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**на тему: Розробка чат-орієнтованої SaaS-платформи для удосконалення
процесу прийняття бізнес-рішень**

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Анотація. Дипломна робота розглядає створення програмного сервісу, який допоможе підприємствам приймати кращі бізнес-рішення шляхом спрощення аналізу даних. Програмне забезпечення використовує штучний інтелект для швидкого отримання аналітичних висновків і полегшує аналіз даних за допомогою інтерфейсу, схожого на чат, що робить його зручним для користувачів без технічних навичок. Програмне забезпечення дозволяє підключатися до популярних інструментів, таких як Google Analytics та HubSpot, для збору та аналізу даних з різних джерел, з метою швидкого надання бізнесу, особливо малим і середнім підприємствам, необхідної інформації. Робота охоплює актуальність програмного забезпечення на ринку, його дизайн, потенційних конкурентів і ризики, демонструючи, як воно може змінити спосіб використання даних підприємствами для прийняття рішень.

Ключові слова: Програмне забезпечення як послуга, чат-бот програмне забезпечення, бізнес-аналітика, бізнес-рішення, штучний інтелект, аналіз даних, аналіз ринку, оцінка ризиків

Abstract. The diploma paper discusses creating a chat-based software service to help businesses make better decisions by simplifying how they analyze data. The software uses artificial intelligence to quickly offer insights and makes data analysis easier with a chat-like interface, making it user-friendly for those without tech skills. It connects with popular tools like Google Analytics and HubSpot to gather and analyze data from various sources, aiming to provide businesses,

especially small and medium-sized ones, with the information they need quickly. The paper covers the software's market need, design, potential competitors, and risks, showing how it could change the way businesses use data to make decisions.

Keywords: Software as a service, chat-based software, business intelligence, business decisions, artificial intelligence, data analysis, market analysis, risk assessment

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INTRODUCTION

This work started with two main ideas. First, we were amazed by how easy and insightful it was to chat with ChatGPT. It is like having a conversation that can give you a lot of smart answers. Second, when working with different business intelligence tools, we faced the challenge of normalizing our data and setting up basic reports. It was a lot harder than it could be, and even after all that effort, the reports, graphs, or data tables we got sometimes did not answer our questions. We had to keep changing data and configuration to meet the requirements of different people on the team.

One more insight is that we always try to find answers to particular questions when looking at charts or graphs. However, getting those answers usually meant we had to go through a lot of data and figure it out. We thought, "What if we could just ask the question in a chat and get the exact answer we are looking for?"

From there, the idea grew. What if we had a tool that could pull together data from different sources, let us ask specific questions in a chat, and get straight answers? This thesis is about building that kind of tool—a chat-based platform that can talk to different data sources with business data and use AI to help us make better business decisions by giving straight answers to our questions.

SECTION 1. PROBLEM

1.1 Why making informed business decisions is so hard

Thanks to modern technological advancements, businesses have access to a vast amount of data that can help them make informed business decisions.

According to the research at PwC (PricewaterhouseCoopers, n.d.), business success requires full and current visibility into the operational health and dynamics to enhance efficiency, reduce costs and risks, and anticipate market trends for new revenue and competitive edge. Data-driven organizations are three times more likely to see significant decision-making improvements. Leading companies leverage advanced data analytics, Artificial Intelligence, and Machine Learning to make strategic business decisions effectively.

However, despite the significant amount of available information, many companies rely on intuition and personal experience (Peek, 2024) rather than facts when making critical business decisions.

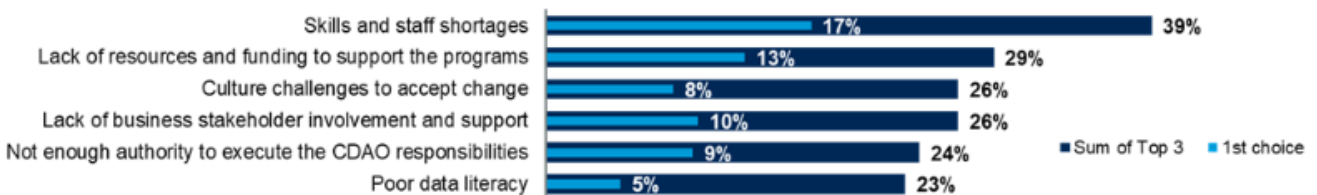
Effective leaders utilize data to make informed decisions and achieve significant outcomes for their organizations. The process of deriving insights from data is complex. Here are some challenges organizations face in transforming data into actionable intelligence:

1. **Data Volume.** The significant volume of data generated today makes it challenging to use it effectively. Over the next three years, more data will be created than in the past 30 years combined (Amazon et al. Services, 2022). Traditional on-premises data processing tools may need help to handle such volumes.
2. **Distributed Data Storage.** Organizations receive and store the data from various sources. Data often resides in different external systems. However, for more effective decision-making, organizations need to securely access,

consolidate, and analyze all types of data from a single source, regardless of its origin.

3. **Diverse Data Formats.** Organizations receive data from various sources, leading to different data formats, including voice recordings and video files. It complicates data exchange.
4. **Assurance Concerns.** Organizations must define, control, and manage access to specific data segments in a world of increasing data security, privacy, and compliance regulations.

Another study by Gartner (*Gartner Survey Reveals Less Than Half of Data and Analytics Teams EfFe*, n.d.) revealed another problem that was exposed inside the data analytics teams inside organizations. The team leaders reported that less than half of their teams efficiently provide value to their organization. The graph below shows the major roadblocks in such teams:



Source: Gartner (March 2023)

Figure 1.1 Top Roadblocks to the success of data analytics initiatives

In conclusion, data has a big potential to change businesses, but several issues like handling lots of different data and keeping it secure can prevent its full use. Even with these challenges, the benefits are clear, as top companies improve their decisions using advanced analytics, AI, and machine learning. Still, many organizations prefer using gut feelings over insights from data. To overcome these problems, businesses need new technology and a change in thinking towards

focusing more on data. This will help them fully use the power of data to get ahead in the market.

1.2 Small and Medium Enterprises Challenges

In our research, we decided to focus on small and medium enterprises (SMEs). Given their limited revenue, SMEs often need more money and staff to invest in non-essential new technologies like business intelligence (BI) systems. This is the main reason why BI adoption has been gradual among SMEs. BI case studies for SMEs (Raj et al., 2016) have highlighted that affordable cloud-based BI solutions are available, and implementing an effective BI system can provide SMEs with a competitive edge.

According to recent research, SMEs face additional challenges when adopting business intelligence (Alsibhawi et al., 2023). Below, we will highlight a few of them:

- 1) SMEs frequently need help understanding how to use BI tools to create strategies for growth. Additionally, the skill levels of their owners and managers are typically lower, which makes it difficult for these businesses to adopt and use BI tools effectively.
- 2) Small businesses usually face a lack of accurate, reliable, and relevant data.
- 3) Given their size, SMEs typically have fewer employees and smaller revenues, constraining their capacity to manage large data volumes and adopt comprehensive BI solutions.
- 4) Small and medium-sized businesses need help to assess BI systems' usefulness and ease of adoption due to their complexity and a need for more technical expertise.

In conclusion, small and medium-sized businesses could use business intelligence systems better, even though they offer competitive benefits. They face

challenges like limited money, insufficient technical knowledge, and poor data quality, making it hard for them to use BI technologies fully. The BI tools are also complex, and many businesses don't really understand how to use them strategically.

SECTION 2. SOLUTION

2.1 The Market Needs

As one of the first steps, we checked whether markets exist for our product. As such, business intelligence products have considerable potential nowadays. Below are the key insights from the recent market research (*Business Intelligence (BI) Market Insights*, n.d.):

- The Business Intelligence (BI) market is predicted to grow from \$33.34 billion in 2024 to \$61.86 billion in 2029, with an annual growth rate of 13.16%.
- The demand for BI has surged over the last decade due to the increase in big data and the urgent need for quick, significant business decisions. This trend is expected to continue with technological advancements and increased investments.
- BI is a tech-based process for analyzing data and delivering actionable information to help managers and executives make decisions. It encompasses various tools and software for gathering, analyzing, and visualizing data to aid operational staff and decision-makers.
- Using data visualization tools in BI to create dashboards and infographics, along with advanced analytics like predictive analysis, drives demand across industries by enabling deeper insights. Furthermore, the shift towards cloud-based solutions in the SME sector is boosting the BI market.
- However, the high costs of BI infrastructure and a need for more skilled professionals like data scientists and IT experts are hindering market growth.

The move towards self-service BI solutions is expected to mitigate these challenges.

- The COVID-19 pandemic affected consumer behavior and markets, slowing the growth of BI services due to global lockdowns. However, sectors like healthcare continued adopting BI systems, showing minimal impact from the pandemic. BI tools also helped companies maintain operations, boosting sales of BI solutions during the lockdown.

Business Intelligence (BI) Market

Market Size in USD Billion

CAGR 13.16%



Source : Mordor Intelligence



Study Period	2019 - 2029
Market Size (2024)	USD 33.34 Billion
Market Size (2029)	USD 61.86 Billion
CAGR (2024 - 2029)	13.16 %
Fastest Growing Market	Asia Pacific
Largest Market	North America
Major Players	

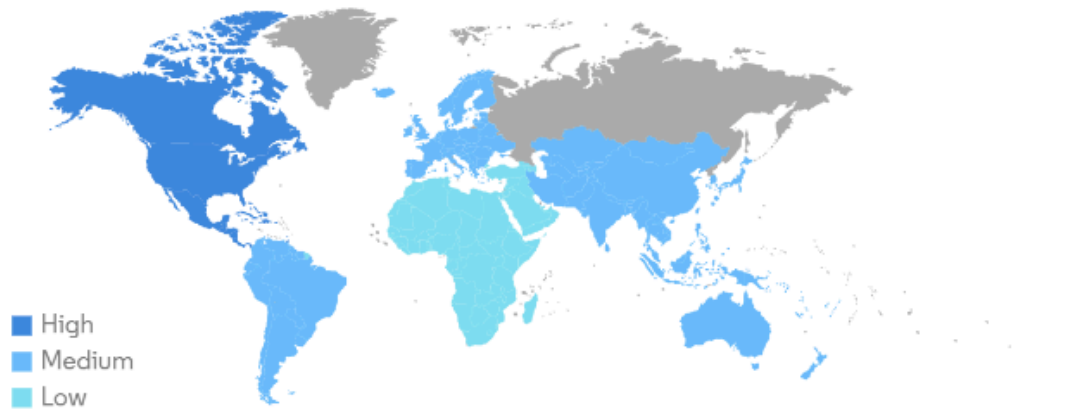


*Disclaimer: Major Players sorted in no particular order

Figure 2.1. Global Business Intelligence Market Analysis

The most significant markers are Asia Pacific and North America.

Business Intelligence (BI) Market - Growth Rate by Region



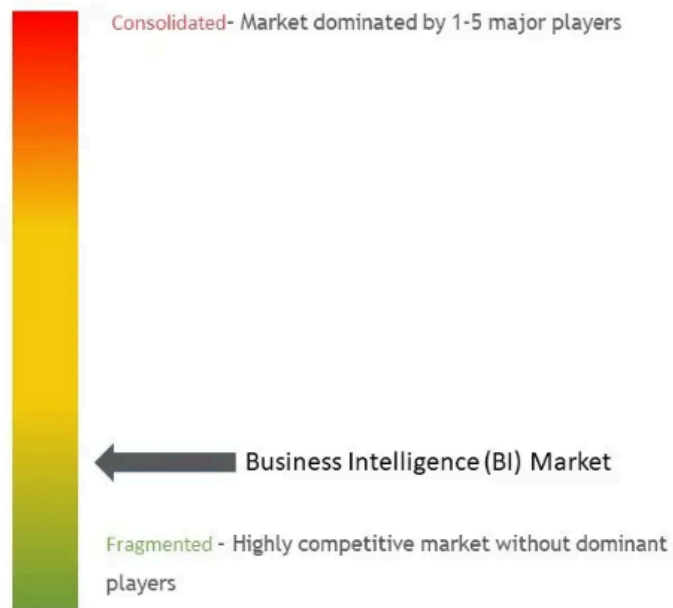
Source: Mordor Intelligence



Figure 2.2. Business Intelligence Growth Rate by Region

According to the same analytics, the market is quite fragmented and does not have the dominant players.

Market Concentration



Source: Mordor Intelligence



Figure 2.3. Business Intelligence Market Concentration

2.2 Business Model

As the first step in building the business model, we decided to visualize it and use the “business model canvas.”

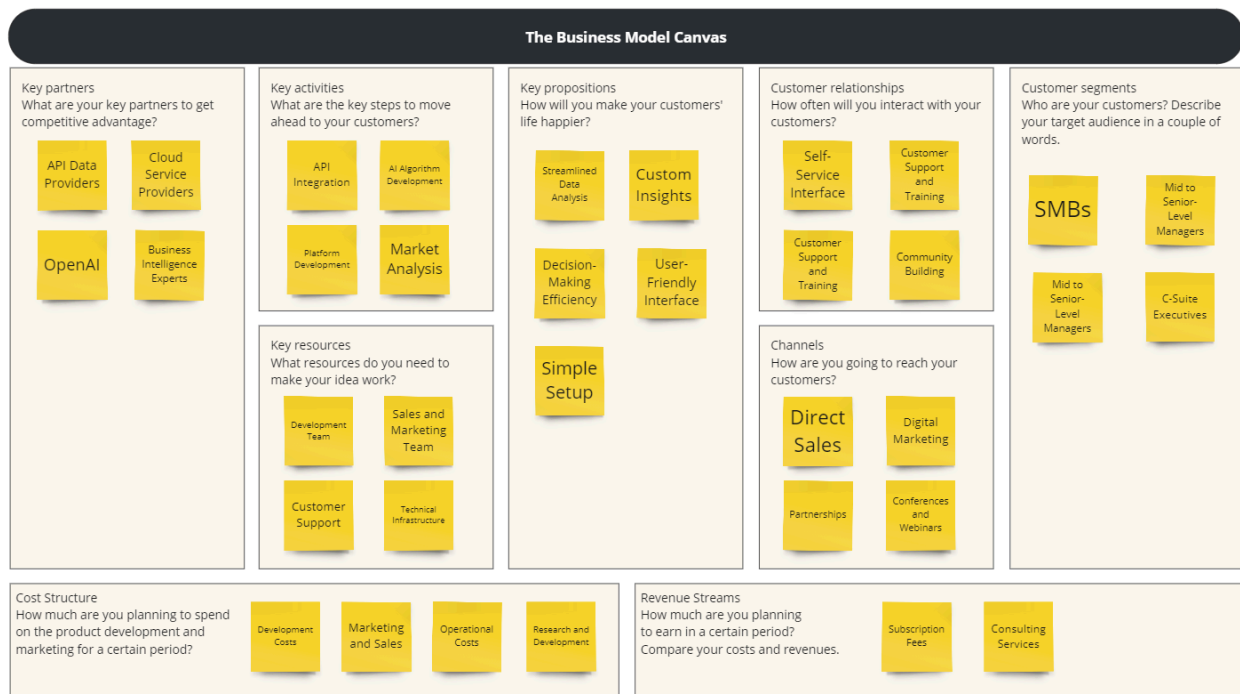


Figure 2.4. The Business Model Canvas

The “Key Partners” for our solution were identified as:

- API Data Providers. We must establish partnerships with companies that provide the diverse data sources the platform will analyze.
- Cloud Service Providers. The product is a SaaS web-based solution. We plan to partner with one (or multiple) cloud service providers like Amazon Web Services or Microsoft Azure.
- OpenAI. This is to leverage their AI algorithms in our data analysis processes.

- Business Intelligence Experts. This is for insights into market needs and validation of our analysis models. Also, we will need partners to help us with most API data providers, such as Google Analytics or HubSpot experts.

The “Key Activities” for our solution were identified as:

- API Integration. Developing and maintaining the integration of various APIs to fetch data.
- AI Algorithm Development. Customizing AI algorithms for data analysis that cater to business decision-making needs.
- Platform Development. Continuous development of the chat-based interface and backend processing capabilities.
- Market Analysis. Understanding the evolving needs of our target market and adapting the platform accordingly.

The “Key Resources” for our solution were identified as:

- Development Team. Skilled software developers and data scientists.
- Sales and Marketing Team. To promote the platform and acquire customers.
- Customer Support. Providing assistance and gathering feedback from users.
- Technical Infrastructure. Servers, databases, and other technology are needed to host and run our platform.

The “Value Propositions” for our solution were identified as follows:

- Streamlined Data Analysis. Making complex data analysis accessible via a simple chat interface.
- Custom Insights. Offering tailored business insights based on integrating diverse data sources.

- Decision-Making Efficiency. Enhancing decision-making with AI-driven insights and predictions.
- Easy to set up. The setup and configuration should be straightforward.
- User-Friendly Interface. Lowering the barrier to advanced data analysis with an intuitive chat interface.

The “Customer Relationships” for our solution were identified as:

- Self-Service Interface. Customers can independently use the platform with minimal assistance.
- Customer Support and Training. Providing detailed guides, webinars, and one-on-one support sessions.
- Community Building. Creating a user community for sharing best practices, insights, and feedback.

The “Sales Funnels” for our solution were identified as:

- Direct Sales. Our website includes live demos and free trials.
- Digital Marketing. SEO, content marketing, and social media to reach potential customers.
- Partnerships. With business consultants and IT service providers who can recommend our platform.
- Conferences and Webinars. For direct engagement with our target market.

The “Customer Segments” for our solution were identified as:

- Mid to senior-level managers involved in business intelligence, data analytics, IT, or operations.
- C-suite executives in small to medium-sized companies, particularly those in data-driven decision-making.

The “Cost Structure” for our solution was identified as follows:

- Development Costs. Initial and ongoing platform development.
- Marketing and Sales. Expenses related to acquiring and retaining customers.
- Operational Costs. Cloud hosting, API subscriptions, and customer support.
- Research and Development. Continuous improvement of AI algorithms and platform features.

The “Revenue Streams” for our solution were identified as:

- Subscription Fees. Monthly or yearly subscription plans are based on usage levels, features, or the number of users.
- Consulting Services. Offering expert analysis, custom integrations, or training as additional services.

2.3 Customer Profile

To identify the customer profile, we decided to use the “Value Proposition Canvas” shown below:

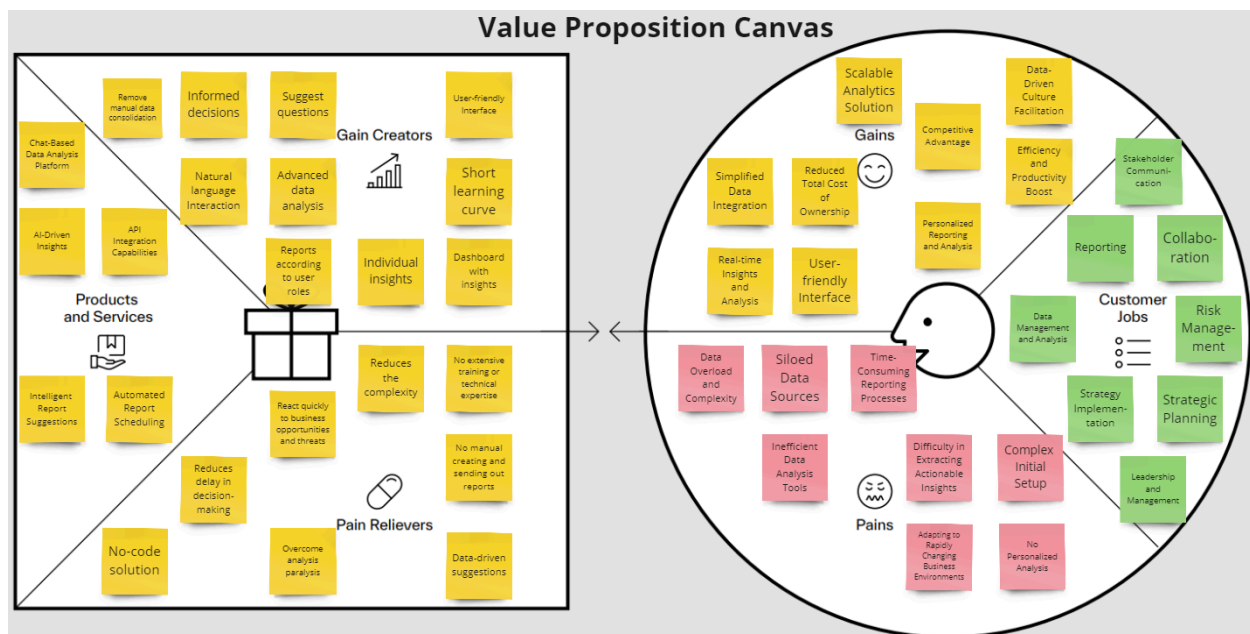


Figure 2.5. Value Proposition Canvas

We made the following assumptions about customer's day-to-day jobs:

1. **Data Management and Analysis.** Regularly interact with various data management tools and software to collect, clean, and analyze data. This involves extracting valuable insights from data sets to guide strategic decisions.
2. **Reporting.** Generating reports based on data analysis to present findings to senior management or stakeholders. These reports need to be accurate, insightful, and tailored to the specific audience's needs.
3. **Collaboration.** Working closely with different departments/teams to understand their data needs and ensure that the data analytics supports broader business objectives. This includes coordinating with IT for data integration and management.
4. **Strategy Implementation.** Translating data insights into actionable strategies. This might involve working on projects to improve operational efficiencies, enhance customer experiences, or drive sales growth.
5. **Tool Evaluation and Adoption.** Evaluating new tools and technologies that can enhance data analysis and reporting capabilities. They are always looking for more efficient, scalable solutions.
6. **Strategic Planning.** Setting long-term business goals based on market trends, competitive analysis, and internal performance metrics. Making decisions on investments, technology adoption, and strategic direction.
7. **Leadership and Management.** Overseeing the performance of various departments, ensuring that teams are aligned with the company's strategic objectives. This includes mentoring and developing senior management.

8. Stakeholder Communication. Communicating with external stakeholders, including investors, partners, and customers, to maintain strong relationships and present the company's vision and performance.
9. Risk Management. Identify potential risks to the business, whether financial, technological, or operational, and develop strategies to mitigate these risks.

Understanding these day-to-day responsibilities and assumptions helps us tailor our platform's features and marketing strategies to meet our target customers' needs better.

Then, we made the following assumptions about our customers' pains:

1. Data overload and Complexity. Customers often deal with the complexity of data generated from various sources. This data overload can make it challenging to extract meaningful insights without dedicating extensive time and resources to data processing and analysis.
2. Siloed Data Sources. Customers need help integrating data from different departments or platforms (like Google Analytics and HubSpot), leading to fragmented insights and a need for a holistic view of business performance.
3. Inefficient Data Analysis Tools. Many existing data analysis tools are too simplistic, lacking the depth required for meaningful insights, or too complex, requiring specialized knowledge to operate effectively. This gap creates a barrier for managers and executives who need quick, actionable insights.
4. Time-Consuming Reporting Processes. Generating reports from data analysis can be incredibly time-consuming, often involving manual work to compile data into a presentable format. This inefficiency delays decision-making and diverts resources from other critical tasks.

5. **Difficulty in Extracting Actionable Insights.** Even after analyzing the data, extracting actionable insights to guide strategic business decisions is a significant challenge. Customers need insights directly applicable to their business context, not just raw data or generic trends.
6. **Adapting to Rapidly Changing Business Environments.** In today's fast-paced business world, customers need to quickly adapt to changes in the market, customer behavior, and technology. Tools that need to be faster to integrate new data sources or adjust to new analytical methodologies can leave companies at a competitive disadvantage.
7. **Lack of Personalization in Analysis and Reporting.** Many data analysis tools offer a one-size-fits-all approach, with limited options for personalizing analysis and reports to meet specific business needs. Customers crave tools that can adapt to their unique requirements, providing insights most relevant to their business context.
8. **Complex and Time-Consuming Initial Setup and Configuration.** The initial setup and configuration of data analysis tools can be daunting for many small to medium-sized enterprises that may need more specialized IT resources. Customers are often faced with the complexity of integrating multiple data sources, setting up the correct parameters for analysis, and ensuring data security and compliance from the get-go. This complexity not only extends the time before the tool can be used effectively but also adds to the overall cost of implementation. Businesses seek solutions to minimize these initial hurdles, allowing for a smoother and faster transition to data-driven decision-making without requiring extensive IT intervention or specialized training.

The assumptions on our customer's gains (while using our product) are the following:

1. **Simplified Data Integration.** The platform can streamline data integration through efficient API connections from various sources, such as Google Analytics and HubSpot. This simplification helps businesses overcome the challenge of siloed data, providing a unified view of all relevant information in one place.
2. **Real-time Insights and Analysis.** By leveraging advanced AI algorithms, our product can analyze large volumes of data in real-time, offering immediate insights and recommendations. This capability enables users to make informed decisions quickly, adapting to market changes or operational needs without delay.
3. **User-friendly Interface.** The conversational interface of our platform makes complex data analysis accessible to non-experts. Users can obtain insights, generate reports, and ask data-related questions in natural language, significantly reducing the learning curve and enhancing user engagement.
4. **Personalized Reporting and Analysis.** Our application can tailor analysis and reporting to the specific needs and roles of different users within a company. This personalization ensures that insights are relevant and actionable, addressing each user's unique challenges and objectives.
5. **Efficiency and Productivity Boost.** Our platform can save businesses valuable time and resources by automating data collection, analysis, and reporting processes. This efficiency allows managers and executives to focus on strategic decisions rather than being bogged down by data management tasks.
6. **Competitive Advantage.** Access to real-time, AI-driven insights can provide businesses with a competitive edge. Companies can proactively adjust their

strategies by identifying trends, opportunities, and potential issues faster than competitors, enhancing their market position.

7. **Data-Driven Culture Facilitation.** Introducing an easy-to-use, conversational data analysis tool can help foster a data-driven culture within organizations. It encourages more employees to engage with data, democratizing access to insights and promoting informed decision-making across all company levels.
8. **Reduced Total Cost of Ownership.** By offering a comprehensive solution that addresses data integration, analysis, and reporting needs in one platform, our product can reduce the total cost of ownership compared to using multiple disparate tools. This cost-effectiveness is particularly appealing to small and medium-sized businesses with limited budgets.

2.4 Value Map

A value map is a visual tool used in value proposition design to ensure that the products or services a company offers meet the needs and wants of its customers. It's part of a larger framework often used to align a product's features with customer segments' pains and gains, ensuring that the product delivers value effectively. The value map consists of three main components:

1. **Products and Services.** This section will list the products and services our product offers.
2. **Pain Relievers.** This section will describe how our product and services alleviate specific customer pains.
3. **Gain Creators.** This section details how our products and services create gains for our customers, enhancing or adding value to their operations. It ties back to the gains we anticipate our platform will provide. By clearly articulating these gain creators, we will show the direct benefits customers will experience by using our product.

In general, creating a value map helps communicate how our solution is uniquely positioned to meet the needs of our target customer segment. It also serves as an internal guide to ensure product development and marketing strategies are closely aligned with customer needs, eventually leading to a more compelling value proposition.

2.4.1 Product and services

The following features will be the main components of the offerings:

1. **Chat-Based Data Analysis Platform.** The core offering is a conversational interface that allows users to query data, generate reports, and receive insights through natural language processing. This makes data analysis accessible and user-friendly.
2. **AI-Driven Insights.** Advanced AI and machine learning algorithms analyze data from integrated sources, providing predictive analytics, trend analysis, and actionable insights.
3. **API Integration Capabilities.** Tools and services that facilitate the easy integration of diverse data sources, such as Google Analytics, HubSpot, and other business intelligence tools, ensure a seamless data flow into the platform.
4. **Intelligent Question and Report Suggestions.** A dynamic feature that analyzes the data sources integrated by the user, such as HubSpot and Google Analytics, to suggest customized questions and reports. This tool uses the platform's AI capabilities to understand connected data sets' scope and potential intersections, offering users a guided analytics experience. It prompts users with insightful, contextually relevant questions they might not have considered, enabling them to uncover deeper insights and make informed decisions.

5. **Automated Report Scheduling and Distribution.** A functionality that allows users to automate the generation and delivery of specific reports based on their queries. For example, after a user queries about the "most commonly used website pages for last week" from Google Analytics data, the platform offers an option to schedule this report to be automatically updated and displayed on the dashboard and sent via email regularly (e.g., weekly).

2.4.2 Gain Creators

Simplified Data Integration automates and simplifies data integration from various sources like Google Analytics and HubSpot, eliminating the hassle of manual data consolidation and enabling a unified view of business performance.

Real-time Insights and Analysis utilizes AI algorithms to deliver real-time analysis and insights, empowering users to make informed decisions swiftly while staying ahead of market trends and operational needs.

User-friendly Interface offers a conversational interface that allows users to interact with data in natural language, making advanced data analysis accessible to non-experts and reducing the learning curve.

Personalized Reporting and Analysis enables the customization of dashboards and reports according to user roles and preferences, ensuring that the insights provided are relevant, actionable, and tailored to individual business needs.

Automated Report Scheduling and Distribution allows users to automate the generation and scheduling of specific reports, ensuring regular delivery of valuable insights via dashboard display or email, enhancing operational efficiency, and ensuring consistent awareness of key metrics.

Intelligent Question and Report Suggestions dynamically suggest questions and reports based on the user's integrated data sources, guiding them toward meaningful insights they might not have considered and maximizing the value derived from their data.

2.4.3 Pain Relievers

Simplified Data Integration eliminates the technical complexities and time-consuming efforts of integrating multiple data sources, offering a streamlined, no-code solution that brings all business data into one accessible platform.

Real-time Insights and Analysis addresses the delay in decision-making due to slow data processing by providing instant analysis and insights, enabling users to react promptly to business opportunities and threats.

User-friendly Interface reduces the intimidation and frustration of complex data analysis tools. The conversational interface allows users to interact with their data naturally without extensive training or technical expertise.

Personalized Reporting and Analysis tackles the issue of generic, one-size-fits-all reports that don't meet specific user needs. Customizable dashboards and reports ensure that insights directly apply to each user's role and business objectives.

Automated Report Scheduling and Distribution solves the problem of manually creating and sending out reports by automating both the generation and delivery of tailored reports, saving time and ensuring that crucial insights are regularly shared with all relevant stakeholders.

Intelligent Question and Report Suggestions overcome analysis paralysis and the uncertainty of what questions to ask or reports to generate by providing thoughtful, data-driven suggestions based on the user's integrated data sources.

2.5 Hypothesis

2.5.1 Customer hypothesis

Identifying potential customer groups for our product involves looking at various sectors and roles within organizations where data-driven decision-making is crucial. Given the platform's capabilities, several below customer segments have emerged as particularly relevant:

- Mid to senior-level managers in various departments of small to medium-sized enterprises
- C-suite executives
- Startups
- Consulting firms

For the “Mid to Senior-Level Managers in Various Departments” segment, the following roles could be potentially interested in our product:

- Business Intelligence (BI) and Data Analytics Managers - professionals who need to aggregate, analyze, and derive insights from data across multiple sources.
- IT managers that are responsible for implementing and managing technology solutions within their organizations.
- Operations Managers who are looking to optimize operational efficiency through data-driven insights.
- Marketing Managers - professionals who rely on data from platforms like Google Analytics and HubSpot to tailor marketing strategies and assess their effectiveness.
- Sales Managers - individuals who must analyze sales data and forecasts to drive revenue growth.

For the “C-Suite Executives” segment, the following roles could be potentially interested in our product:

- CTOs and CIOs - leaders overseeing their companies' technological and informational frameworks always look for innovative solutions to enhance data accessibility and decision-making.
- CEOs - top executives who make strategic decisions based on comprehensive business intelligence.
- CFOs - Financial leaders are interested in financial analytics, forecasting, and investment ROI derived from integrated data analysis.

The product could be interesting for tech startups, especially those looking for scalable, efficient ways to integrate and analyze data from various sources to drive growth.

Data consultants and analysts in the consulting firms who provide advisory services to businesses could use the platform to enhance their analysis and reporting capabilities.

2.5.2 Problem hypothesis

We tried to define the problems our potential users face during everyday work, and they are:

- Business analysts and IT managers need help with the cumbersome and technical process required to integrate data from diverse sources like CRM, ERP, and social media platforms, leading to delays and potential errors in data aggregation.

- Marketing managers and sales directors need help in quickly accessing and understanding data insights due to the complex interfaces of traditional analytics tools, which hinder their ability to make prompt, informed decisions.
- Operations managers, CEOs, or other C-level executives need help with one-size-fits-all reports that address their unique operational goals or strategic focus areas, resulting in efficient decision-making processes.
- Financial analysts waste valuable time compiling and analyzing data manually for reports and forecasts, diverting resources from strategic activities and decision-making.
- Product managers and customer service leaders face delays because complex data analyses by other teams, like data science, take too long. This reduces their ability to make quick, data-informed decisions about product features or customer service strategies.

2.5.3 Solution hypothesis

We tried to prepare the user stories on how the solution could be like and came up with the following:

- As a business analyst, I want to quickly connect data from multiple sources (like CRM, ERP, and social media metrics) without needing extensive technical support to gather comprehensive insights for my analysis promptly.
- As an IT manager, I must integrate various data sources into a single platform with minimal coding, ensuring data consistency and reliability for organizational analysis.
- As a marketing manager, I want to ask the platform simple questions about our latest campaign's performance and receive instant, understandable

insights, enabling me to make swift adjustments without deep diving into analytics tools.

- As a sales manager, I need to access real-time sales data through natural language queries while on the go, enabling me to make informed decisions during meetings or when away from my desk.
- As a CEO, I need insights that compare our performance against key benchmarks and competitors tailored to the strategic focus areas of the business, helping me steer the company in the right direction.

2.6 Validation

One of the crucial steps of our project was idea validation. We decided to run it through the group of steps. The first step was the idea validation for the series of interviews with managers and business owners. The goal was to understand whether the product could be interesting for the market and whether it's worth moving forward with further market analysis and MVP development. We decided to group questions to:

- Understand current situation
- Assess people's and companies needs
- Evaluate the hypothesis - describe our product ideas and hear the feedback
- Get some insights and feedback

We used the following set of questions (divided by groups).

1. Understanding the Current Situation

Role and Decision-Making:

- Can you describe our role and responsibilities within the company?
- How do you currently make data-driven decisions?

Pain Points and Challenges:

- What challenges do you face when analyzing business data?
- Can you share an example of how data overload or scattered data sources impacted our decision-making?

Current Tools and Solutions:

- What tools or solutions are you currently using for data analysis and business intelligence?
- What do you like and dislike about our current data analysis tools?

2. Assessing Needs and Preferences

Desired Features and Functionalities:

- What features or functionalities do you wish our current tools had?
- How would a chat-based interface for interacting with business data benefit you?

Integration and Data Sources:

- Which data sources are most crucial for our business analysis?
- How do you handle the integration of different data sources? Are there any challenges?

Reporting and Insights:

- What type of reports or insights are most valuable to you?
- How vital is customizability in the reports you generate?

3. Evaluating the Proposed Solution

Initial Reaction:

- How would you react to a platform integrating diverse API data sources and leveraging AI algorithms through a chat-based interface for enhanced decision-making?
- Can you see how this platform fits into our current workflow? Why or why not?

Value Proposition:

- What key features must this platform be considered valuable to our organization?
- Which of these features would have the most significant impact on our decision-making process?

Willingness to Adopt:

- Under what conditions would you consider adopting this new platform?
- What are our concerns or hesitations about switching to a new data analysis tool?

4. Additional Insights

Feedback and Suggestions:

- Do you have any suggestions or features you'd like to see on such a platform?
- Would you participate in a pilot program to test the platform?

Referrals and Networking:

- Do you know other professionals who might be interested in this platform?
- Please recommend forums, groups, or networks where we could share this concept for further feedback.

5. Closing the Interview

Final Thoughts:

- Is there anything we still need to cover that is important for us to know?

- May we contact you for follow-up questions or updates about our progress?

Overall, we had a chance to interview twelve people, mostly owners of small businesses. Nine people were Ukrainian businesses. Two executives were from the USA (CEO and Vice President of IT). One C-Suite executive (CIO) from an Israel company. As a result, we gained the following insights:

- 1) There is a strong interest in leveraging AI for data analysis, especially for predictive analytics and generating actionable insights. Business owners appreciate the potential of AI to transform raw data into strategic decisions.
- 2) Executives need customizable dashboards highlighting key metrics relevant to their business goals. They desire flexibility in presenting data, emphasizing ease of use and accessibility.
- 3) A common challenge mentioned is the difficulty in integrating data from various sources. Businesses use a mix of platforms (e.g., sales, marketing, operations), and a solution that seamlessly integrates these data sources is highly sought after.
- 4) There's a strong preference for real-time data analysis capabilities. Executives want to monitor their business performance in real-time to make timely decisions rather than relying on outdated reports.
- 5) Data security is a critical concern, especially when discussing integrating various data sources and using AI. Business owners are cautious about platforms that handle sensitive business data and seek assurances about data protection measures.
- 6) While there's enthusiasm for advanced features, there's also a clear preference for simplicity in design and usability. Tools that are too complex or have a steep learning curve are less likely to be adopted.

- 7) Business owners are willing to invest in solutions that offer clear value, such as time savings, more accurate decision-making, or increased revenue. However, they prefer transparent pricing models that align with the value provided.
- 8) Before committing, business owners want evidence of success, such as case studies or the opportunity to participate in a pilot program. They seek proof that the solution can deliver on its promises.
- 9) The availability of training and ongoing support is critical in the decision-making process. Business owners acknowledge the potential learning curve and want assurance that help will be available.
- 10) One more insight during the interviews is that businesses use one common tool - Google Analytics. That made us think of integration with Google Analytics as the first integration.

These insights highlight a strong market interest in a chat-based SaaS platform for data analysis, particularly one that leverages AI, offers seamless integration, and prioritizes data security and usability. The feedback points towards the need for a solution that balances advanced capabilities with ease of use, accompanied by robust support and clear evidence of value.

2.7 Competitors Analysis

To effectively compare our solution, we decided to build the [Competitive Product Matrix](#) introduced in the Product Management module by Scott Sehlhorst. The first step was to define our primary competitors. At the moment, they are:

1. ThoughtSpot (*ThoughtSpot | the AI-Powered Analytics Platform*, 2024). ThoughtSpot is a good example in business intelligence

because it lets you use simple language to analyze data. This matches well with our project's aim to make data analysis easier through a chat-based software service. ThoughtSpot shows that there's a demand for easy-to-use data search tools, which helps us move forward with our plan to create a chat interface that understands everyday language and uses AI to provide tailored insights.

2. Tableau (*AI + Analytics* | *Tableau*, n.d.). Tableau is well-known for its strong data visualization and exploration features, setting a high bar in business intelligence and analytics. It turns complicated data sets into interactive and attractive dashboards, making it a favorite among data analysts and business experts. This focus on easy data interaction and visualization is especially important for our project, as we aim to make business data analysis easier to understand and use through a chat-based software service. Tableau's latest product, Tableau AI, makes it simpler for users to work with data and navigate through it.
3. Microsoft Power BI (*Power BI - Data Visualization* | *Microsoft Power Platform*, n.d.). Microsoft Power BI is a complete solution for business intelligence and analytics, providing strong connections to many data sources, powerful data processing, and a wide range of visualization options. Its easy integration with Microsoft's ecosystem, like Excel and Azure, offers a smooth data analysis experience, which is particularly appealing to businesses that already use Microsoft's products. This ability to integrate well and serve both technical and non-technical users highlights its versatility and ease of use, which are important for more people to start using BI tools.

In the comparison table, we tried to evaluate the few major problems we are trying to solve in our product:

1. Complicated Configuration. Setting up the connection to data and configuring reports usually requires an IT expert (or even a group of experts).
2. Need for a Domain Expert. You need a domain expert to "understand" the data connected to the previous step. For example, if you have some data source with marketing data, you usually need a person to explain the data. Only after that should you be able to configure the reports.
3. "One-Size-Fits-All" Reports. The report that fits the needs of one person or role can be completely unusable (worthless) for another person or role.
4. Complicated to Interact. When you start to interact with BI software of reports, it usually a) takes some time to understand what you have and where it is located and b) graphics, charts, tables, etc, still need some "translation" analysis after you see the specific report. Usually, you need to jump from one report to another.
5. Insights. Users need to get advice or insights to see the raw data; you can't benchmark your results with other companies on the market.

When evaluating the current state and possible future changes, we used the 5-grade rating where:

- 5 is a great solution
- 4 is a really good
- 3 is a good one
- 2 is an adequate solution
- 1 is the marginal solution

We did a comparison against the following segments of our potential customers:

- Small and medium business C-Suite executives
- Small and medium business mid to senior-level Managers
- Startups

Below, you will find the explanation of our ratings with some analysis we did:

- **Complicated Configuration.** Tableau and Power BI can require significant setup time and expertise, making them less accessible to users without IT backgrounds. ThoughtSpot, with its search-driven analytics, simplifies this process, offering a more straightforward setup. Our solution aims to eliminate complex configurations through AI-driven setup and integration, thus receiving the highest rating.
- **Need for Domain Experts.** Traditional BI tools often necessitate domain expertise to make sense of the data and configure reports accordingly. ThoughtSpot reduces this need by allowing natural language queries. Still, our solution proposes to further simplify this process by using AI to interpret data context and relevance, minimizing the dependency on domain experts.
- **"One-Size-Fits-All" Reports.** While highly customizable, Tableau and Power BI often start from a template-driven approach that may not suit everyone's needs without significant adjustments. ThoughtSpot offers more flexibility with its search-based reports. Still, our solution is designed to provide fully personalized reports based on user roles and preferences, addressing the "one-size-fits-all" issue directly.
- **Complicated to Interact.** Interacting with BI tools can be daunting for non-technical users due to the complexity of navigating through data,

reports, and dashboards. ThoughtSpot simplifies interaction through its search functionality. However, our solution is rated higher because it proposes a conversational AI interface, making interaction as simple as chatting, significantly reducing the learning curve.

- No Insights. Tableau and Power BI provide robust data visualization tools that can surface insights implicitly through exploration but may not directly offer actionable insights or benchmarks. ThoughtSpot improves on this with its AI-driven search that can uncover insights more explicitly. Our solution, however, aims to provide insights, contextual advice, and benchmarks against industry standards, offering direct, actionable intelligence.

The [competitive product matrix](#) is below:

Competitive Product Matrix												
	120	110	105									Us (future)
	111	101	99					Microsoft Power BI		ThoughtSpot		
	86	78	76					Tableau				
	76	70	66									
Importance of each problem to each customer	C-Suite Executives (SMB)	Mid to Senior-Level Managers (SMB)	Startups	Problems	Us (right now)	Now	Future	Now	Future	Now	Future	
	4	4	3	Complicated Configuration	3	3	4	3	4	3	4	5
	5	5	3	Need for a Domain Experts	4	3	3	3	3	3	4	5
	5	5	5	"One-Size-Fits-All" Reports	4	2	3	2	4	4	5	5
	5	5	5	Complicated to Interact	4	2	3	3	3	4	5	5
	5	3	5	No Insights	3	2	3	2	4	3	5	5
Importance of customer to our strategy	5	4	3									
858	380	280	198	Tableau	(future)							
970	430	312	228	Microsoft Power BI	(future)							
1256	555	404	297	ThoughtSpot	(future)							
1355	600	440	315	Us	(future)							

Figure 2.6 Competitive Product Matrix

2.8 Market Positioning

We were thinking of a statement to find the response from our potential client. We were designing some messages we plan to place in our marketing materials to communicate with potential clients.

Empower our Decisions with AI

"Transform decision-making with our AI-driven platform that converts complex data into actionable insights. Make smarter, data-backed decisions with ease."

Seamless Integration at our Fingertips

"Unify our data landscape. Our platform integrates with leading APIs like Google Analytics and HubSpot, providing a complete view of our business intelligence in one conversational interface."

Beyond Data Analysis

"Elevate our business intelligence with a platform that understands our needs. Get customized insights and forecasts, all through a simple chat interface. It's not just data analysis - it's about building your data-driven future."

Designed for Decision-Makers

"Crafted for CTOs, CIOs, and forward-thinking executives, our platform brings advanced data analysis and AI insights directly to our fingertips, enabling fast and informed decisions."

Cut Through the Complexity

"Say goodbye to data overload. Our conversational AI interface makes understanding complex data straightforward, enabling you to focus on what matters."

Innovative, Intuitive, Integral

"Our platform is a leap towards the future of business intelligence—integrating diverse data sources, leveraging advanced AI for deep insights, and providing it all through an intuitive chat-based interface."

AI-Driven Insights for All

"Democratizing data analysis—our SaaS platform makes advanced AI insights accessible for small to medium-sized businesses, enabling them to compete on a new level."

Custom Insights, Universal Excellence

"Every business is unique, and so are its data needs. Our platform doesn't just provide data analysis; it delivers custom insights tailored to our business's specific goals and challenges."

Real-Time Intelligence, Real-World Impact

"In a rapidly changing business environment, our platform ensures you stay ahead with real-time insights and predictions, enabling swift adaptation and strategic advantage."

2.9 Risks

We were trying to understand the potential risks for our product. Identified a few groups of risks, including technical, market, financial, operations, client-related, and legal and regulation risks.

We identified the following technical risks:

1. **Data Security and Privacy.** Ensuring the security of the data being analyzed and complying with data protection regulations (like GDPR) can be complex.
2. **Algorithm Accuracy.** There is a risk that AI algorithms may not provide sufficiently accurate or relevant insights for business decision-making.
3. **Technology Obsolescence.** Rapid technological improvements could make the platform's technology obsolete.
4. **Dependency on Third-Party APIs.** Changes or discontinuation of third-party APIs could disrupt the service.

We identified the following market risks:

1. **Market Adoption.** Difficulty in convincing potential users of the value and effectiveness of the platform.
2. **Competition.** High competition from established BI tools and platforms that could innovate quickly or lower prices.
3. **Changing Market Needs.** The market's needs and preferences may evolve faster than the platform's development, making it less relevant.
4. **Misalignment with Customer Expectations.** The platform might need to meet its target users' specific needs or expectations fully.

We identified the following financial risks:

1. **Funding and Cash Flow.** Need for securing sufficient funding for development and scaling or managing cash flow efficiently.
2. **Monetization Model.** The chosen pricing model for the SaaS might not be well-liked by the target market, which could impact revenue.
3. **Cost Overruns.** Development or operational costs may exceed initial estimates, impacting the project's financial stability.

We identified the following operational risks:

1. Project Management. Challenges in managing the project timeline, scope, or resources effectively lead to delays or quality issues.
2. Talent Acquisition and Retention. We may have challenges with attracting and retaining the necessary talent with AI, data analysis, and SaaS development expertise.
3. Data Management. Risks associated with managing large volumes of data, including data quality and consistency issues.

We identified the following client-related risks:

1. Client Dependence. Over-reliance on a small number of clients for significant portions of revenue.
2. User Training and Support. Provide sufficient training and support to help users use the platform effectively.

We identified the following legal and regulatory risks:

1. Compliance. Failing to comply with industry-specific regulations or data protection laws in different jurisdictions.
2. Intellectual Property. Risks of infringement on existing patents or inability to effectively protect the platform's intellectual property.

2.10 Implementation cost

For the MVP version, we implemented logic with two key API integrations. They are API integration with Google Analytics 4 and HubSpot.

2.10.1 Why Google Analytics?

According to recent research, 55.49% (Yaquub M, 2023) of all websites use Google Analytics. Google Analytics is an absolute leader among the sites that use a traffic analytics tool, with an 86% market share.

2.10.2 Why HubSpot?

HubSpot is the most popular CRM among small and medium enterprises. According to HubSpot information (HubSpot, n.d.), more than 205,000 businesses use their product.

2.10.3 Estimation Scope

The scope for estimation has been defined as the following:

- 1) Google Analytics Integration
- 2) HubSpot Integration
- 3) Data Processing Module
- 4) Insights and Comparison Module
- 5) Sign Up and Sign in
- 6) Settings
 - a) Google Analytics Configuration
 - b) HubSpot Configuration
 - c) Users Management
- 7) Assistant
 - a) Chat with Assistant
 - b) Assistant Recommendations
 - c) Automation
- 8) Dashboard/Insights

The estimated total hours for the development, quality assurance, project management, and other unexpected work is around 1200 hours. The estimate itself is below.

ID	Epic	Develpt.	QA (30%)	PM (20%)	Contingency (10%)	Estimate
1	POC for Google Analytics Integration	0.0	0	0.0	0.0	0.0
1.1	Pull Google Analytics Report based on user request (query)	34.7	10.4	9.0	5.4	59.5
1.2	Google Analytics Data Persistence and Caching	26.7	8	6.9	4.2	45.8
		0.0	0	0.0	0.0	0.0
2	POC for HubSpot Integration	0.0	0	0.0	0.0	0.0
2.1	Pull HubSpot Report based on user request (query)	18.7	5.6	4.9	2.9	32.0
2.2	HubSpot Data Persistence and Caching	17.3	5.2	4.5	2.7	29.7
		0.0	0	0.0	0.0	0.0
3	Data Processing Module	0.0	0	0.0	0.0	0.0
3.1	Module to normalize the data from Google Analytics	29.3	8.8	7.6	4.6	50.3
3.2	Module to analyze the data from Google Analytics	66.7	20	17.3	10.4	114.4
3.3	Module to normalize the data from HubSpot	24.0	7.2	6.2	3.7	41.2
3.4	Module to analyze the data from HubSpot	66.7	20	17.3	10.4	114.4
		0.0	0	0.0	0.0	0.0
4	Insights and Comparison Module	66.7	20	17.3	10.4	114.4
		0.0	0	0.0	0.0	0.0
5	Setup the Dev Environment	8.0	2.4	2.1	1.2	13.7
5.1	Setup the dev, stage and production servers	8.0	2.4	2.1	1.2	13.7
		0.0	0	0.0	0.0	0.0
6	Signup and Signin	26.7	8	6.9	4.2	45.8
		0.0	0	0.0	0.0	0.0
7	Settings	0.0	0	0.0	0.0	0.0
7.1	Google Analytics Configuration	18.7	5.6	4.9	2.9	32.0
7.2	HubSpot Configuration	13.3	4	3.5	2.1	22.9
7.3	Users Management	13.3	4	3.5	2.1	22.9
8	Assistant	0.0	0	0.0	0.0	0.0
8.1	Chat with Assistant	86.7	26	22.5	13.5	148.7
8.2	Assistant Recommendations	21.3	6.4	5.5	3.3	36.6
8.3	Automation	66.7	20	17.3	10.4	114.4
		0.0	0	0.0	0.0	0.0
9	Dashboard/Insights	66.7	20	17.3	10.4	114.4
		680.0	204.0	176.8	106.1	1166.9

Figure 2.7 Estimated Development Hours

The team composition:

- full-time backend software engineer to accomplish the development work

- full-time front-end engineer
- Part-time Google Analytics consultant to assist with the reports and fine-tune the analytics algorithm
- Part-time HubSpot consultant who can assist with reports and fine-tune the analytics algorithm
- Part-time QA engineer (freelance)
- Part-time PM/BA (freelance)

The estimated development costs of the MVP version are around \$20,000.

2.11 Product Screenshots + UI/UX Prototype.

To present the hypothetical solution to potential clients during the validation phase, we created a group of UI/UX prototypes showcasing key system capabilities. We created the wireframes for the following screens:

1. Signup
2. Settings for Google Analytics
3. Settings for HubSpot
4. Assistant Recommendations Screen
5. Assistant Chat Screen
6. Automations Screen
7. Insights Screen

Welcome! Let's get started by telling us a bit about your company.
This information will help us customize your experience and recommendations.

Company and Contact Information

*All fields are mandatory

Company Name*

Your Role in the Company*

Contact First Name*

Contact Email*

Company Industry*

Company Size*

Contact Last Name*

Primary Goals

Improve website engagement Increase sales conversions Enhance customer understanding

Forecasting and Strategic Planning Sales Pipeline Analysis Marketing Insights

+

Annotations:

- Will be used for GPT prompts to customize responses for specific company roles (points to Your Role in the Company)
- Will be used for GPT prompts to customize responses for specific company size (points to Company Size)
- Reports, suggestions and analytics will be based on the industry (points to Company Industry)
- User should pre-define the goals that will be used in GPT prompts under some circumstances as well. (points to Primary Goals)

Figure 2.8. Signup Screen

Your Company Settings Matthew Parker

- Dashboard
- Assistant
- Automations
- Settings**

My Account

Privacy & Safety

Integrations

Billing

Notifications

Language

Integrations

Google Analytics [Edit](#) HubSpot [Edit](#)

Other available integrations that are still not connected.

Figure 2.9 Settings Screen

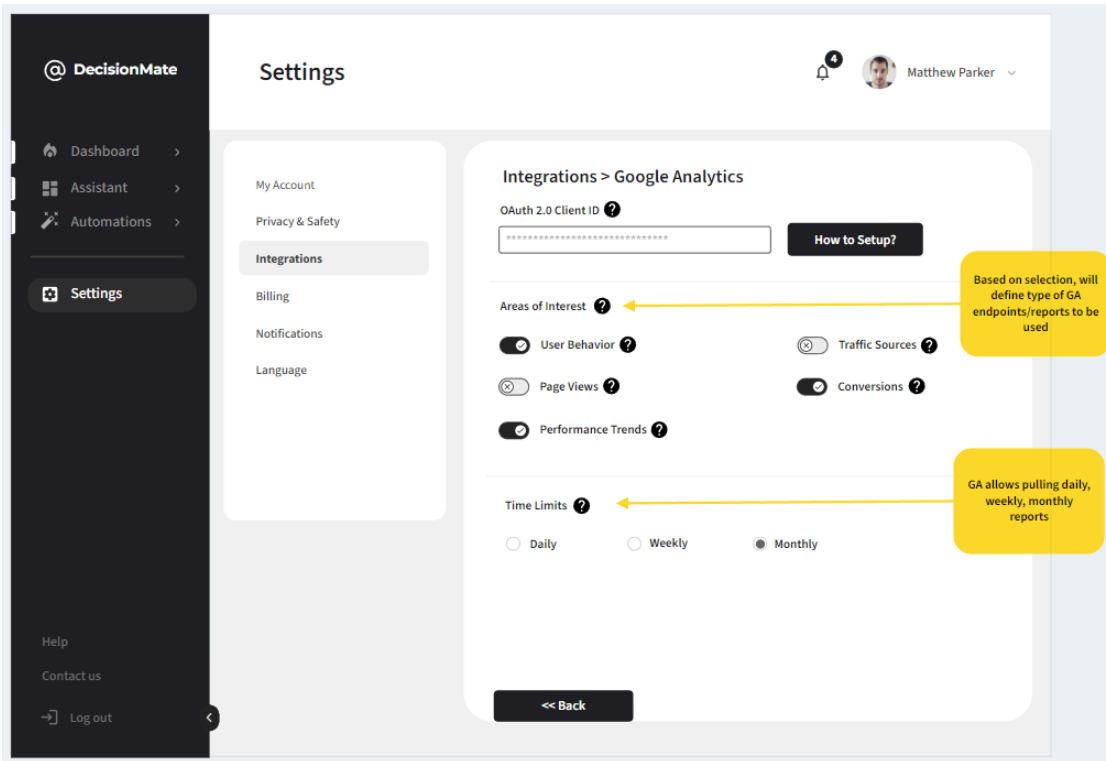


Figure 2.10. Google Analytics Settings Screen

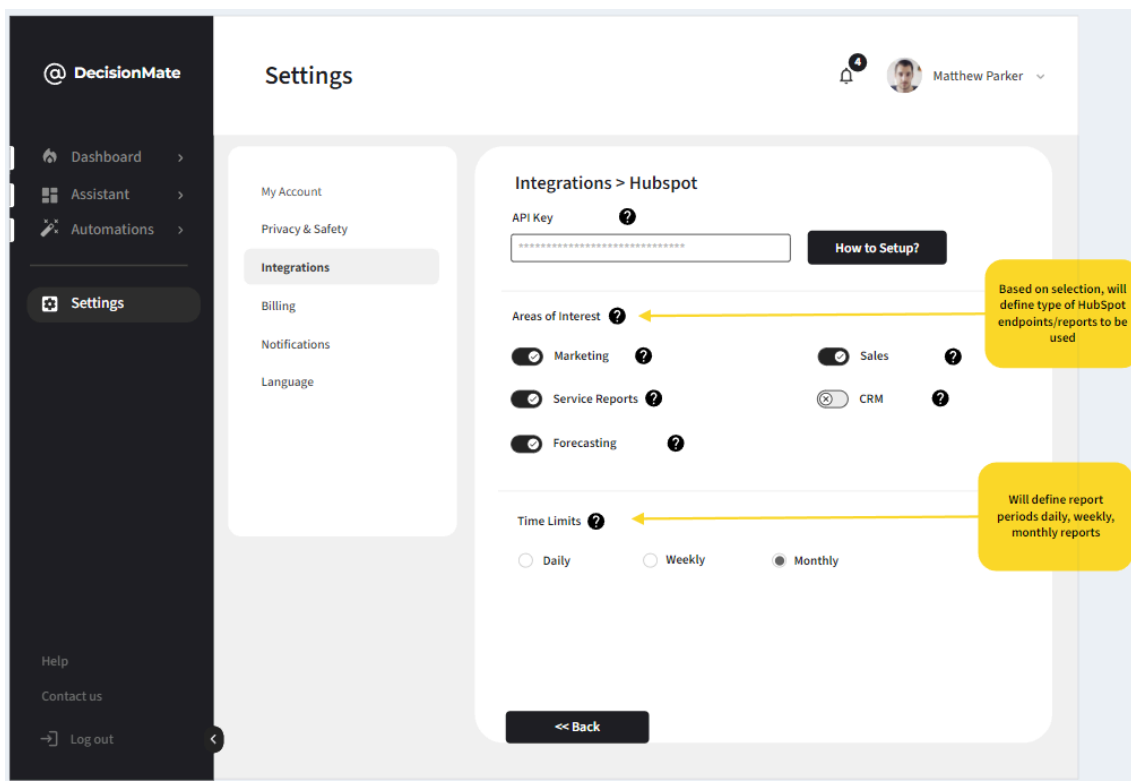


Figure 2.11. Hubspot Settings Screen

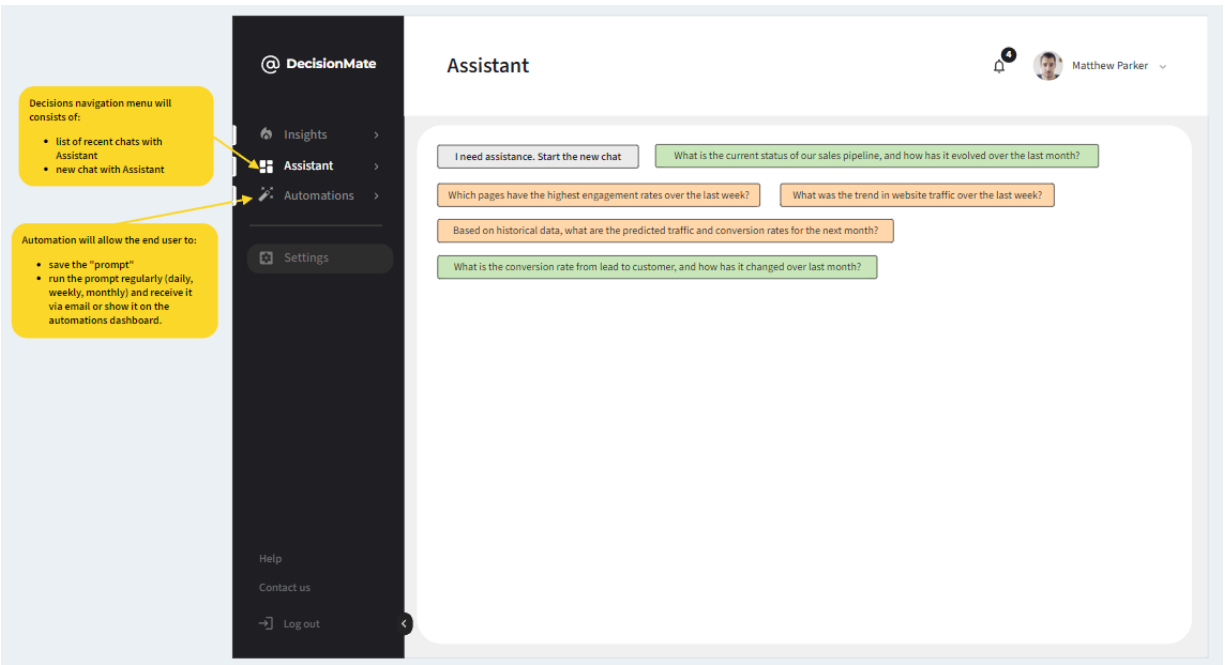


Figure 2.12. Assistant Recommendations Screen

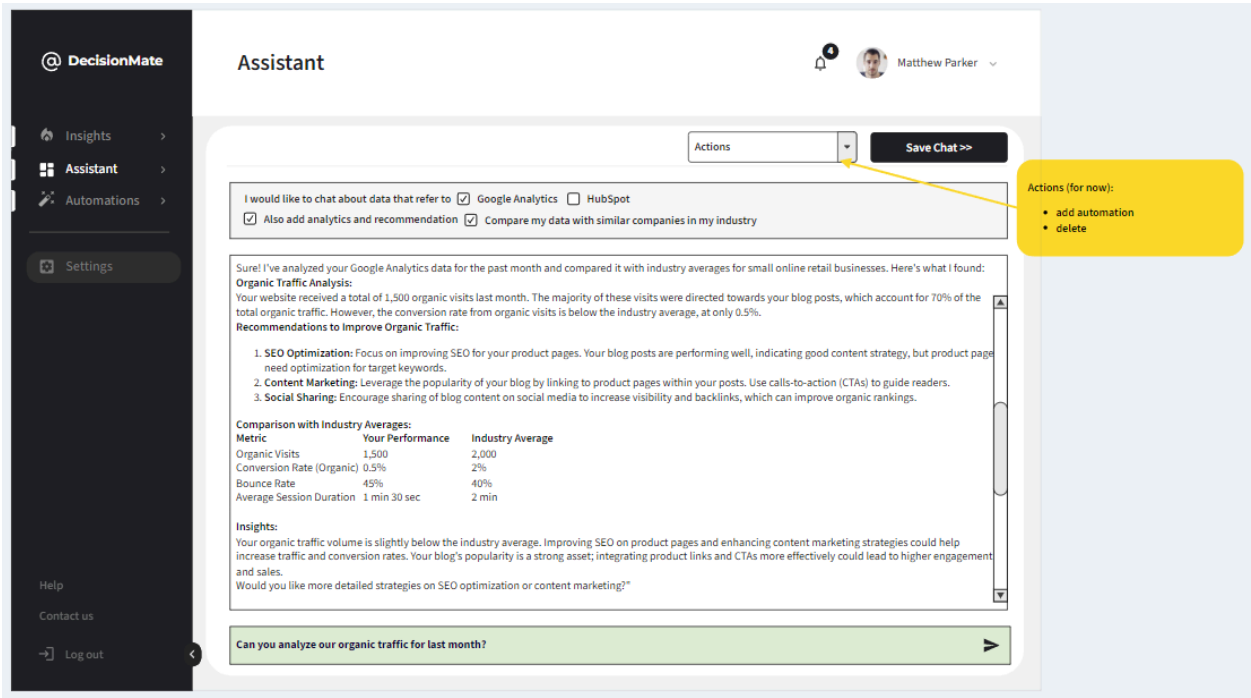


Figure 2.13. Assistant Chat Screen

Assistant

Matthew Parker

I would like to chat about data that refer to Google Analytics HubSpot

Also add and

Add Automation

Name this automation as . Generate the report every and . Here's what I found:

. account for 70% of the

Save

category, but product page

guide readers.

rankings.

Comparison with Industry Averages:

Metric	Your Performance	Industry Average
Organic Visits	1,500	2,000
Conversion Rate (Organic)	0.5%	2%
Bounce Rate	45%	40%
Average Session Duration	1 min 30 sec	2 min

Insights:

Your organic traffic volume is slightly below the industry average. Improving SEO on product pages and enhancing content marketing strategies could help increase traffic and conversion rates. Your blog's popularity is a strong asset; integrating product links and CTAs more effectively could lead to higher engagement and sales.

Would you like more detailed strategies on SEO optimization or content marketing?"

Can you analyze our organic traffic for last month?

Figure 2.14. Adding Automation Screen

Insights

Matthew Parker

Assistant Name 07:53 PM

Your website received a total of 1,500 organic visits last month. The majority of these visits were directed towards your blog posts, which account for 70% of the total organic traffic. However, the conversion rate from organic visits is below the industry average, at only 0.5%.

[More Details](#)

Figure 2.15. Insights/Dashboard Screen

2.12. Marketing and Sales Strategy

For sales and marketing, we were thinking about two phases. The first is direct sales and marketing, which involves visiting conferences with potential customers and scheduling demo calls through LinkedIn.

When visiting conferences, we should be able to:

- Showcase our product. We could use these opportunities to demonstrate our platform's unique capabilities live. Tailor our presentations to address specific pain points that SMBs face.
- Leverage these events for networking, not just with potential customers but also with potential partners. Collect business cards and follow up with personalized messages.
- Use these interactions to gather feedback on our product. Ask open-ended questions about the challenges SMBs face and their current solutions to these challenges.

With LinkedIn, we could:

- Craft personalized messages for outreach, avoiding generic sales pitches. Highlight how our platform can solve specific problems for the recipient.
- Post about our platform on LinkedIn regularly, sharing insights, quick tips, and user testimonials. Engage with comments to foster community.
- Participate in LinkedIn groups related to business intelligence, data analytics, and SMB operations. Share our expertise without overtly selling, positioning ourselves as a thought leader.

The first phase will help us get our first clients, gain honest feedback, and shape the product. Also, this first phase should be cost-efficient.

The second phase will include SEO optimization and paid traffic. The plan is to:

- Conduct thorough keyword research to identify terms our target audience is searching for.
- Develop high-quality, engaging content that addresses those search queries. This content should educate readers about the value of data analysis and how our platform can make it accessible.
- Create a content calendar to publish articles that consistently attract organic search traffic. We can consider guest posting on reputable industry blogs to gain backlinks and increase our site's authority.
- Work closely with our early adopters to document their success stories. These case studies should quantify the benefits of using our platform, such as time saved, increased revenue, or improved decision-making efficiency.
- Ask satisfied customers for testimonials so we can use them on our website and in marketing materials. It can be video testimonials as well.
- At a certain point, start with targeted Google Ads campaigns that focus on keywords with high purchase intent.

2.13 Pricing

We made a comparison with our competitors and talked with our potential clients about the fair cost of a product we built. Also, we are considering the following:

- Free 14-days trial
- We wanted pricing to be easy to understand without numerous pricing plans and features in each plan.
- Add-on services, like developing custom integrations for the business





- Be flexible with your pricing strategy. Monitor customer feedback and willingness to pay, and be ready to adjust your prices and features based on market demand and competition.

Based on that, we developed the following pricing for our product:

Features/Plan	Essential	Team
Price	\$49.99/mo	\$99.99/mo
Collaborators	One seat included	Five seats included
Ask questions in natural language	<input type="checkbox"/>	<input type="checkbox"/>
Get AI-powered answers to your questions	<input type="checkbox"/>	<input type="checkbox"/>
Let AI suggest questions to ask	<input type="checkbox"/>	<input type="checkbox"/>
Integration with Google Analytics and HubSpot	<input type="checkbox"/>	<input type="checkbox"/>
Permissions for Google Analytics Data		<input type="checkbox"/>
Permissions for HubSpot Data		<input type="checkbox"/>
Data retention	30 days	90 days
Automation	<input type="checkbox"/>	<input type="checkbox"/>

2.14 Costs and Revenue

To calculate the costs and revenue, we started by making an assumption. Our key market is the United States. According to the SBA Office of Advocacy (SBA's Office of Advocacy, 2024), the US has over 33 million SMEs, making up nearly all (99.9%) US businesses.

Industry				
	Without employees	1–19 employees	20–499 employees	All small businesses
Professional, Scientific, and Technical Services	3,689,878	784,970	52,089	4,526,937
Construction	2,879,156	675,352	61,687	3,616,195
Other Services (except Public Administration)	2,811,836	658,721	45,604	3,516,161
Transportation and Warehousing	3,189,090	180,919	21,462	3,391,471
Real Estate and Rental and Leasing	2,988,448	325,375	13,133	3,326,956
Administrative, Support, and Waste Management	2,554,511	313,759	39,298	2,907,568
Retail Trade	2,256,913	575,378	55,089	2,887,380
Health Care and Social Assistance	2,008,189	574,291	92,290	2,674,770
Arts, Entertainment, and Recreation	1,339,293	120,291	17,072	1,476,656
Accommodation and Food Services	491,813	418,167	124,706	1,034,686
Finance and Insurance	758,239	223,670	15,562	997,471
Educational Services	760,552	77,641	19,632	857,825
Wholesale Trade	393,682	239,122	39,339	672,143
Manufacturing	356,971	178,210	57,373	592,554
Information	334,717	72,997	10,121	417,835
Agriculture, Forestry, Fishing and Hunting	255,956	20,573	1,385	277,914
Mining, Quarrying, and Oil and Gas Extraction	67,754	14,372	2,978	85,104
Utilities	14,989	4,740	1,236	20,965
Management of Companies and Enterprises	*	5,226	13,068	18,294
Industries not classified	*	13,939	42	13,981
Total	27,151,987	5,471,736	647,921	33,271,644

* Not reported by the Census Bureau

Sources: [Nonemployer Statistics](#), 2020 (Census); [Statistics of US Businesses](#), 2020 (Census)

Figure 2.16. SME quantity in the United States

We made the following assumptions when evaluating the potential market for our product:

1. Number of SMEs. There are approximately 33 million SMEs in the United States alone. 10% of these companies are in sectors likely to need business intelligence and analytics tools based on your target features.
2. Industry Focus. Assume that the retail, manufacturing, real estate, and professional services sectors are more likely to adopt business intelligence tools. This forms about 30% of the total SME population.

3. Technology Adoption Rates. Considering the push towards digital transformation, assume that 20% of SMEs in the identified sectors are ready and willing to adopt new technologies like a SaaS business intelligence tool.
4. Market Penetration Goals. For a new entry, capturing 1-3% of the available segment in the first 1-2 years is a realistic goal, considering the market's competitive nature and the time required for adoption and scaling.
5. Pricing Assumptions. Assume an average subscription price of \$75 per month per company.
6. Economic Factors. Consider general economic conditions such as business spending trends and IT investment. Assume a moderate economic outlook where businesses are cautiously investing in new technologies.

Let's break down these assumptions into a calculation:

1. Target Industries Market Size. $30,000,000$ SMEs in US \times 10% relevant sectors = $3,000,000$
2. SMEs ready to adopt BI tools. $3,000,000 \times 30\%$ industry focus \times 20% tech adoption rate = $180,000$
3. Estimated Market Capture. $180,000$ potential customers \times 2% conservative market capture in 1-2 years = $3,600$ customers
4. Revenue Estimate. $3,600$ customers \times \$75 per month \times 12 months = \$3,240,800 annual revenue from subscriptions

Based on conservative assumptions, these calculations provide a rough estimate of the market size and potential revenue.

EXECUTIVE SUMMARY

Today, businesses of all sizes face a significant challenge - managing and making sense of huge amounts of data. This diploma paper discusses creating new software as a service platform that helps businesses handle this challenge better by using a chat-based system enhanced by AI technologies.

Traditional tools for analyzing business data are often complex and require much manual effort to set up and use. Small and Medium Enterprises find it particularly hard to use these tools because they often lack the money, technical skills, and ability to handle big data. This makes it difficult for them to use data to make better business decisions.

The new platform introduced in this paper changes the game by allowing users to interact with data through a simple chat interface, similar to messaging apps. This makes analyzing data as easy as having a conversation, which means even people without technical skills can make decisions based on data quickly and with confidence.

The platform can connect to different data sources like Google Analytics and HubSpot through APIs, which helps it gather data from various parts of a business. It uses advanced AI to analyze this data, spot trends, and predict future outcomes, providing users with smart insights almost instantly.

This platform stands out because it combines the simplicity of chat with powerful data analysis tools. It is especially appealing to smaller businesses that need easier ways to handle data. This makes the platform not only unique but also highly needed in the market.

The platform aims to change how businesses interact with data by making advanced data analysis more accessible. This can help companies become more

data-driven, making faster and more informed decisions that could give them an edge over competitors.

The initial focus is on integrating well-known tools like Google Analytics and HubSpot, but the plan is to add more features and data sources over time. The platform will keep improving based on user feedback and new data analysis trends.

This diploma paper shows how a chat-based SaaS platform can simplify data analysis for businesses, especially SMEs, making it easier for them to quickly use data to make smart decisions. This helps companies manage data better and boosts their ability to compete and succeed in a data-driven world.

IMPACT OF THE MSTM PROGRAM

The Technology Management program played a crucial role in shaping my diploma project. All courses were exciting and had a significant impact. Here, I want to mention a few of them that had a direct impact on this paper.

Financial Management taught me how to manage finances and resources effectively. This knowledge was vital in planning how the software could be financially viable and competitive, ensuring it could grow and adapt without financial issues.

Digital Disruption introduced me to methodologies and frameworks for embedding innovations into products. This inspired me to use advanced AI algorithms in my software, helping it stand out from other tools. The course also stressed the importance of staying updated with new technologies, which is crucial for the continuous improvement of my software.

Strategic Marketing helped me understand who would benefit most from my software. This course guided me in presenting the software as a necessary tool for businesses that rely on data.

R&D and Product Management taught me how to develop a product from the idea stage to its release. These courses emphasized keeping the users in mind, leading me to continuously seek feedback and improve the software according to users' needs and wants.

In short, my MSTM gave me the tools and knowledge to create a software platform that meets a business need and introduces a new way for companies to engage with business intelligence. Each course provided essential skills that helped bring this project to life, preparing it not just as a school project but a real business opportunity.

GLOSSARY OF TERMS

In this section, you will find references to the essential abbreviations used in this paper. We used Wikipedia (Wikipedia contributors, 2024) as the main resource to explain the abbreviations. They are:

- *SaaS (Software as a Service)* - a software distribution model where applications are hosted by a third-party provider and made available to customers online (Quip, 2021).
- *SME (Small and Medium Enterprises)* - businesses whose personnel numbers fall below certain limits. The classification of SMEs can vary between countries but typically involves thresholds on the number of employees, total net assets, or sales.
- *API (Application Programming Interface)* - a set of rules and tools for building software applications that specify how software components should interact.
- *Business Intelligence (BI)* - technologies and strategies enterprises use for data analysis of business information to support decision-making.
- *AI Algorithms* - advanced machine learning models used to analyze data and provide insights.
- *Data Integration* - combining data from different sources into a unified view.
- *Real-time Analytics* - the discipline that applies logic and mathematics to data to provide insights for making better decisions quickly.
- *Predictive Analytics* - techniques that use historical data to predict future events.
- *Conversational Interface* - A user interface mimics chatting with an actual human, making technology accessible and engaging through natural language interactions.

- *UI/UX (User Interface/User Experience)* - UI refers to the aesthetic elements through which users interact with a product, while UX is about the experience a user has when interacting with the product.
- *MVP (Minimum Viable Product)* - a product with just enough features to attract early adopter customers and validate a product idea early in the product development cycle.
- *Google Analytics* - Google offers a web analytics service that tracks and reports website traffic.
- *HubSpot* - a developer and marketer of software products for inbound marketing, sales, and customer service.

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