# Capstone Project Proposal

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## Business Goals

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| **Project Overview and Goal**<br><br>What is the industry problem you are trying to solve? Why use ML/AI in solving this task? Be as specific as you can when describing how ML/AI can provide value. For example, if you're labeling images, how will this help the business? | Many people nowadays are overwhelmed by the increasing volume of emails. This can lead to a sense of frustration and anxiety. As important messages may be missed or overlooked in the sea of emails.<br>To make life easier, the AI tool will break down all emails into a to-do list. By finding the action points of an email, you can quickly find what needs to be done and when.<br>Hence ML/AI seems to be an appropriate one for solving this task. By using AI/ML and achieving much higher accuracies for this task. |
| **Business Case**<br><br>Why is this an important problem to solve? Make a case for building this product in terms of its impact on recurring revenue, market share, customer happiness and/or other drivers of business success. | This business case proposes an AI tool that converts emails into to-do lists to improve productivity. The tool aims to address the time-consuming task of manually creating to-do lists from numerous emails. It offers an automated solution that scans emails, identifies tasks, and generates personalized to-do lists based on priority. The tool can be monetized through a subscription-based model, providing recurring revenue. It also has the potential to capture a significant market share in the productivity tools market. By reducing time and stress, it enhances customer happiness and fosters loyalty. Additionally, it demonstrates innovation and positions the company as a technology leader, opening up further business opportunities. Overall, investing in this AI tool development is highly recommended based on its potential to generate revenue, increase market share, improve customer satisfaction, and contribute to overall business success. |

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| **Application of ML/AI**<br><br>What precise task will you use ML/AI to accomplish? What business outcome or objective will you achieve? | The precise task that will be accomplished using ML/AI is converting emails into to-do lists. The AI tool will automatically scan through emails, identify tasks, and create personalized to-do lists for users. It will prioritize tasks based on various factors such as urgency, deadlines, and the importance of the sender.<br>The business outcome or objective that will be achieved through this AI tool is increased productivity. By automating the process of creating to-do lists from emails, professionals and businesses can save time and effort. This, in turn, allows users to focus on more high-value activities and reduces the risk of tasks being overlooked or forgotten. The tool aims to enhance overall efficiency and effectiveness in task management, leading to improved productivity and potentially higher business success. |

# Success Metrics

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| **Success Metrics**<br><br>What business metrics will you apply to determine the success of your product? Good metrics are clearly defined and easily measurable. Specify how you will establish a baseline value to provide a point of comparison. | For the AI tool that converts emails into a to-do list with the aim of increasing productivity, here are some business metrics that can be applied to determine its success: Conversion Rate: Measure the percentage of users who sign up or subscribe to the AI tool after visiting the website or receiving a promotional email. A higher conversion rate indicates the effectiveness of the marketing efforts and the appeal of the product. User Engagement: Track the level of user engagement with the AI tool, including metrics such as the number of active users, frequency of tool usage, and average time spent using the tool. This helps measure the product's stickiness and its ability to retain users, Task Completion Rate: Measure the percentage of converted emails that are successfully transformed into actionable tasks on the to-do list. This metric indicates the accuracy and effectiveness of the AI tool in understanding and capturing the relevant information from emails, Time Saved: Quantify the amount of time saved by users using the AI tool. This can be measured by comparing the average time taken to manually convert emails into tasks before using the tool versus the time taken with the tool. A higher time-saved metric indicates the tool's efficiency and value proposition, and User Satisfaction: Gather feedback from users through surveys, ratings, and reviews to assess their satisfaction with the AI tool. This can include metrics such as Net Promoter Score (NPS), customer satisfaction scores, or user feedback ratings. A higher satisfaction score indicates a successful product that meets users' needs and expectations. |

# Data

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| **Data Acquisition**<br><br>Where will you source your data from? What is the cost to acquire these data? Are there any personally identifying information (PII) or data sensitivity issues you will need to overcome? Will data become available on an ongoing basis, or will you acquire a large batch of data that will need to be refreshed? | The data for training the AI tool to convert emails into a to-do list can be sourced from publicly available email datasets, user-provided data (with appropriate consent and privacy measures), and synthetic data generation techniques. The cost to acquire these data may vary depending on the source and data quality. To address personally identifying information (PII) and data sensitivity issues, strict data anonymization and privacy protection measures will be implemented. The data can be acquired on an ongoing basis to ensure the model's continuous improvement and adaptation to evolving email patterns and user needs. |
| **Data Source**<br><br>Consider the size and source of your data; what biases are built into the data and how might the data be improved? | The data used for training the AI tool to convert emails into a to-do list should be diverse and representative of different demographics, industries, and email patterns to mitigate biases. Biases inherent in the data can be identified through regular audits and analysis, and efforts can be made to improve data quality and inclusivity. This can be achieved by augmenting the training data with real-world examples, ensuring a broad range of sources and contexts, and actively seeking feedback from users to address any bias-related issues and improve the overall performance and fairness of the AI tool. |
| **Choice of Data Labels**<br>What labels did you decide to add to your data? And why did you decide on these labels versus any other option? | The labels added to the data for training the AI tool to convert emails into a to-do list include task categories (e.g., "meeting," "deadline," "follow-up"), priority levels (e.g., "high," "medium," "low"), and task attributes (e.g., due date, assignee). These labels were chosen as they provide essential information for organizing and managing tasks effectively. By incorporating task categories and priority levels, users can easily prioritize and allocate their time and resources efficiently. Including task attributes allows for additional context and customization options, enhancing the overall productivity and usability of the AI tool. |

# Model

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| **Model Building**<br><br>How will you resource building the model that you need? Will you outsource model training and/or hosting to an external platform, or will you build the model using an in-house team, and why? | Initially, I will create a quick prototype by utilizing Automated ML tools or services such as Google AutoML or Amazon SageMaker. This will allow me to assess if the model can accomplish the desired tasks. I will evaluate the metrics to determine if the model meets the desired performance standards. If the model performs well enough, I will proceed with using it. However, if the performance is not satisfactory, I will explore options to enhance the model, such as adding more data. If I am still unsatisfied with the model's performance, I will consider building the model using an in-house team. This is because Automated ML tools may not deliver optimal results in all use cases. |
| **Evaluating Results**<br><br>Which model performance metrics are appropriate to measure the success of your model? What level of performance is required? | Typically, commonly used metrics such as precision, recall, and F1-score can be employed. The aim should be to achieve high accuracy in task extraction, priority assignment, and deadline extraction to ensure the converted to-do list is reliable and useful. Ideally, the model should strive for accuracy levels above 90% or even higher, depending on the desired level of precision and the impact of any potential errors on productivity. |

# Minimum Viable Product (MVP)

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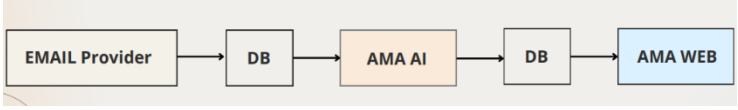
| **Design**<br><br>What does your minimum viable product look like? Include sketches of your product. | The minimum viable product (MVP) is a functional AI tool that extracts tasks from emails and generates a basic to-do list, with a user-friendly interface and integration with popular email clients.<br>  |
| **Use Cases**<br><br>What persona are you designing for? Can you describe the major epic-level use cases your product addresses? How will users access this product? | Professionals and individuals managing high email volumes. Major Epic-Level Use Cases: convert emails into structured to-do lists, organize and prioritize tasks efficiently, set reminders and receive notifications, and seamless integration with email clients and productivity platforms. Users can access using the web. |

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| **Roll-out**<br><br>How will this be adopted? What does the go-to-market plan look like? | Users will adopt the AI tool by marketing its benefits, providing user training and support, and integrating it with popular productivity platforms. Go-to-Market Plan: Market research to identify target customers and validate demand, develop and refine the AI tool for accuracy and user-friendliness, implement marketing strategies to create awareness and generate interest, offer free trials, demos, and promotions to acquire users, provide comprehensive user training and responsive customer support, explore partnerships for integration with productivity platforms, gather user feedback for continuous improvement, scale infrastructure, add features, and expand the user base. |

# Post-MVP-Deployment

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| **Designing for Longevity**<br><br>How might you improve your product in the long-term? How might real-world data be different from the training data? How will your product learn from new data? How might you employ A/B testing to improve your product? | In the long term, the product can be improved by enhancing task extraction accuracy and efficiency, personalizing the tool based on user feedback and preferences, and expanding compatibility with more platforms and productivity tools. Real-world data, which may differ due to evolving email formats and language variations, should be regularly incorporated into training data to improve performance. User feedback should be enabled to update the model periodically and continuous monitoring of user interactions should be done for retraining with new data. A/B testing can be conducted to compare iterations and enhancements, measuring metrics like task extraction accuracy and user satisfaction to identify improvements. |
| **Monitor Bias**<br><br>How do you plan to monitor or mitigate unwanted bias in your model? | To monitor and mitigate unwanted bias in the AI tool for converting emails into a to-do list, a comprehensive approach will be implemented. This includes conducting regular bias audits on the training data to identify any potential biases, and ensuring the training data is diverse and representative of different demographics and contexts. Additionally, ongoing monitoring and analysis of user feedback and usage patterns will help identify and address any bias-related issues in the tool's outputs. Mitigation strategies will involve refining the model architecture, fine-tuning algorithms, and implementing fairness measures to minimize bias and ensure equitable and unbiased task extraction from emails. Continuous evaluation and improvement will be prioritized to create a tool that is as fair and unbiased as possible. |