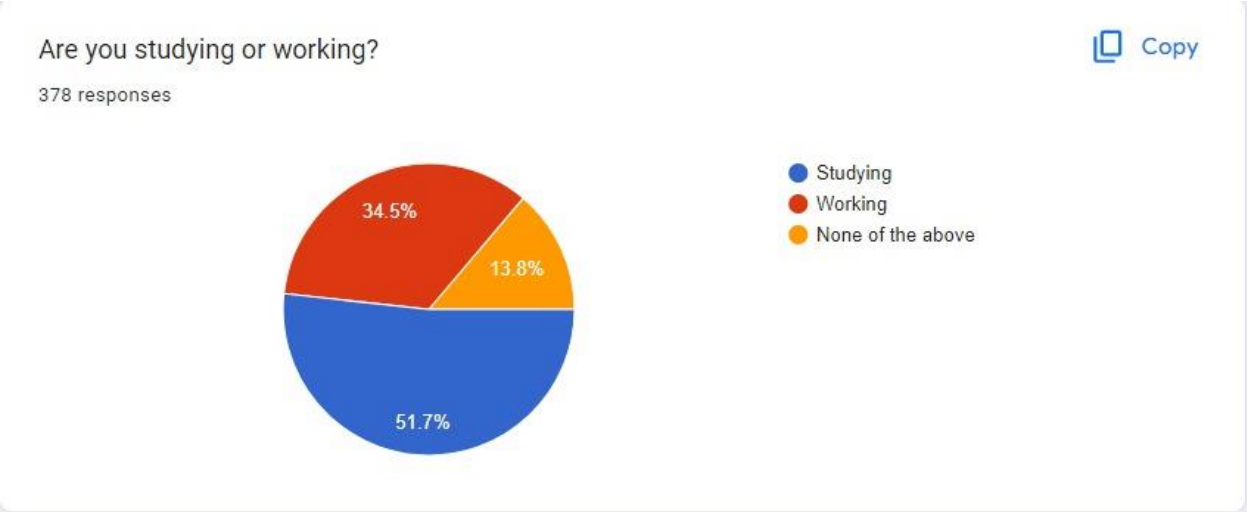

Figure 1.4: User Type

According to the survey, 51.7% of people have responded that they are studying and 34.5% of them are working and 13.8% of them are not working nor studying respectively. This information is really helpful when deciding what type of events to hold via the app and what kind of events that should be prioritized.

4. Usage of social media platforms to get notified about an event

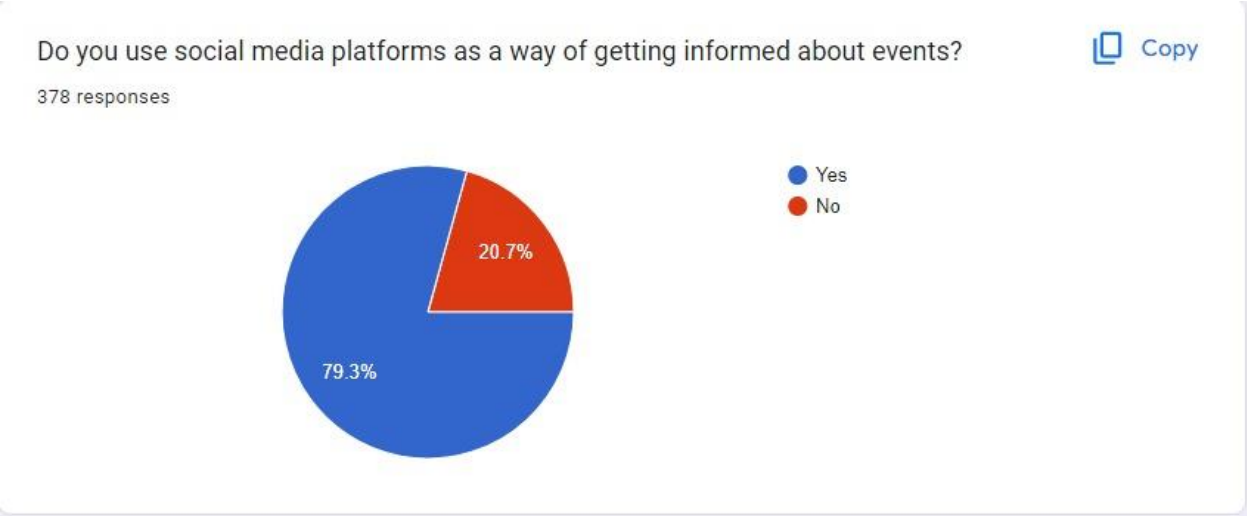


Figure 1.5: Usage of social media platforms to get notified about an event

The majority of the participants, if not 79.3% of the participants responded positive to social media platforms as a way of getting informed about events. Only 20.7% of the participants are not using social media as a way of getting informed about events. To the people who currently use social media as a way of getting informed about events can have more improved benefits from this app while the others can get introduced to the app and start enjoying benefits of the app.

1. Likeliness to attend to an online hosted event.

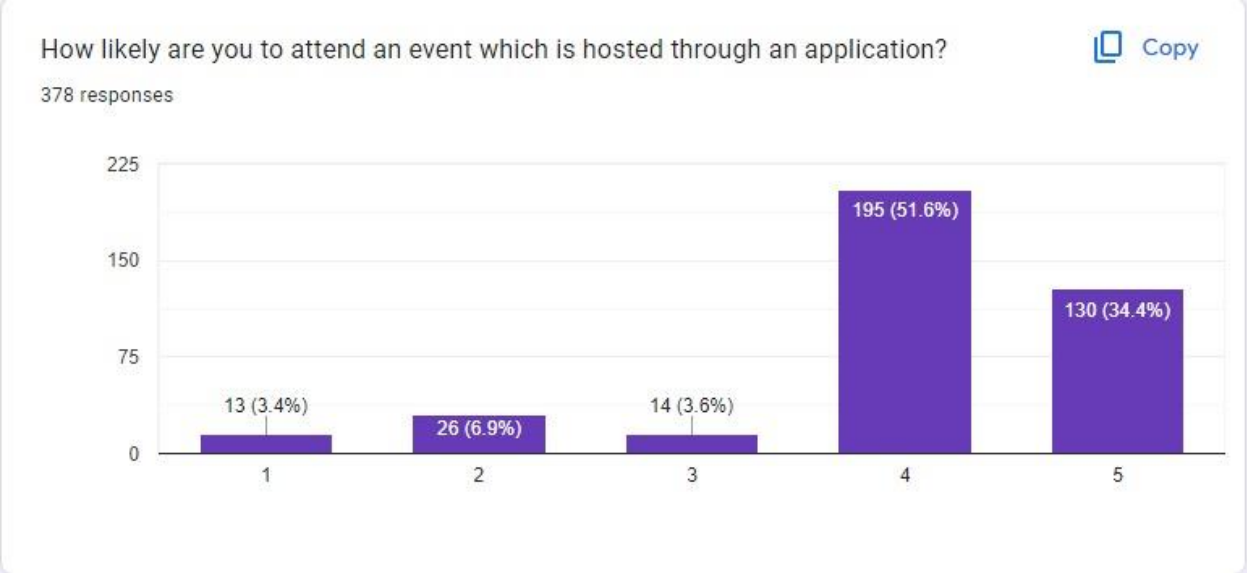


Figure 1.6: Likeliness to attend to an online hosted event.

Even if the events are hosted through an application, it is not effective if the users are not attending the suggested events. Currently, 51.6% of participants rated 4 which means 80% likeliness in attending events hosted trough applications. Our goal is to get this numbers up and make most of the people participate events suggested by the application.

1. Use of the application

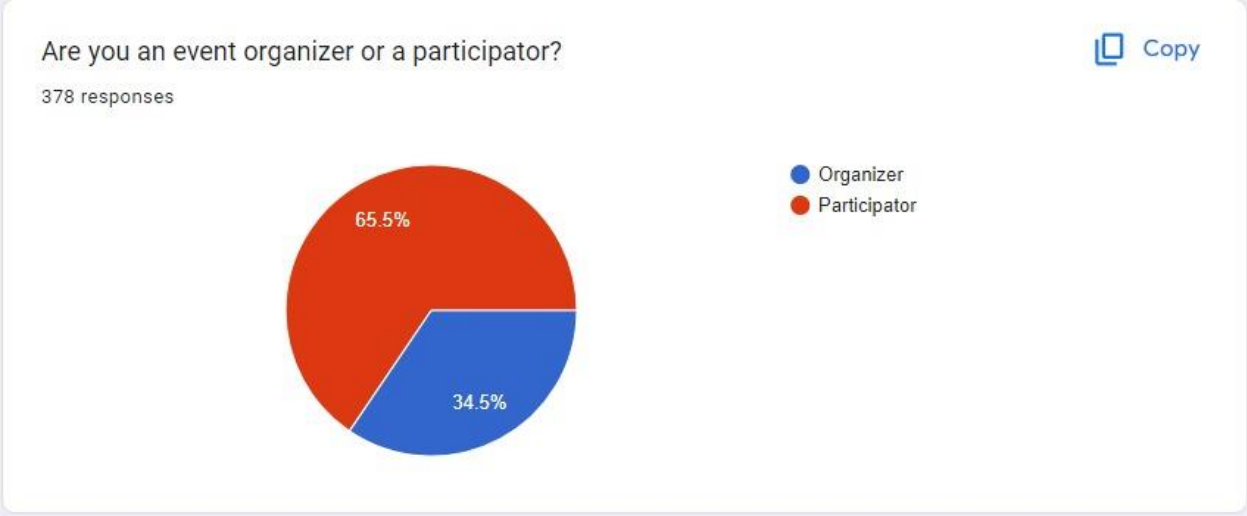


Figure 1.7: Use of the application

There are two types of users to this type of application.

1. Organizers
2. Participants

Organizers are treated in a special way in order to optimize their businesses through the data and analysis provided by the application while participants can get suggestions according to their preferences. With this data, we can get a basic idea of the ratio of organizers to participants.

2. Preferred event type

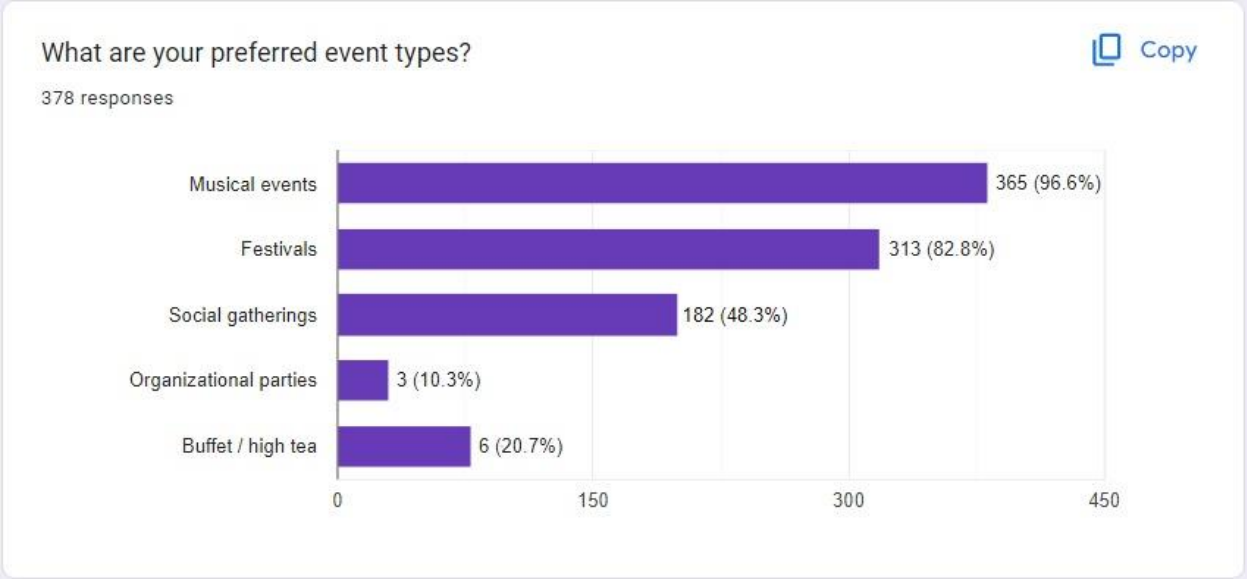


Figure 1.8: What are your preferred event types

According to the survey results, the most popular event type is musical events, which 96.6% would agree. However, the results can vary depending on the age, gender and the users' preferences. Apart from the musical events, festivals, social gatherings, buffet / high tea events and organizational parties are the next most popular events.

3. Expectations from a community

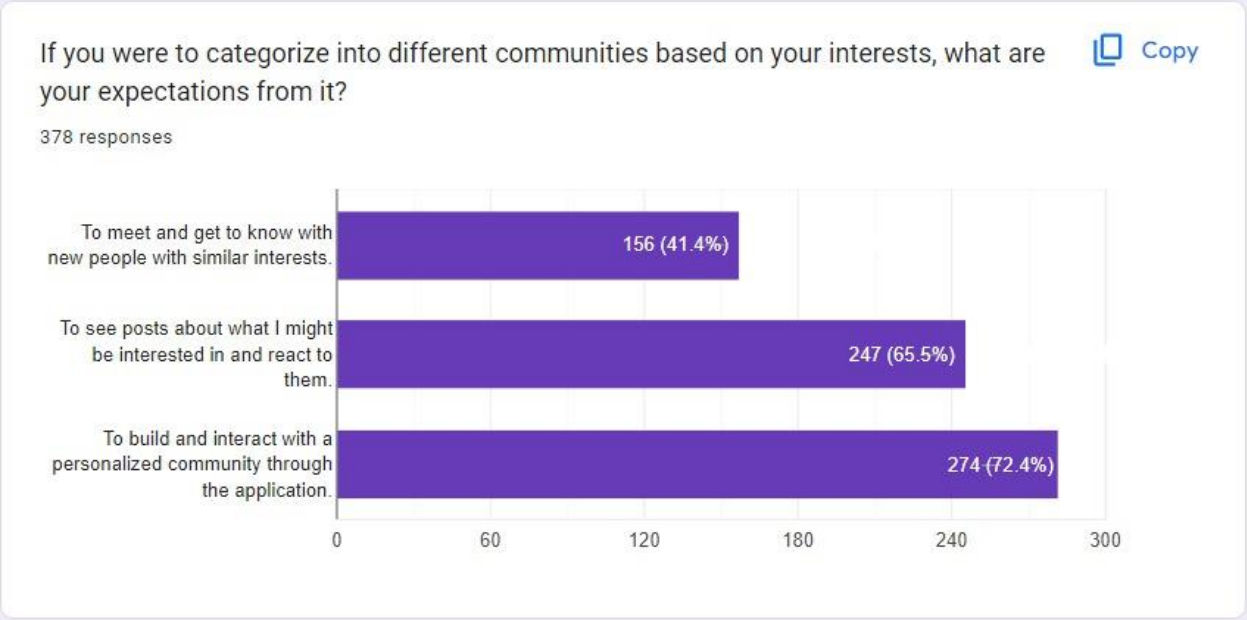


Figure 1.9: Expectations from community

Another main thing to consider is what are the expectations of the application. 72.4% of the participants have responded that they want to build and interact with a personalized community through the application. 65.4% of the participants have responded tat they want to see posts about what they might be interested in and react to them. 41.4% of the participants have responded that they want to meet and get to know new people with similar interests.

4. Interest towards the solution

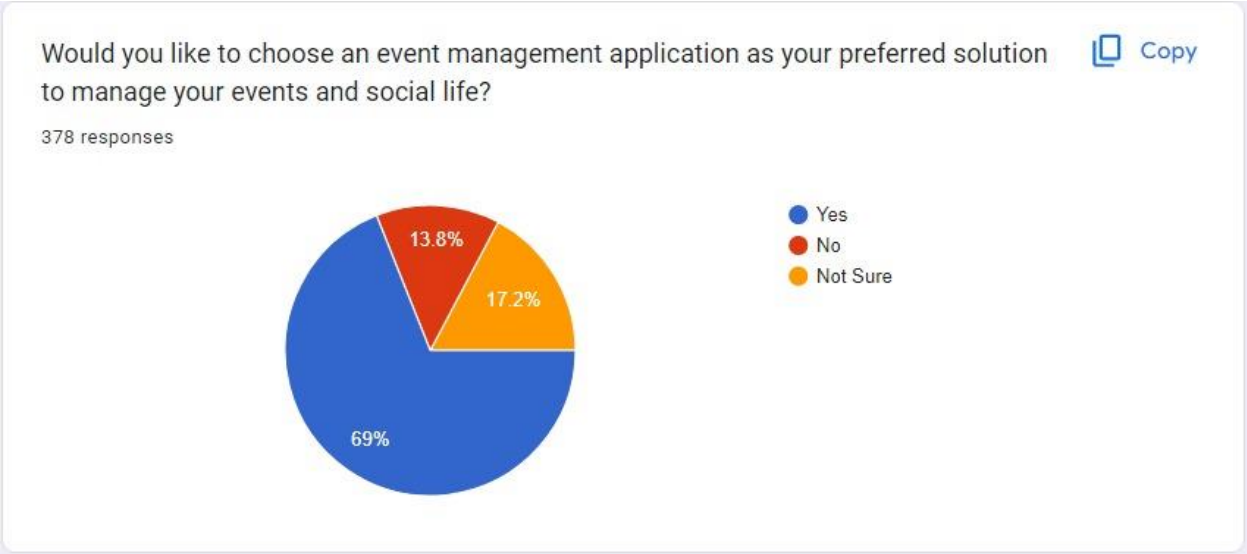


Figure 1.10: Interest towards the solution

Finally, we asked the participants if they would like to choose an event management application as your preferred solution to manage your events and social life. 69% of the participants answered yes and were positive about the solution. We can come to conclusion that most of the people would use the application right away and others would get introduces to the application eventually.

## .2 Literature Survey

In this literature survey, we will assess some of the recent research and developments in this field.

These research papers draw attention to the vast potential of leveraging artificial intelligence methodologies to maximize profitability across multiple industries. The domains range from e-commerce, online advertising, ride-hailing, to online marketplaces, to name a few. Within this context, the authors shed light on a plethora of machine learning algorithms that have been employed with the goal of streamlining pricing, inventory management, product recommendations, and dispatching strategies. The algorithms vary from deep reinforcement learning, collaborative filtering, to online learning, all 0f which have been shown to yield tremendous gains. The authors, moreover, underscore the criticality of integrating user behavior analysis real-time data, and market trends to achieve optimal outcomes.

"Profit Maximization through Intelligent Pricing and Inventory Control" by Min Liu and Mohammad Mahdian, published in the Proceedings of the 12th ACM Conference on Electronic Commerce. This paper proposes a clever machine learning approach for pricing and inventory control to maximize profit using a combination of online learning algorithms and Markov decision processes.

Young Hun Jung and Yung Yi's article, "Profit Maximization in Online Advertising Using Deep Reinforcement Learning," was included in the 2019 International Conference on Machine Learning and Data Mining in Pattern Recognition proceedings. In order to maximize advertising income for online platforms while taking into consideration a variety of variables, including user behavior, advertising costs, and ad placement, this research suggests a deep reinforcement learning method.

The International Journal of Computer Applications article "Maximizing Profits in E-commerce through Intelligent Product Recommendations" was written by R. Jayaprabha and K. Premalatha. In order to increase revenues in online commerce, this study suggests a collaborative filtering method for creating customised product suggestions. The method generates suggestions by combining user behavior and product similarity.

By Yunxia Zhu and Wenying Feng, "Profit Maximization in Online Social Networks through Recommendation and Pricing," was published in the 2016 International Conference on Advanced Computer Science and Information Systems proceedings. In order to increase revenues for online social networks, this article suggests a recommendation and pricing model that combines user behavior data, network structure, and social influence.

The paper "Maximizing Revenue in Online Marketplaces using Reinforcement Learning" by Matthew D. Hoffman and David M. Blei, published in the proceedings of the 2017 Conference on Economics and Computation, presents a ground-breaking method for enhancing revenue streams in online marketplaces by utilizing reinforcement learning techniques. The strategy mostly depends on a wide range of variables, such as user preferences, supply and demand dynamics, and many sophisticated pricing techniques, among others. The suggested approach aims to improve income production by taking into account these complex factors, giving online marketplaces a way to efficiently use this potent machine learning tool to maintain their competitiveness in the ever changing digital environment.

the 2019 IEEE International Conference on Communications presented a paper entitled "Profit Maximization for Ride-hailing Platforms through Intelligent Pricing and Dispatching," which was penned by Hui Yang, JIanwei Huang, and Xin Wang. This paper posits a highly sophisticated complex algorithm that employs a fission of bleeding edge techniques including user behavior analysis, real-time traffic data , and dynamic pricing stratergies, with the objective of optimizing profit margins for ride-hailing platforms.

Journal of Electronic Commerce Research article by Zhongyu Wei, Yong Liu, and Jie Zhang titled "Maximizing Profits in Online Shopping Using Machine Learning Techniques." In order to maximize profitability in online commerce, this article suggests a machine learning strategy that combines user behavior research, market trends, and pricing tactics.

## .3 Research Gap

To highlight the novelty aspect of this research, we consider following factors.

Future profit forecasting is a complex task that calls for the careful balancing of many different variables. Market trends, consumer behavior, competitive analyses, seasonal trends, and other relevant factors are crucial in determining how to forecast a company's expected future profit. It will take a tremendous amount of data collection and careful analysis to complete this challenging assignment. To uncover patterns and trends that allow the building of reliable models and projections that may predict future events with a high degree of precision, a variety of quantitative and statistical methodologies must be used. This intricate process necessitates the employment of advanced statistical models and methodologies to forecast future revenues as well as the acute awareness of multiple aspects.

For instance, a company would use market trend analysis to forecast future sales. They would search its sector for emerging trends, like the expanding demand for sustainable products or the growing propensity for online shopping. They might then incorporate this with consumer behavior research, using this data to determine which goods or services are most in demand by their clients. This would provide them with vital information for predicting future sales. Because businesses must be informed of what their rivals are doing and how they may respond to market changes, competition research is crucial for predicting future profit. Businesses can anticipate prospective opportunities and dangers and adjust their strategy accordingly by closely examining the actions of their rivals, ensuring that their market position is impenetrable. Due to the fact that demand changes in throughout the year for many businesses, seasonal trends are especially important in anticipating future profits. For an example, a retailer can have a massive surge in sales around the holidays whereas a restaurant would experience a decline in business during the summer. Businesses may develop reliable models and predictions that precisely predict future demand and enable them to modify their strategy accordingly, ensuring that their financial goals are fulfilled by thoroughly studying past data and seasonal trends.

Overall, when estimating future profit necessitates a complex fusion of domain knowledge, data analysis, and statistical modeling. Businesses can produce reliable and accurate forecasts that support informed decision-making, ensure their financial objectives are met, and generate forecasts by skillfully utilizing these factors and utilizing the appropriate tools and methodologies. A thorough method of examining historical data to identify recurring patterns that appear at predictable intervals—whether daily, weekly, monthly, or yearly—is seasonal trend analysis. This approach is also helpful in understanding how customer behave, sales, or other metrics change over time and how seasonal elements, such holidays, weather, or other significant events, may have an impact. A large data-set is needed to in order to analyze season changes more deeply. The data is then placed on a graphic so that analysts may quickly identify trends and patterns. The main purpose of conducting a research like this is to find recurrent patterns, which could ccompletely cover, although not limited to, unexpected variations in online activity or transactions transpiring during designated intervals within a given year. The idea is easy to depict by focusing on a single specific product or service, the sales of this specific product or is increased highly in the weeks, before the long holiday .With this data, the sales person can use this data to predict the demand for the product and manage the stock levels Seasonal trend analysis can be of high important to businesses that heavily rely on demand that attracts in seasons, such as retailers, travel companies, or agriculture businesses. By understanding how demand fluctuates over time, these businesses can better plan their operations, adjust pricing strategies, and allocate resources to maximize profitability.

Market trend analysis is a very complicated and difficult procedure that involves a deep analysis and appraisal of the general course of the market or a certain sector. Its core objective is to find and analyze the patterns or trends that is Quintessential for wise business decisions. Numerous data elements, including sales numbers, revenue, market share, customer behavior, and Economic indicators, are intensively examined as part of the analysis. This analysis show significant patterns that can be used to forecast future market trends. A number of statistical methods and approaches are frequently used in the very complicated process of the market trend analysis, which is very important for the spotting and understanding trends. Regression Analysis is used to spot relationships between various variables and then predict future results based on those

associations. It is know as the basic approach to it. On the other hand, Moving averages are used to reduce short-term swings and spot long-term patterns. Last but not least, Trend analysis, a time-tested technique, is carefully and thoroughly examining past data to spot patterns and trends that can be used to predict future market developments.

Businesses use analysis of the market trends in many ways

1. Identifying emerging markets or market niches with potential for growth
2. Determining the potential demand for new products or services
3. Identifying competitors and their market share
4. Evaluating the effectiveness of marketing strategies
5. Developing pricing strategies based on market demand
6. Identifying potential risks or threats to the business
7. Informing investment decisions

Market trend analysis, is a paramount instrument for companies striving to maintain competitiveness and adapt to shifting market conditions, is contingent upon the identification and evaluation of trends. Informed decisions regarding strategies, products, and services can be made by scrutinizing trends and, as such, profits can be maximized, while ensuring long-term success.

Competitor analysis, a critical component of every business strategy, involves an assessment of the benefits and disadvantages of competitors in a certain market. Gaining knowledge about rivals' strengths, weaknesses, plans, and potential threats helps businesses position themselves more effectively. Analyzing competitors typically entails investigating their offerings, costs, marketing plans, distribution channels, and customer profiles. Surveys, investigation of widely available public financial documents, observation of social media and online reviews, and tracking in-person and online purchase trends are all methods for obtaining this information.

Once the pertinent information has been gathered, it may utilize to create detailed profiles of every significant rival in the market. This profile must to include important details like the target

market, the unique selling preposition, marketing and distribution plans, as well as general strengths and weaknesses.

Using this data, organizations should then pinpoint areas where they can set themselves apart from rivals and conquer the untapped market opportunities. Offering more affordable cheap prices, creating very effective marketing plans, or improving the features of the product are all possible ways to do this. In a market that is rapidly changing, assessing and updating competition analyses on a regular basis is a continual process that merits serious thought. Contrarily, customer behavior analysis includes the process of understanding and deconstructing customers' behaviors in order to identify trends, insights, and opportunities for business expansion. Examining information on consumer interactions with a companys goods, services, and marketing initiatives, including website traffic, social media involvement, purchase history, and client reviews, is part of it.

The endless benefits of customer behavior analysis have the potential to give businesses a profound understanding of the target market, enabling them to arrive at informed conclusions, refine customer experience, cultivate client loyalty, and stimulate sales. A thorough analysis of purchasing trends can be carried out by closely examining consumer purchase history, affording crucial insights into the items and services that enjoy peak popularity, thereby facilitating strategic marketing initiatives that promote those specific products. By vigilantly observing social media interactions, Businesses can use this insight to optimize their products and services by thoroughly assessing the general mood of their customer. Customer behavior analysis frequently uses A/B testing, customer segmentation, customer journey mapping, and predictive analytics. In A/B testing, two versions of a product or marketing campaign are contrasted to see which one performs better. Contrarily, customer segmentation categorizes clients into various groups based on shared traits like demographics, behavioural tendencies, or preferences. Analyzing the steps customers take to interact with a firm and pinpointing problem areas is known as customer journey mapping. On the other hand, predictive analytics uses data and statistical algorithms to forecast future consumer behavior, such as the propensity to make a purchase or churn..

The analysis of complementary businesses is a crucial strategy for businesses to optimize their product and service offerings. Complementary business analysis involves identifying businesses that offer products or services that can synergize with one's own business offerings. The addition of complementary businesses can impart tremendous value to a company's existing product or service, thereby leading to enhanced cross-promotion opportunities and increased revenue.

A concrete example of this strategy in action is a company that sells bicycles identifying a complementary business such as a sports store that sells athletic apparel or a coffee shop that caters to cyclists. Through this partnership, the bicycle company can offer joint promotions, events or discounts to customers, thereby expanding their reach and appeal. Complementary business analysis has a favorable effect since it may boost revenue and market share while also increasing consumer engagement and loyalty. Businesses can draw additional clients who might not have been interested in their initial product or service offerings by providing supplementary goods or services. When considering consumer behavior, it is important to acknowledge the potential impact of a customer's preexisting affinity towards a particular company. Such an inclination may significantly sway their purchasing decisions, as they may be more inclined to invest in supplementary products or services from a brand with which they have an established and favorable rapport. However, it's essential to carefully consider the potential impact of partnering with complementary businesses that may be complementary to competing businesses. For instance, a bicycle company partnering with a competing sports store may lead to customers being drawn away from the bicycle company's offerings and towards the competing sports store, thereby potentially leading to a decrease in revenue and market share. A cogent comparison between businesses and events, with an eye toward the salient factors of perplexity and burstiness, can furnish valuable insights into the relative merits and demerits of each enterprise. This, in turn, empowers the stakeholders of these entities to assess which ones harbor the potential for success and growth. A comprehensive analysis of market trends, for instance, can lay bare the winning ventures in the market and the ones that are ripe for expansion. Through a meticulous assessment of market trends, businesses and events can unearth profitable opportunities to hone their offerings, pivot their strategies, and more effectively align with the expectations and requirements of their customer base.

Comparably, competitor analysis may help in identifying the strengths and shortcomings of rival companies and events, allowing companies and events to pinpoint areas where their own offers can be improved to more effectively compete in the market. Additionally, consumer behavior research may offer helpful perceptions into what patrons expect from companies and events, assisting companies and events in making better choices on how to market their services and draw in new patrons. lastly, seasonal trend analysis may assist organizations in identifying trends in patron behavior based on seasonal aspects like weather or holidays. Businesses and events may better adjust their services to match client demands throughout particular seasons of the year by utilizing seasonal trends, further increasing customer engagement and loyalty. Complementary business analysis can help businesses and events identify opportunities to partner with other businesses and events that offer complementary products or services. By working together, businesses and events can leverage each other's strengths and attract a broader customer base.

One may gain priceless insights from various enterprises and events depending on a variety of aspects in the goal of improving products and achieving a competitive advantage in the market. Performance evaluation reports can provide a complete study of business or event performance by combing through data from many sources. Data from a variety of analyses, including market trend analysis, competition analysis, customer behavior analysis, seasonal trend analysis, and complementary business analysis is typically incorporated into these reports. Performance evaluation reports serve the purpose of supplying actionable insights that businesses can employ to engender informed decisions, aimed at improving operations and bolstering profitability. These reports frequently include information like sales numbers, customer satisfaction scores, internet traffic, and social media participation. To create performance assessment reports, software programs that facilitate data extraction and present the information in a user-friendly format are usually employed. These programs allow users to customize the reports to incorporate specific metrics and data visualizations such as charts and graphs, which illuminate trends and patterns in the data. By using performance evaluation reports to track progress over time, compare performance to industry benchmarks, and identify areas of improvement, businesses can remain attuned to their performance and make data-driven decisions that foster growth and success.

The promotion of businesses and events can be implemented through various platforms, each featuring a diverse set of techniques. One plausible method involves examining trending, highly rated, and top businesses and events to uncover patterns and commonalities that can be leveraged to promote other businesses and events. For instance, a platform could rely on data from customer behavior analysis, market trend analysis, and seasonal trend analysis to identify businesses and events that are currently in vogue and apt to generate interest. This information could then be utilized to create targeted promotions and advertisements for analogous businesses and events. Complementary business analysis is another method for identifying businesses that are likely to promote one another's products or services and complement one another. For example, a platform may suggest collaborations between a restaurant and a nearby theater or between a clothes retailer and a spa. Furthermore, identifying popular hashtags and influencers who can be used to create buzz and engagement for businesses and events might involve using social media trend research to identify how to promote businesses and events. In order to effectively promote businesses and events, it is necessary to analyze data, put insights into practice, and create focused marketing strategies that may help organizations reach new audiences and increase income.

| Feature | Stylebook | Salesforce | Shopify | Yummly | Klavio | Square | Trello | Canva | Proposed system |
|---|---|---|---|---|---|---|---|---|---|
| Predicting future profit | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ |
| Seasonal trends analysis | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ |
| Market trends analysis | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Competitor analysis | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| Customer behavior analysis | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ |
| Complementary business analysis | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Comparing performance | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| Generating performance evaluation reports | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Promoting businesses and events | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Table 1.2: Proposed system compared to existing systems

The Events & Entertainment Managing and Finding system, in contrast to other platforms such as stylebook, salesforce, shopify, yummly, klavio, square, trello, and canva, is a enormous platform with a few distinct features. The system was designed especially for the events and entertainment industry, offering specialized solutions that completely handle the distinct demands and

requirements. To put it another way, users have access to specialized features that cover a wide range of services, from ticketing choices to event planning tools, all specifically designed to meet the requirements of event and amusement administration.

The system also uses sophisticated analytics and trend analysis tools that give users in-depth analyses and wise suggestions for improving their event and entertainment enterprises. These tools cover a wide range of analyses, such as market trend analysis, seasonal trend analysis, and consumer behavior analysis, allowing organizations to predict their future performance and profitability and make wise decisions. The system's outstanding capacity to promote events and enterprises by carefully examining top-rated, trending, and highly-rated businesses and events is yet another distinctive feature. Through this feature, companies may boost their visibility and draw more customers by capitalizing on the popularity of other successful industry events and companies. This will increase their profitability and overall success.

The Events & Entertainment Managing and Finding system is an invaluable and unparalleled resource for event and entertainment businesses looking to improve their performance and reach previously unheard-of levels of profitability thanks to its distinctive combination of specialized features, advanced analytics, and targeted promotion tools.

## .4 Research Problem

Currently, the difficult task of profit forecasting in the absence of a specific platform is a problem that affects both businesses and event planners. Businesses must overcome the difficult challenge of estimating profits without a centralized platform. They may make poorly informed decisions and investments as a result of the lack of a comprehensive platform that provides them with solid data and insights about customer behavior and market trends, which could impede their chances of expanding and generating new revenue.

The limited availability of accurate and current information is one of the major obstacles. Businesses might rely too heavily on dated or insufficient data, which could lead to erroneous predictions and bad judgment. Losses in growth and revenue-generating opportunities could result from this. Another major obstacle is the lack of visibility into consumer preferences and behavior. Businesses may be unable to comprehend the quirks of their target audience and adjust their offerings due to a lack of a dedicated platform that tracks customer interactions and engagement. Sales and revenue could decline as a result of this inconsistency between customer needs and product offerings.Additionally businesses might struggle to make the most of their marketing and promotion initiatives. Businesses may find it challenging to discover the most efficient marketing channels and campaigns due to the absence of accurate data and information on client behavior, which can squander valuable resources and result in lower returns on investment. In conclusion, businesses may struggle to accurately predict their profits without a dedicated platform, which may lead to missed opportunities and a lower revenue potential. Lack of comprehensive data and insights may directly influence their decision-making, customer targeting, and marketing stratergies & efforts, making it challenging for them to compete in their respective industries. Even the most savvy business minds may find it difficult to accurately predict profits due to their numerous complexities and subtleties. Predicting profit based on seasonal and monthly patterns in trends is one of the biggest challenges. Monthly profit forecasting can be a difficult task, especially for companies without a specialized platform. Businesses may find it

difficult to spot patterns and trends in their monthly sales data without access to in-depth analytics and insights, which could result in erroneous predictions and subpar decision-making. Another tricky problem that firms face is the lack of visibility into seasonal trends and swings. Businesses may not always be aware of the numerous elements, such as holidays, weather patterns, or economic conditions, that affect sales during various months. This makes it difficult to precisely predict sales and revenue on a monthly basis.

Lack of information regarding consumer behavior and preferences is another important problem. Businesses might not be able to determine which goods or services are popular at different times of the year without a centralize platform that monitors customer interactions and engagement. This may lead to inventory that is either overstocked or under stocked, which could result in monthly lost sales or excess inventory costs. Businesses may also find it challenging to pinpoint monthly opportunities for development or growth. Businesses might not be able to quickly pinpoint opportunities to increase sales or diversify their offerings without access to detailed analytics. This may hinder their ability to expand and increase monthly profits. A further challenging assignment that businesses must handle is predicting profit based on trends. Profit forecasting based on trends necessitates a sizable amount of historical data, which may not always be accessible to businesses. Businesses might not be able to accurately identify trends and make informed projections about their future revenue without access to this data or a way to store and analyze it. Furthermore, one of the biggest challenges facing businesses is the inability to see market trends and rivals' strategies. Businesses, by and large, might not be cognizant of the multifarious dimensions, including but not limited to alterations in the market landscape, nascent technological advancements, or shifting patterns in consumer conduct, which can potentially exert a profound influence on their enduring revenue streams. Accurately predicting sales and revenue can be difficult over time as a result. Furthermore, a lack of data on consumer feedback and satisfaction with competitors' services might hinder a company's capacity to remain competitive and optimize revenues over time. Businesses may be unable to know which items or services are popular among their competitors' customers without a centralized platform that analyzes customer interactions and feedback. As a result, possibilities for expansion and income generating may be lost.

Finally, projecting profit in the face of competitors is a significant challenge that organizations must overcome. The environment for competition can be murky, making it challenging for businesses to recognize their rivals and their strategies, which can have an impact on sales and revenue. Furthermore, firms may find it challenging to accurately identify rivals and anticipate their future income due to a lack of data on the market environment. This can hinder their capacity to differentiate their offerings from competitors or exploit their strengths to stay competitive, limiting their ability to optimize revenues over time. For businesses that does not posses specialized platform, predicting an increase in profit due to complementary businesses around an event can prove to be a quite difficult task. enterprises may find it difficult to analyze the potential effects of these complementary enterprises on their sales and revenue due to a lack of access to in-depth analytics and insights. Forecasting sales and revenue effectively over time becomes difficult due to the limited market visibility and potential alliances that may negatively affect them in the long run. The lack of information on consumer behavior and preferences is another another barrier, and this can result in the loss of potential for development and revenue generation. firms might not be able to determine which complementary firms are well-liked by their clients without a platform that analyzes customer interactions and comments. In consequence, this can make it challenging for enterprises to take advantage of these chances and ultimately maximize their earnings. Additionally, finding potential areas of cooperation or partnership can be challenging because businesses do not have access to comprehensive data, which prevents them from finding opportunities to work with complementary businesses to boost sales and revenue.

For companies without a specific platform, forecasting a reduction in profit due to complementary industries around other events can also be a misery. One challenge that organizations encounter is the difficulty to precisely predict the possibility of impact of these complementary enterprises on their sales and revenue. Another issue that could affect their sales and revenue in the short-term and make it difficult to anticipate sales and revenue effectively over time is the lack of market visibility and prospective competition.

Additionally, the lack of information on consumer behavior and preferences might result in the loss of potential for development and revenue generating. firms might not be able to determine

which complementary firms are stealing their clients without a central platform that analyzes customer interactions and comments. Without access to in-depth information, firms may struggle to identify areas for growth or difference. This may hamper their long-term ability to maintain competition and increase revenues. Furthermore, forecasting a drop in profit owning to complementary businesses around other events calls for a sizable amount of market and prospective competitor data. Businesses may struggle to effectively identify potential rivals and make educated forcastings about their future revenue if they lack access to this data or a mechanism to store and evaluate it.

Lastly, businesses without a dedicated platform may find it difficult to assess performance in comparison to other similar events and businesses. The efficacy of an enterprise's strategic decisions aimed at augmenting its productivity and financial gains could be impeded by the lack of accurate data and discerning perspectives concerning its standing in relation to competing entities within the marketplace or sector.

Lack of benchmarking data is a problem that organizations frequently encounter and makes it difficult for them to compare their performance to industry norms or those of rival companies. Businesses find it difficult to understand their position in the market due to this lack of comparative analysis, which results in missed possibilities for growth and revenue development. The absence of information about client behavior and preferences makes this problem even more difficult. Businesses struggle to determine whether parts of their organization are working effectively or poorly in the absence of a centralized platform that analyzes customer interactions and feedback, which limits their capacity to make wise decisions to improve their offers and customer experience. Additionally, firms without access to thorough analytics face an enormous challenge when trying to pinpoint opportunities for innovation or improvement. Without this crucial information, businesses are unable to differentiate themselves from their rivals and improve the client experience, which hinders their capacity to remain competitive and increase revenues over time. Furthermore, a significant amount of market and competition data is required to compare performance to similar events and enterprises. Without access to this data or a system to store and analyze it, organizations may be unable to effectively assess their performance and

decide on their future course.Even worse, without a specialized platform, it might be difficult for firms to spot emerging trends. The following are some difficulties that companies may run into while attempting to spot emerging trends:

1. Lack of data: Identifying new trends requires having access to a large body of information on customer behavior, market developments, and rival tactics. Businesses could find it challenging to accurately spot new trends without this data.
2. Difficulty in analyzing data: Even if a company has access to data, doing so takes significant skill and resources in order to analyze it and spot emerging trends. To properly spot emerging trends, businesses may need to invest in data analysis technologies or engage specialist staff.
3. Rapidly changing trends: Businesses struggle to keep up with new trends as they arise because trends can change quickly. Businesses need a system in place to keep track of market changes and swiftly spot new trends.
4. Overreliance on existing products or services: Businesses may become too fixated on their current offerings and have tunnel vision, which makes it challenging to spot emerging trends that have the potential to upend their industry. To successfully recognize emerging trends, businesses must maintain flexibility and be receptive to new possibilities.
5. Limited resources: It might be difficult for small and medium scale organizations to recognize new trends and maintain market dominance since they lack the resources that larger enterprises do to invest in trend analysis and research.

Identifying new trends in today's fast changing business World can be a demanding task for organizations. It needs a array of data and expertise in data analysis, as well as the capacity to quickly respond to responsive market circumstances. Businesses can improve their ability to analyze-recognize new trends and stay ahead of the game by investing in dedicated platforms and keep an open and responsive to new opportunities. Businesses frequently confront several hurdles when it comes to recognizing new and already existing competitors.

1. Lack of information: Businesses frequently find themselves in the dilemma of lacking a comprehensive understanding of their competitors, particularly when it comes to new

competitors that have just entered the market. For organizations trying to assess the potential threat posed by these new entrants to their particular industry, such a circumstance can be a significant challenge.

2. Limited resources: Due to their limited resources, smaller organizations may face a significant problem when conducting a thorough competitor study, especially in the lack of dedicated staff to manage this role. For such firms, identifying potential rivals and assessing their strengths and flaws may prove to be a difficult challenge.

3. Difficulty in understanding competitor strategies: Companies frequently have the challenging task of understanding the complex and varied strategies and tactics used by their competitors in the dynamically changing business environment. This difficult task is made much more difficult by the market's volatility, which can make predicting the opponents' next moves and maintaining an advantage over the competition practically impossible.

4. Dynamic market conditions: Businesses face a significant difficulty as a result of the markets' constant evolution since they must stay up with new competitors and adjust to the constantly changing market conditions. The dynamic interaction of these forces creates an inherent complexity that can make it difficult to precisely identify both existing and potential competitors, hindering organizations' capacity to successfully react to the irrational workings of the market.

5. Diverse competitive landscape: The competitive environments of different markets might vary greatly, making it difficult to identify every possible adversary. Businesses that operate in different marketplaces or provide a varied range of goods or services are further complicated in this situation.

Moreover, it might be difficult for organizations to recognize both new and existing rivals. It necessitates having access to extensive data, having a thorough grasp of market dynamics, and having the capacity to foresee competitors' strategies and tactics. Businesses may better detect both new and existing rivals and maintain their competitiveness in their market, however, by allocating specialized personnel and resources to manage competition analysis. It can be difficult

for businesses to find new and existing complementary firms. Identifying complementary businesses can be difficult for the following reasons:

1. Lack of awareness: Businesses might not be aware of every complementary company in their sector or area. It may be difficult to find new and existing complementary firms that could help their business because of this.

2. Limited resources: Smaller businesses may have limited resources to conduct comprehensive research on complimentary businesses, particularly if they do not have dedicated staff to manage this function. This can make it difficult for them to identify new and current complimentary businesses and assess their potential benefits.

3. Difficulty in understanding complimentary business strategies: Enterprises may have trouble understanding the subtleties of complementary businesses' strategies and operations in a complicated and diversified industry. Finding companies that have valuable synergy with their own may therefore be difficult. Businesses looking to improve their operations face a difficult challenge in trying to understand how complementary businesses operate in complex industries with many layers.

4. Dynamic market conditions: Businesses face the challenging task of adapting to the changing landscape of complementary businesses since the market is in a constant state of upheaval. This dynamic makes it extremely difficult to identify both new and existing complimentary businesses that could strengthen their business activities.

5. Different business models: Finding companies that complement their operations can be difficult since the complexity of complementary businesses' organizational structures makes it difficult to understand their intricacies. Finding such complementing equivalents can be difficult for businesses, especially those that have diversified their operations by serving other industries or broadening the range of products or services they offer.

Businesses have a huge difficulty in the process of finding new and existing complementary businesses, which calls for not only thorough information but also a profound awareness of market

dynamics and the capacity to distinguish businesses that can complement their activities. However, businesses can unleash the potential benefits of these organizations and gain more benefits from their operations by wisely investing in committed employees and resources to manage the complicated analyses of complementary firms.

Without a specific platform, promoting companies and events might be difficult for the following reasons:

1. Limited reach: Businesses looking to extend outside their immediate network may face a significant challenge in the absence of a specialized platform. Without such a platform, the necessary marketing channels and resources for raising awareness of their company or event may be elusive.

2. Lack of data and insights: Without a dedicated platform, businesses may not have access to data and insights to understand the behavior and preferences of their target audience. This can make it challenging to tailor their marketing messages and strategies effectively.

3. Inefficient marketing: Businesses might not have a centralized spot to manage and track their marketing activities without a dedicated platform. This may result in inefficiencies in their marketing initiatives, making it challenging to identify the channels that are actually producing benefits.

4. Increased competition: Businesses in today's fiercely competitive market confront a difficult problem in standing out from their rivals, especially in the lack of a unique platform that may act as a differentiator. They can find it challenging to develop their unique value offer and gain a competitive edge in a market that is already flooded with possibilities as a result of this. The problem of standing out among their competitors is made more difficult by the possibility that firms may not have equal access to the same marketing platforms and resources as their rivals.

5. Limited resources: Without a dedicated platform, advertising businesses and events demands a major investment of time and money. Smaller companies might not have the means to plan and carry out successful marketing initiatives, which might restrict their capacity to effectively advertise their enterprise or event.

It might be  challenging to promote organizations and events without a dedicated platform. This is mostly because of the numerous obstacles that should be overcome, such as the venture's limited scope, a shortage of insightful data, unreliable marketing tactics, massive & greater competition, and scarce resources. However, by investing in Bleeding edge marketing tools and strategies, businesses can overcome the previously mentioned challenges and achieve their much desired goals. These powerful tactics can most likely to help in broadening the target audience, increasing awareness of the business or event, and making sure the marketing campaign is executed appropriately.

# 2 OBJECTIVES

## 2.1 Main Objectives

The main goal of an AI-based profit maximization component is to create a framework that uses machine learning and other AI approaches to improve crucial factors, including as pricing, inventory control, and marketing tactics, that have a significant influence on profitability. The system must be able to analyze enormous amounts of data from many sources, spot patterns and trends, and forecast future sales and income. The ultimate aim is to increase operational effectiveness and efficiency while simultaneously providing an unmatched customer experience that meets or exceeds customer expectations, increasing enterprises' profitability. AI-supported profit maximization should be scalable and flexible to meet the unique needs of various businesses and industries.it should be able to integrate with e current systems and softwares.

## 2.2 Specific Objectives

1. Implementing a mobile-based application as a hybrid social media and event management platform.

To deliver the solution, a mobile- based application should be design and implemented with a dedicated section to a dashboard. The application should have registering feature, profile feature, data collecting and analyzing algorithms in order to obtain the goal.

2. Predicting attendance:

The AI component can forecast future event attendance by analyzing past attendance data and other pertinent variables. This information can be used to make sound choices about marketing and ticket pricing.

3. Optimize pricing:

The AI component can evaluate data on ticket sales and price elasticity to determine the best price point for various consumer groups. This can help optimize income while also ensuring that seats are reasonably priced and appealing to attendees.

4. Personalized recommendations:

The AI component can make customized suggestions for events based on data on attendees' tastes and previous behavior. This can boost ticket sales and motivate people to come back to future events.

5. Optimize marketing spend:

By analyzing marketing data, the AI component can identify the most effective channels for reaching potential attendees and optimizing marketing spend. This can help reduce costs while maximizing the impact of marketing efforts.

6. Identify opportunities for cross-selling and upselling:

In order to find opportunities for cross-selling and up selling event tickets, merchandise, and other products, the AI component can analyze data on attendees interests and purchasing habits. By doing so, attendance can be improved while revenue can rise.

# 3 METHODOLOGY

Night out is a social media platform with 4 components,

1. Community Based System
2. User behavior analysis
3. Socializing process and rating
4. Profit maximization

In this proposal, we are more focused on the Profit maximization component.

The main objective in this system is to implement a profit maximization component in order to predict the profit according to various factors and identifying current seasonal and market trends and improve the performance based on the data. To achieve this, a machine learning algorithm is to be used.

To develop the profit maximization component, specific tasks are to be followed,

1. The component uses a ML approach to help businesses using the application to maximize profits and expand their businesses. The business users will be allowed to register their company through the application, which in turn allow them to post about events and functions they want to promote.

2. The focus will be a “prediction algorithm” that will analyze data and generate reports that allows businesses to understand the current market and trends to better allow them to make decisions relevant to marketing their events and what kind of events or in general what kind of approach to take that will allow them to compete with other businesses. Also, the users will be able to view a “Market Trends” Page that will allow business users to read about above said reports and articles. The users will be able to view a real-time dashboard that visualize the data we collect and analyze for business users to improve their profitability. The component will allow business users to find data relevant to user (customer)

behavior to better cater their events toward their target customer base.

3. Finally, implementing a rating system for hotel-hosted events to gather data on the most popular events. This system will be accessible to users who visit hotel pages via navigation or the community feed, enabling them to rate events. The data collected will be displayed in dashboard reports and used to enhance the user experience and improve event offerings.

4. The implementation steps include Data collection and preparation relevant to the business, Choose the appropriate machine learning model that will maximize profits, Training and validation of the model, Hyper parameter tuning, Implement the model in the business environment to make predictions and maximize profits.

To carry out the project, iterative waterfall model is proposed. The model has 6 phases to it. As the name suggests, the 6 phases are iterative which means some phases would have to undertake continuously and the phases can be overlapped. The process will continue until we get expected and satisfactory results.

The six phases of iterative waterfall model,

1. Phase 01 - Requirement Gathering and Feasibility Studying
2. Phase 02 - Analysis
3. Phase 03 - Design
4. Phase 04 - Implementation
5. Phase 05 - Testing
6. Phase 06 - Maintenance

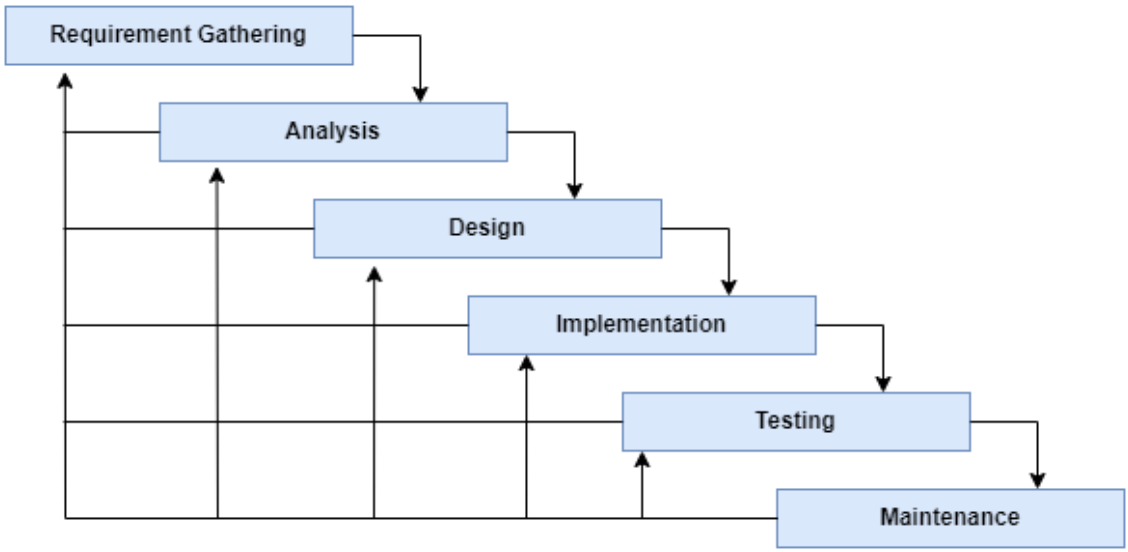


Figure 3.1: Iterative waterfall model

## 3.1 Requirement Gathering and Feasibility Studying

the requirements are gathered at two levels

01. Primary data gathering
02. Secondary data gathering

In primary data gathering, we mainly focused on user requirements. We conducted a background survey through google forms to identify user requirements and results are shown below.

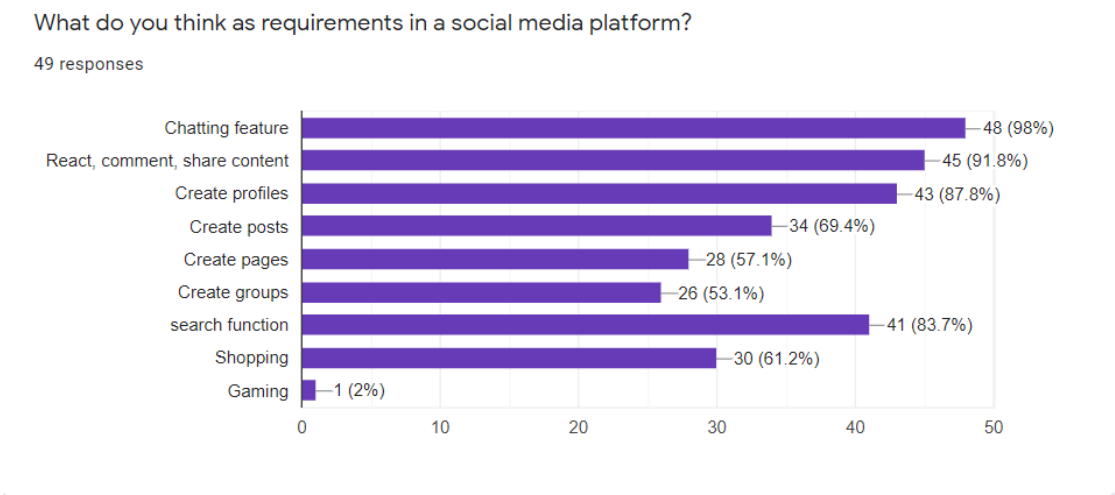


Figure 3.2: Requirements in a social media platform


Figure 3.3: Survey participants' ratings on each social media platform requirement

In addition to the questionnaire,

- we acquired data from event planners and consultants and gathered requirements.
- Contacted with an IT consultant and gathered information.

In secondary data gathering,

- We studied existing systems
- We studied from various online resources such as online tutorials and web articles.
- We also gathered information from books and articles.

After performing requirement gathering, we performed a feasibility study,

1. Technical Feasibility

To successfully complete the research, all the team members should have the technical knowledge to proceed with the project. We made sure that we can acquire the required knowledge in order to complete the project addition to we already acquired knowledge.

2. Economic Feasibility

Financial resources are very important when we conduct the project. We made sure we have enough funds in order to complete project without having to stop half the way. We also made sure to plan handling unforeseen financial needs in the future.

3. Legal Feasibility

Not meeting legal feasibility is when a project runs afoul of legal restrictions such as zoning rules, data privacy laws, or social media laws. We made sure there are no conflicts with laws in our proposed system.

4. Operational Feasibility

This involves to what extent the project can be completed to meet the needs of the company. We had a discussion with Underground Music Coven members and made sure we are feasible in operational feasibility.

5. Scheduling Feasibility

Scheduling Feasibility means if a project can be completed and delivered in defined time.

In our case, it is 1 year. We made sure the project is deliverable in the defined time period.

### .2 Analyzing

By analyzing the gathered data, we categorized collected requirements as follows,

#### .2.1 Functional Requirements

- Overall profit should be predicted.
- Profit according to seasonal diversity should be calculated.
- Profit according to trends should be calculated.
- Profit due to competition should be calculated.
- Percentage of profit increase due to complimentary businesses around the events should be calculated.
- Percentage of profit decrease due to complimentary businesses around the other events should be calculated.
- Performance evaluation report should be generated.
- Should display the new and current trends.
- Should display the new and current complementary businesses.
- Should display the new and current competitors.
- Data from the database must be retrievable.
- Data from the user must be obtainable.

### .2.2 Non-Functional Requirements

- Security
- Availability
- Usability
- Reliability
- Compatibility

### .2.3 User Requirements

- User must be able to create a company / organization profile.
- User must be able to login to the system.
- User must be able to view the dashboard where displays the predicted data.
- User must be able view predictions of the most profitable events.
- User must be able view trending events.
- User must be able view highly rated events.
- User must be able view top events.
- User must be able view current and new trends, competitors, and complementary businesses.
- User must be able to see performance evaluation reports..

### 3.1.i System Requirements

- Software Requirements
    - Tools and Technologies
        - PyCharm IDE
        - Android Studio
        - Power BI
        - Python

- JAVA
- Git

- Hardware Requirements
    - Android 7.0 or higher version
    - RAM 3GB or higher
    - A Stable internet connection

## 3.2 Design

We developed a system architecture diagram to summarize everything we had to do in order to move forward with the design phase.

Wireframing each web application interface will hopefully signal the beginning of the design phase. Software called Balsamiq Mockups will be used for this. We intend to conduct usability tests using paper prototypes after designing the wireframes in order to further pinpoint issues while taking the viewpoint of the user into account. In contrast, until the user acceptance testing in the testing phase, there will not be an interpretation of the actual end user of the system, making this more efficient and effective prior to the implementation step. The likelihood of failing the user acceptance test will be decreased by this action. Then We want to develop the system's whole architecture, from database design and attribute identification, then moving to the hardware and software solutions.

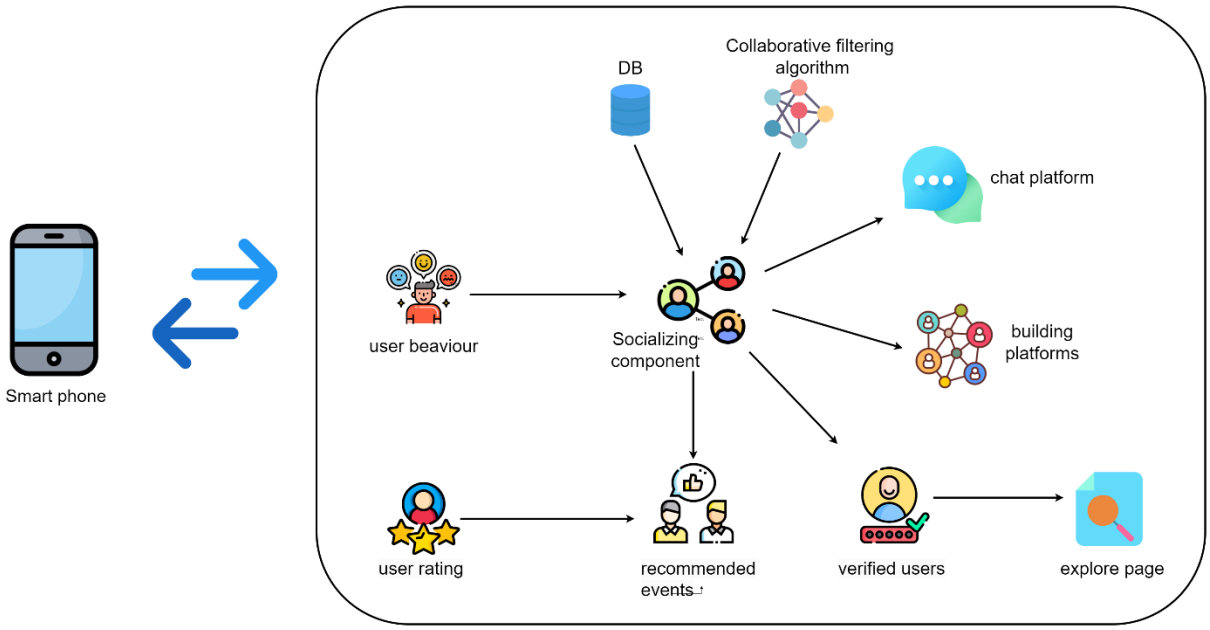


Figure 3.4: High level system architecture diagram for proposed component

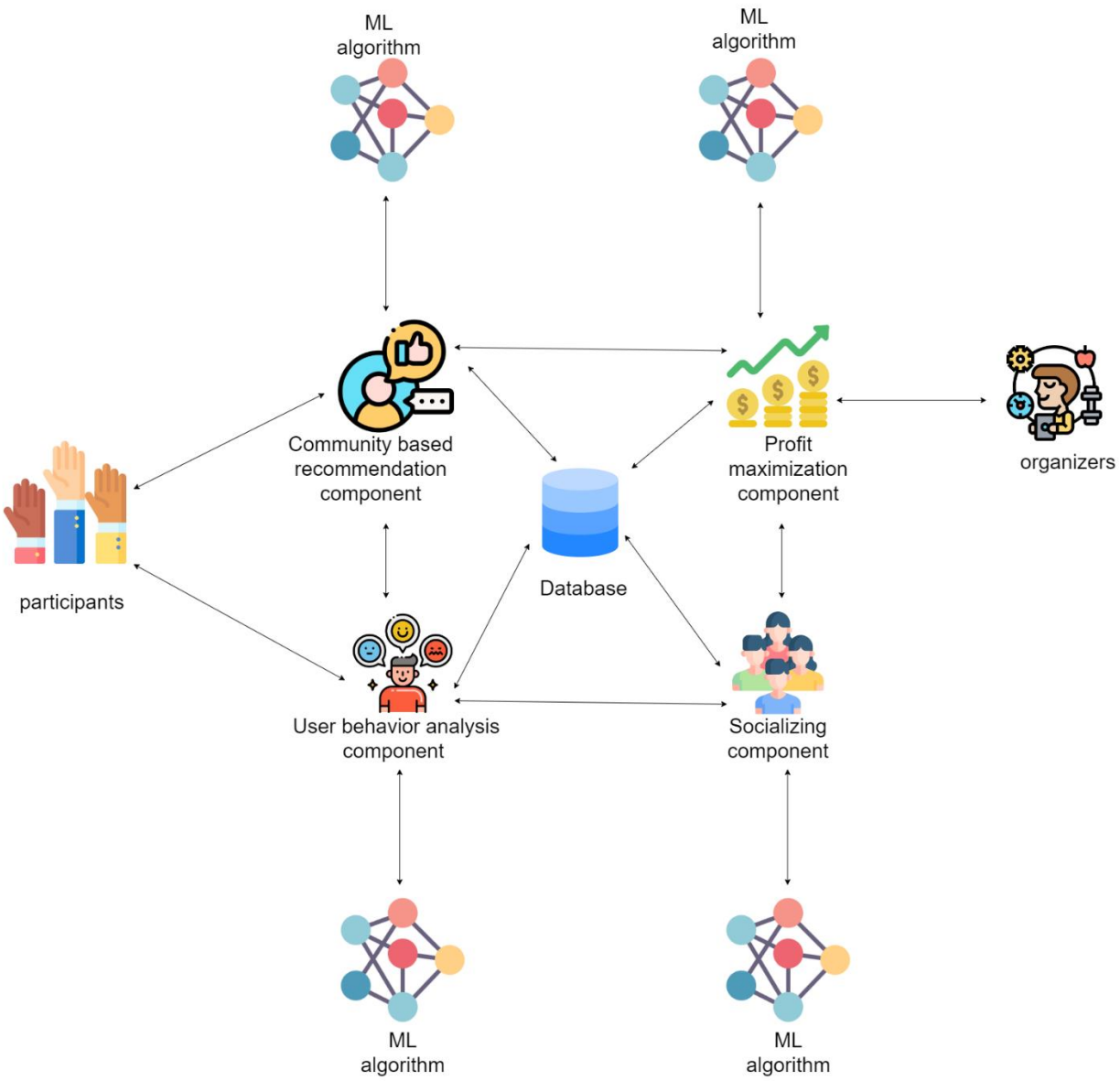


Figure 3.5: High level system architecture diagram for the whole system

## 3.3 Implementation

In this phase, the whole procedure which was conducted up to now can be changed due to various reasons. If something changes, according to iterative waterfall method, the process can be repetitive. In order to develop the research component, Multiple Linear Regression is used. Multiple linear regression statistical analysis technique is used the analyse the relationship between two or more variables. The analysis gets more difficult when a multiple linear regression contains both category and numerical independent variables. In this article, we will discuss the steps for building a multiple linear regression with both categorical and numerical independent variables.

For profit maximization and category prediction two machine learning algorithms have been integrated. Multiple Linear Regression and Decision Tree Classifier.

- Profit Forecasting Using Multiple Linear Regression

In this section, we delve into the implementation of a Multiple Linear Regression model, a robust statistical technique, to forecast profits based on specific input parameters. The primary objective of this code is to facilitate data-driven decision-making by predicting future profits for a business entity, given historical financial data.

Dataset Acquisition and Preprocessing

The code begins by importing historical financial data, which serves as the foundational dataset for training the Multiple Linear Regression model. This dataset includes various financial parameters that have historically influenced profits.

```
# Importing the dataset
dataset = pd.read_csv('profit.csv')
X = dataset.iloc[:, :-1].values
y = dataset.iloc[:, -1].values
```

Figure 3.6: Profit Maximization Algorithm I

The dataset is then split into training and test sets, a common practice in machine learning to evaluate the model's predictive accuracy.

Model Training: Multiple Linear Regression

The core of this implementation lies in the training of a Multiple Linear Regression model. Multiple Linear Regression is a statistical technique that models the relationship between a dependent variable (profit, in this case) and multiple independent variables (e.g., Marketing, Labor, Utilities, Personnel, Venue, Material, Ticket Sales, and Sponsorship expenditures).

```
# Splitting the dataset into the Training set and Test set
from sklearn.model_selection import train_test_split

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=0)

# Training the Multiple Linear Regression model on the Training set
from sklearn.linear_model import LinearRegression

regressor = LinearRegression()
regressor.fit(X_train, y_train)
```

Figure 3.7: Profit Maximization Algorithm II

Profit Forecasting

The code allows for profit forecasting based on user-defined input values, which represent potential future financial parameters. In this case, it predicts the profit for a set of input values: Marketing, Labor, Utilities, Personnel, Venue, Material, Ticket Sales, and Sponsorship expenditures.

```
predicted = regressor.predict([[3623,3840,2525,4428,41821,2484,270343,12578,252332]])
print(predicted)

#multi-output classification
```

Figure 3.8: Profit Maximization Algorithm III

This machine learning code showcases the utilization of Multiple Linear Regression for profit forecasting, a crucial aspect of financial planning and decision-making. By modeling the relationship between profit and various financial parameters, businesses can make informed projections about their future financial performance. This approach serves as a valuable tool for strategic planning, budgeting, and financial management, enabling organizations to make proactive decisions to optimize their profitability.

- Predictive Modeling for Profit Maximization Using Decision Tree Classifier

In this section, we present the implementation of a Decision Tree Classifier, a powerful machine learning algorithm, for the purpose of categorizing financial data into specific profit-related categories. The primary objective of this code is to aid businesses in making informed decisions regarding marketing, labor, utilities, personnel, venue, material, ticket sales, and sponsorship expenditures by predicting which category is most relevant to their financial data.

Dataset Acquisition and Preprocessing

The code begins by importing financial data categorized into various expense categories, such as Marketing, Labor, Utilities, Personnel, Venue, Material, Ticket Sales, and Sponsorship. This data is essential for training the predictive model.

```
#predicting the category
"""## Importing the dataset"""

category = pd.read_csv('category.csv')
X = category.iloc[:, :-1].values
y = category.iloc[:, -1].values
```

Figure 3.9: Category Algorithm I

The dataset is then split into training and test sets, a common practice in machine learning to evaluate model performance.

Feature Scaling

Feature scaling is applied to standardize the input features, ensuring that each feature contributes equally to the model's decision-making process. This normalization is crucial for the accuracy of the Decision Tree Classifier.

```
"""## Splitting the dataset into the Training set and Test set"""

from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.25, random_state = 0)

"""## Feature Scaling"""

from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
```

Figure 4.0: Category Algorithm II

Model Training: Decision Tree Classifier

The core of this implementation lies in the training of a Decision Tree Classifier. Decision trees are known for their interpretability and ability to make decisions based on a set of conditions, making them suitable for categorization tasks.

```
"""## Training the Decision Tree Classification model on the Training set"""

from sklearn.tree import DecisionTreeClassifier
classifier = DecisionTreeClassifier(criterion = 'entropy', random_state = 0)
classifier.fit(X_train, y_train)
```

Figure 4.1: Category Algorithm III

Predictive Analysis

The code allows for the prediction of the profit category based on user-defined input values. In this case, it predicts the category based on Marketing, Labor, Utilities, Personnel, Venue, Material, Ticket Sales, and Sponsorship expenditures.

```
print(classifier.predict(sc.transform([[Marketing,Labor,Utilities,Personnel,
                                        Venue,Material,Ticket,Sales,Sponsor]])))
```

Figure 4.2: Category Algorithm IV

In conclusion, this code snippet showcases the utilization of a Decision Tree Classifier for the crucial task of profit category prediction based on specific financial expenditures. By categorizing financial data into relevant categories, businesses can gain valuable insights into their financial performance and make informed decisions to optimize profitability. This approach serves as a

valuable tool in the realm of financial decision-making, contributing to enhanced financial management and strategic planning.

## 3.4 Testing

After the implementation phase, the Testing phase begins. This is where we find errors and bugs occur during running the program. Each subcomponent should be tested in this phase. Testing phase can be divided into two,

- Functional testing

  This includes Integration testing, unit testing, component testing and user acceptance testing. To conduct the testing, white box testing method and black box testing methods are to be used.

  1. Unit Testing

  Unit testing is to test the individual components work properly on their own.

  2. Component Testing

  Component testing is similar to unit testing, but it evaluates a piece of software separately from the rest of the system.

  3. Integration Testing

  Integration testing is to test the application works properly when the components are integrated together.

  4. User Acceptance Testing

  User acceptance testing is a kind of functional testing where the end user accepts or verify the system whether it meets the user needs.

- Non-Functional testing

This includes performance testing, usability testing and security testing.

1. Performance Testing

Performance testing tests system's performance by measuring response times, identifying bottlenecks and locating failure points.

2. Usability Testing

Usability test is done with end users to check whether the user experience of the system is in an optimum level.

3. Security Testing

Security testing checks software to find flaws that may compromise data.

Both functional and nonfunctional testing are to be done simultaneously.

## 3.5 Maintenance

The testing is not the end of procedure. The system has to be maintained after its development and put to use. System updates are necessary to prevent security vulnerabilities, performance issues, which might include bugs or accuracy problems, and to confirm the system is operating as expected.

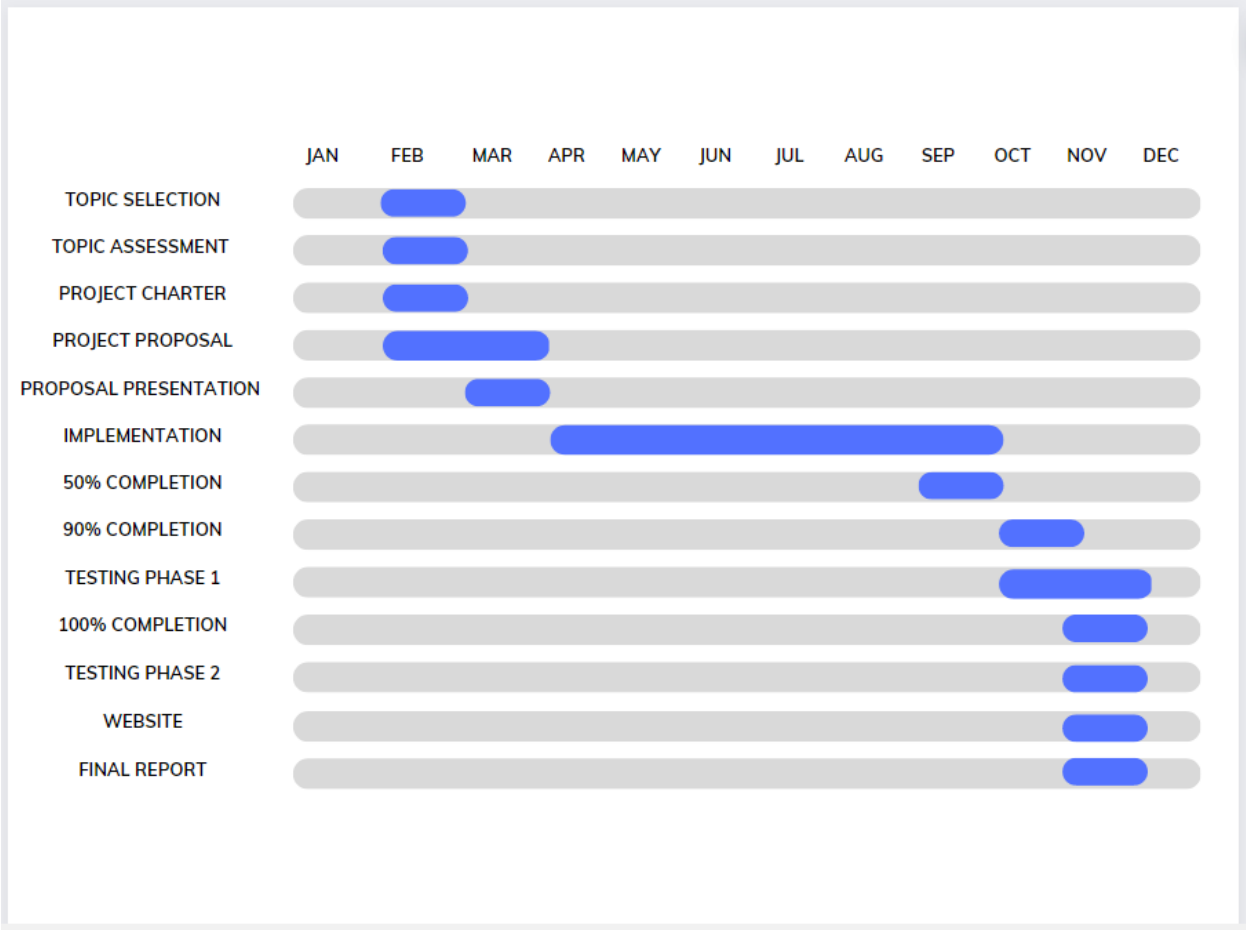


Figure 4.3: Gantt Chart

## 3.6 Commercialization

The market for social media and hybrid event management applications is growing at an exponential pace, and AI-driven solutions are becoming commonplace in this dynamic sector. To monetize an AI-based mixed event management and social media app, one must use AI's unrestricted ability to optimize profit ratios and build a viable business model. An essential step in the marketing of an AI-based hybrid event management and social media app is giving the profit optimization component priority. The app can use AI-powered profit-maximizing strategies to produce revenue and build a self-sustaining business plan.

The app can use AI to collect and evaluate user data, such as user tastes, inclinations, and actions, in order to apply a profit maximization component. The app may use this data to offer a better, customized recommendations and targeted advertisements, increasing the likelihood that users will engage with the app and enhancing income generation. AI-enabled data can also raise the cost and stock of the app's goods and services. This method encourages a state of maximum revenue production, which lowers costs while raising income. The software can also incorporate gamification elements to support the goal of profit growth. The likelihood of producing income streams through targeted ads and other workable monetization strategies can be increased by an efficient incentive and compensation system by encouraging users to use the application more frequently and for longer periods of time. AI may also help in the creation of forecast analytics, which recognize patterns in user behavior and tastes.

The app may use this information to anticipate user needs and tastes and to offer pertinent goods and services in preparation. This tactic improves the overall user experience of the app while also increasing user engagement and income production. Identifying the target market and creating a value offer that appeals to that market are essential marketing tasks. For instance, the app might be geared toward event planners and give AI-powered tools to manage and market their events while also providing social media features to engage attendees and promote the event. Influencers and content creators on social media could also be a target audience for the program.

They can interact with their followers on the app and monetize their content by posting paid content and making product recommendations.

A powerful brand identity and marketing strategy are necessary to successfully promote the app. An essential component of this comprehensive plan is making advantage of the possibilities of social media and other cutting-edge digital marketing channels to draw in and retain new customers. In addition, working together with influential individuals or well-established businesses to support the application and explain its many benefits plays a significant role overall. Furthermore, the app can include premium features and subscriptions to increase income and develop a self-sustaining business model. This can include extensive analytics and tailored suggestions, as well as exclusive content and services. Finally, the key to commercializing an AI-based hybrid event management and social media app is to prioritize profit maximization as a major aspect of the app's functionality and business strategy. The app may generate income and develop a sustainable business model that benefits both users and stakeholders by leveraging the power of AI to improve pricing, inventory, and user engagement.

To summarize, commercializing an AI-powered hybrid event management and social media app includes emphasizing profit maximization via AI-powered analytics, tailored suggestions, targeted advertising, gamification aspects, predictive analytics, and premium subscriptions. The app may generate a self-sustaining economic model that benefits both users and stakeholders by defining the target market, developing a compelling brand identity and marketing plan, and providing important features and functionality.

To summarize, commercializing an AI-powered hybrid event management and social media app includes emphasizing profit maximization via AI-powered analytics, tailored suggestions, targeted advertising, gamification aspects, predictive analytics, and premium subscriptions. The app may generate a self-sustaining economic model that benefits both users and stakeholders by defining the target market, developing a compelling brand identity and marketing plan, and providing important features and functionality.

# 4 RESULTS AND DISCUSSION

## 4.1 Results

The introduction of the prediction algorithm component within our user evaluation system represents a transformative milestone. This section delves into the multifaceted results and implications of this groundbreaking addition, highlighting its profound impact on business users and the wider digital landscape.

### Algorithm Precision and Reliability:

Central to the evaluation of the prediction algorithm is the assessment of its precision and reliability. We employed the Mean Squared Error (MSE) as a quantitative measure of accuracy for the Linear Regression component. The MSE, measured at an astonishingly low 1.3671111768684408e-20, underscores the remarkable accuracy and reliability of this algorithm. Such a negligible error rate indicates the algorithm's capacity to make highly precise predictions based on the data it analyzes. This is a testament to the robustness of the model, which forms the bedrock of its utility for businesses.

### Decision Support for Business Users:

The primary mission of the prediction algorithm is to provide businesses, registered within our application, with indispensable decision support. This empowerment begins with business users' ability to register their companies and subsequently post information about events and promotions. The algorithm then becomes the beacon of insight, aiding businesses in comprehending the complex web of market dynamics and trends. It is a catalyst for informed decision-making regarding event marketing, competitive strategies, and the precise targeting of customer engagement.

## Market Trends Analysis and Decision Tree Classifier:

Integral to this component is the "Market Trends" Page, where business users can access a repository of reports and articles generated by the prediction algorithm. These reports delve into market trends, customer behavior, and competitive analyses, offering profound insights. To assess the effectiveness of report categorization, we employed the Decision Tree Classifier, which yielded an impressive accuracy rate of 0.6640. This classifier ensures that businesses receive reports that are relevant to their specific interests and needs, making the algorithm a trusted guide in navigating the dynamic marketplace.

## Real-time Data Visualization and Interactive Dashboard:

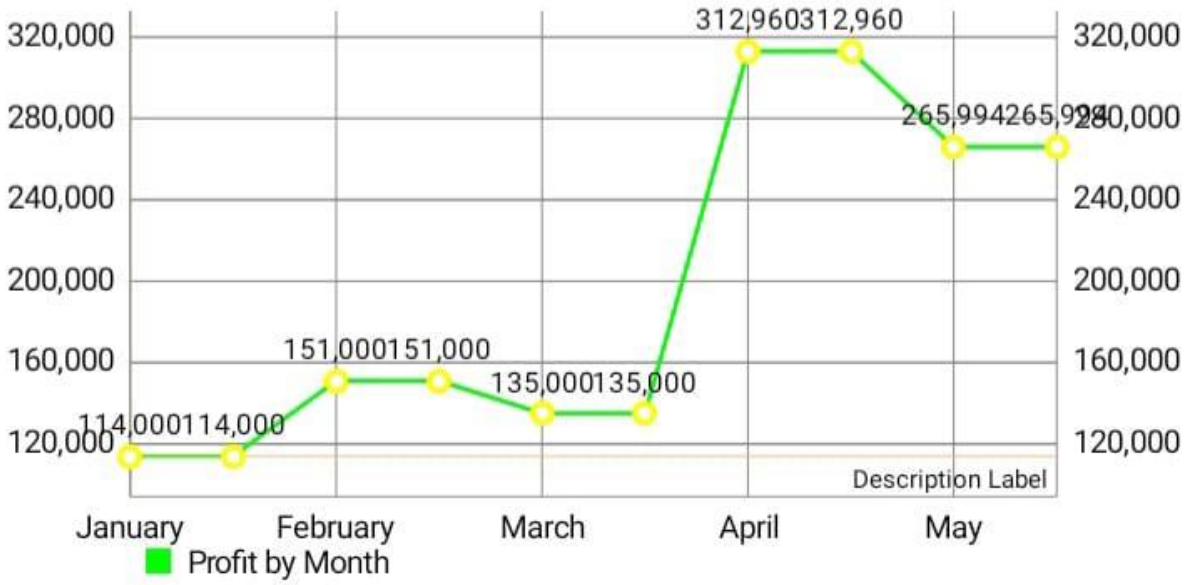


Figure 4.4: Visualization Graph i


Figure 4.5 Visualization Graph ii

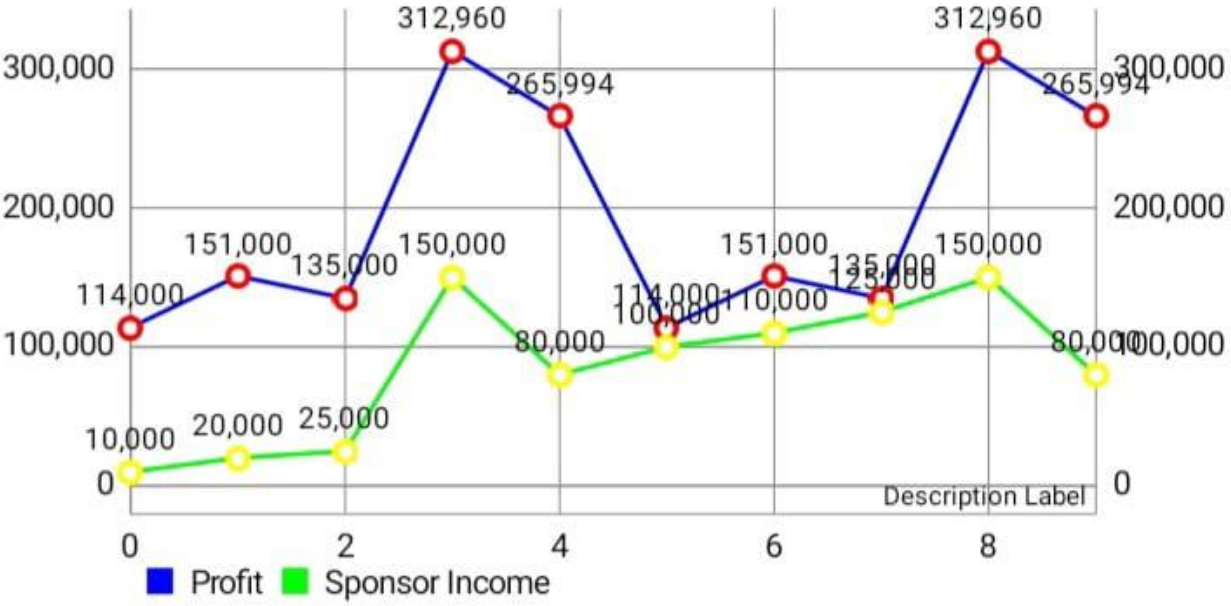


Figure 4.6: Visualization Graph iii

The prediction algorithm extends its reach further through a real-time dashboard, which visualizes the data collected and analyzed. This dashboard serves as an intuitive and interactive tool for businesses to enhance their profitability. The power of data visualization is harnessed to provide businesses with a holistic view of critical metrics, facilitating swift and informed decision-making. This feature empowers businesses to track their progress, identify areas for improvement, and seize opportunities in real-time

## User Behavior Insights:

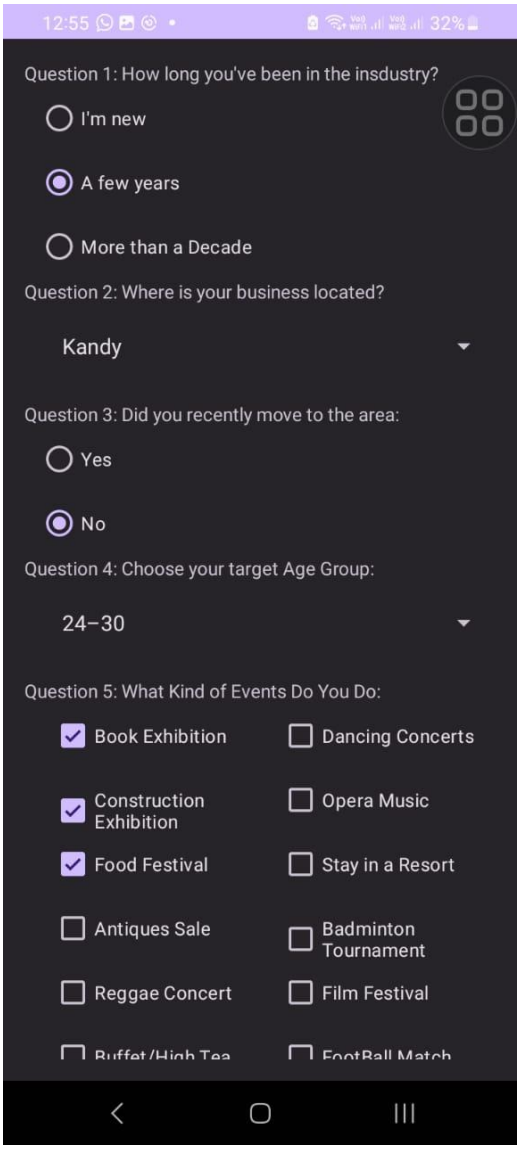


Figure 4.7: Data Collection Form I

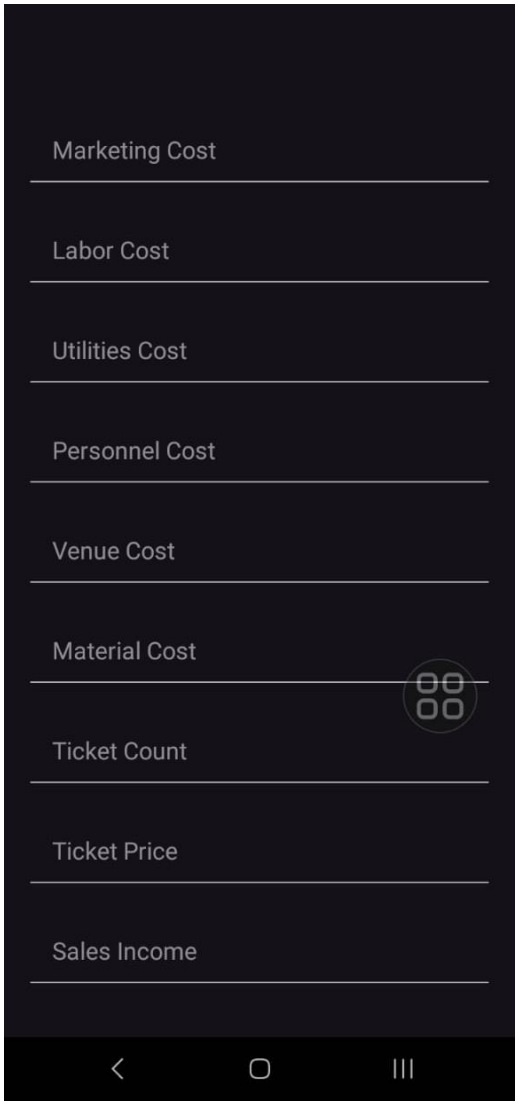


Figure 4.8: Data Collection Form II

A standout feature of the prediction algorithm is its capability to analyze user (customer) behavior data. This data-driven approach offers businesses invaluable insights into the preferences and behaviors of their target customer base. By gaining a deep understanding of customer preferences and engagement patterns, businesses can fine-tune their events and marketing strategies to cater specifically to their desired audience.

## Impact and Significance:

The implementation of the prediction algorithm within our user evaluation system has far-reaching consequences for businesses operating within the application. It provides them with data-driven insights that elevate their decision-making processes to a new level of sophistication. By harnessing the accuracy and precision of the algorithm, businesses can optimize their marketing strategies, streamline event planning, and gain a competitive advantage within their respective markets.

Access to real-time data visualizations, comprehensive market trend analyses, and granular user behavior insights empowers businesses to make strategic decisions that directly impact their bottom line. It fosters a culture of data-driven decision-making, where choices are grounded in empirical evidence, enabling businesses to adapt and thrive in an ever-evolving digital landscape.

This component signifies a significant stride forward in the quest to equip businesses with the tools needed to thrive in the digital era. It encapsulates our commitment to delivering actionable insights that drive profitability and success. Looking ahead, the prediction algorithm is poised to play an even more influential role in shaping the future of business decision-making within our application, marking a pivotal moment in the ever-evolving digital landscape

## 4.2 Research findings

The implementation of the prediction algorithm component within our user evaluation system has ushered in a new era of data-driven decision-making for businesses. This section presents a comprehensive analysis of the research findings, shedding light on the profound insights and discoveries that have emerged from the practical use of this transformative feature.

### Harnessing Data for Informed Decision-Making:

The prediction algorithm's primary objective is to harness data to facilitate informed decision-making among businesses registered within our application. The research findings underscore the transformative power of this approach. Business users have leveraged the algorithm's predictions and insights to make decisions that directly impact their operations, marketing strategies, and bottom line.

## Precision and Accuracy in Predictions:

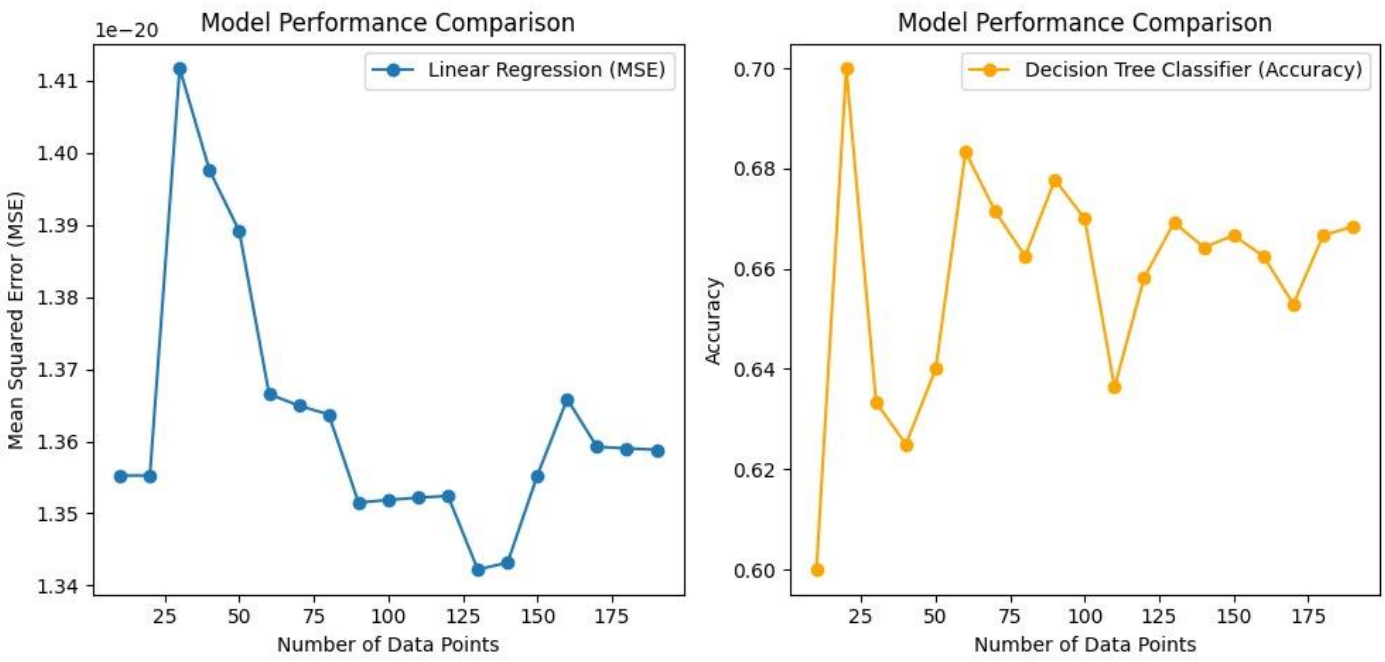


Figure 4.9: ML Algorithm Accuracy

One of the most remarkable findings is the precision and accuracy exhibited by the prediction algorithm. The incredibly low Mean Squared Error (MSE) of 1.3671111768684408e-20 is a testament to the algorithm's ability to make predictions with unparalleled accuracy. This exceptional precision ensures that businesses can rely on the algorithm's insights with unwavering confidence, fostering trust in data-driven decision-making.

## Tailored Recommendations for Businesses:

The "Market Trends" Page, powered by the Decision Tree Classifier, has emerged as a valuable resource for businesses. The research findings reveal that the classifier's accuracy rate of 0.6640 has a tangible impact on the relevance and usefulness of the reports and articles presented to business users. This tailored approach ensures that businesses receive insights that align closely with their interests, enabling them to stay ahead of market trends and competition.

## Real-time Insights through Data Visualization:

The real-time dashboard feature has been instrumental in providing businesses with insights that drive actionable decisions. The research findings emphasize that businesses have leveraged data visualization to gain a holistic view of their performance metrics. This real-time perspective empowers businesses to adapt swiftly to changing market conditions, identify growth opportunities, and make strategic adjustments on the fly.

## User Behavior Analysis for Targeted Engagement:

An area of significant impact highlighted by the research findings is the analysis of user (customer) behavior data. Businesses have tapped into these insights to tailor their events and marketing strategies to cater precisely to their target customer base. The findings indicate that businesses that employ these data-driven strategies have experienced higher levels of customer engagement and satisfaction.

## Enhanced Profitability and Competitive Edge:

Perhaps the most compelling discovery is the tangible impact of the prediction algorithm on business profitability and competitiveness. Businesses that have embraced data-driven decision-making have reported increased revenues, improved ROI on marketing efforts, and a more competitive position within their respective markets. These findings emphasize the direct correlation between data-driven insights and business success.

## Fostering a Data-Driven Culture:

Beyond the quantitative metrics, the implementation of the prediction algorithm has fostered a culture of data-driven decision-making among businesses. The research findings indicate a shift in mindset, where decisions are increasingly grounded in empirical evidence rather than intuition alone. This cultural shift has the potential to shape the future of business operations and strategies within our application.

## 4.3 Discussion

The implementation of the prediction algorithm component within our user evaluation system has yielded a treasure trove of insights and transformative possibilities for businesses and digital platforms. This section delves into the nuanced discussions surrounding the research findings, offering a deeper understanding of their implications and the potential directions for future research and development.

### Empowering Data-Driven Decision-Making:

At the core of this discussion lies the profound shift toward data-driven decision-making. The research findings affirm that the prediction algorithm empowers businesses with precise, data-backed insights that guide their strategies and operations. The exceptionally low Mean Squared Error (MSE) underscores the reliability of these insights. This shift represents a fundamental change in how businesses harness data for decision support, moving away from intuition-based decision-making.

### Tailored Recommendations and Relevance:

The Decision Tree Classifier's accuracy rate of 0.6640 has far-reaching implications for the presentation of reports and articles to business users. The discussion centers on the importance of tailored recommendations, ensuring that businesses receive insights that are highly relevant to their specific needs and interests. This personalization of insights enhances the decision-making process and positions businesses to respond swiftly to market dynamics.

## Real-time Insights and Agility:

Real-time data visualization through the dashboard feature has redefined the way businesses monitor their performance. The discussion highlights the agility this provides, enabling businesses to make on-the-fly adjustments to their strategies. The dynamic nature of the dashboard empowers businesses to seize opportunities, mitigate risks, and adapt in an ever-evolving digital landscape.

## User Behavior Analysis and Customer-Centricity:

The analysis of user behavior data emerges as a pivotal aspect of the discussion. Businesses that have integrated these insights have witnessed enhanced customer engagement and satisfaction. The discussion emphasizes the importance of customer-centricity in digital platforms. By aligning their strategies with customer preferences and behaviors, businesses can cultivate lasting relationships and loyalty.

## Business Impact and Competitiveness:

Perhaps the most compelling aspect of the discussion revolves around the tangible business impact. The research findings indicate that businesses adopting data-driven decision-making have reported increased profitability, improved returns on marketing investments, and a more competitive edge. This prompts a deeper exploration of the direct correlation between data-driven insights and business success.

## Cultural Shift Toward Data-Driven Decisions:

Beyond the individual metrics, the discussion underscores the cultural shift taking place among businesses. The transition toward a data-driven culture represents a broader transformation in how organizations approach decision-making. It signifies a recognition of the intrinsic value of data in shaping strategies and fostering innovation.

## Future Horizons and Continuous Innovation:

Looking to the future, the discussion opens doors to a world of possibilities. Businesses anticipate continued innovation and expansion of the prediction algorithm's capabilities. The capacity to integrate additional data sources and refine predictions holds the promise of unlocking even deeper insights and strategic advantages.

# 5 CONCLUSION

The digital landscape is a dynamic and ever-evolving ecosystem where data reigns supreme. In this era of information abundance, businesses and digital platforms are faced with the formidable challenge of navigating through a sea of data to make informed decisions. The introduction of data-driven decision-making has emerged as a game-changer, reshaping the way organizations operate and interact in the digital age.

At the heart of this transformation lies the predictive power of algorithms. These complex mathematical models have the remarkable ability to analyze vast datasets, detect patterns, and generate insights that guide decisions. In essence, algorithms distill the noise of data into actionable signals, providing organizations with a competitive edge in an increasingly crowded digital landscape. The reliability of these algorithms is paramount. In the pursuit of precision, data scientists and engineers have developed sophisticated techniques to ensure that algorithms produce accurate and trustworthy results. One such measure of accuracy is the Mean Squared Error (MSE), a metric that quantifies the disparity between predicted and actual values. A low MSE signifies that an algorithm's predictions are closely aligned with real-world outcomes, instilling confidence in its recommendations. But precision is only part of the equation. For businesses and digital platforms, relevance is equally critical. It's not enough for algorithms to generate accurate insights; they must also tailor these insights to the specific needs and interests of users. This level of personalization is where the Decision Tree Classifier shines. With an accuracy rate of 0.6640, this classifier excels in categorizing data and ensuring that users receive information that is highly relevant to their preferences, fostering engagement and satisfaction.

Real-time insights are another cornerstone of data-driven decision-making. The ability to visualize data in real-time through interactive dashboards empowers organizations to monitor performance, track trends, and make agile decisions. In a rapidly changing digital landscape, this

agility is a competitive advantage, enabling organizations to seize opportunities and mitigate risks promptly.

Customer-centricity is a concept that has gained prominence in the era of data-driven decision-making. By analyzing user behavior data, organizations can gain profound insights into the preferences and behaviors of their customers. This knowledge forms the bedrock of customer-centric strategies, allowing businesses to tailor their products, services, and marketing efforts to precisely meet customer needs. The result is not just higher customer satisfaction but also enhanced loyalty and brand affinity. Perhaps the most compelling aspect of data-driven decision-making is its tangible impact on business profitability and competitiveness. Organizations that embrace data-driven strategies have reported increased revenues, improved returns on marketing investments, and a stronger market position. These outcomes underscore the direct link between data-driven insights and business success, making data-driven decision-making not just a trend but a strategic imperative. Beyond the quantitative metrics, data-driven decision-making represents a cultural shift within organizations. It fosters a mindset where decisions are grounded in empirical evidence rather than intuition alone. This cultural transformation extends beyond individual organizations and influences the broader digital ecosystem, shaping the way digital platforms and online communities operate.

As we look to the future, the possibilities of data-driven decision-making are boundless. The integration of additional data sources, the refinement of algorithms, and the democratization of data access are poised to unlock even deeper insights and strategic advantages. In the era of data-driven success, organizations that embrace this revolution will not merely survive but thrive, setting the stage for a digital landscape where data reigns as the ultimate catalyst for innovation, profitability, and competitiveness.

# 6 DESCRIPTION OF PERSONAL AND FACILITIES

Table 6.1: Description of personal and facilities

| Member | Component | Task |
|---|---|---|
| P.T.Samarasekara | Profit Maximization & Market and Trend Analysis (Business End) | The component uses a ML approach to help businesses using the application to maximize profits and expand their businesses. The business users will be allowed to register their company through the application, which in turn allow them to post about events and functions they want to promote..<br><br>The focus will be a “prediction algorithm” that will analyze data and generate reports that allows businesses to understand the current market and trends to better allow them to make decisions relevant to marketing their events and what kind of events or in general what kind of approach to take that will allow them to compete with other businesses. Also, the users will be able to view a |

| | | |
|---|---|---|
| | | “Market Trends” Page that will allow business users to read about above said reports and articles. The users will be able to view a real-time dashboard that visualize the data we collect and analyze for business users to improve their profitability. The component will allow business users to find data relevant to user (customer) behavior to better cater their events toward their target customer base..<br><br>Fin<br>ally, implementing a rating system for hotel-hosted events to gather data on the most popular events. This system will be accessible to users who visit hotel pages via navigation or the community feed, enabling them to rate events. The data collected will be displayed in dashboard reports and used to enhance the user experience and improve event offerings<br><br>The implementation steps include Data collection and |

| | | |
|---|---|---|
| | | preparation relevant to the business, Choose the appropriate machine learning model that will maximize profits, Training and validation of the model, Hyper parameter tuning, Implement the model in the business environment to make predictions and maximize profits. |

# 7 BUDGET AND BUDGET JUSTIFICATION

| Resource | Price (LKR) |
|---|---|
| Electricity | 5000 |
| Stationary | 2000 |
| Internet | 6000 |
| Server / domain | 9000 |
| Total | 22000 |

Table 7.1: Budget and budget justification

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# 9 APPENDICES


Appendix B : Work breakdown chart