

**A GENERATIVE AI INTEGRATION TOOL
FOR MANAGERS**

Preparing, dealing and thriving with the impact of AI

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ABSTRACT

This graduation report presents a comprehensive approach to the identification of an opportunity in the rising technology and interests in generative AI. The report delivers a concept for a tool that is designed for managers. The tool is aimed at aiding in the integration of generative AI within teams. The project is grounded in a literature review, stakeholder interviews, a co-design session with students, a survey with stakeholders and validating. The literature review shows there is an expected rise in interests and demand for using the new technology of generative AI. The interviews with stakeholders shine light on the necessary means that are needed to integrate generative AI in the workplace. Some of these means are: more knowledge, more experience and a starting point. The co-design session brought new perspectives on solutions and opportunities that the tool could incorporate to be successful. The major breakthrough of the co-design session is the implementation of employee interaction. In the value survey it is shown that the managers do not want too much insights in their employee behavior and would prefer a personalized document of advice for implementation. At the end of the development stage the concept is shown to the target audience who give their option on how well it manages to fulfill its purpose. The responses are positive enough that only minor suggestions are given to improve the concept. The final concept tool offers multiple options to achieve the desired solution. Using the profile of the manager and of their employees, the tool provides personalized advice to enhance decision making and awareness of actions. In addition, the tool incorporates employee interaction, enabling team members to unknowingly contribute to the insights that further refine the advice that the manager gets. The tool does not only offer advice, it also offers training and educational components to further provide managers with the skills needed to navigate the fast changing landscape of generative AI integration. The report contributes by collecting and transforming valuable insights and translating that into written output which can be used in the future for development in the generative AI area. The paper also offers a concept for a practical tool designed to prepare, deal and thrive within the generative AI powered workplace. This concept can be used as a reference point for projects that aim to design a similar tool.

KEYWORDS

Artificial intelligence, managers, generative AI , generative AI impact, tool design, generative AI adoption, organizational change, employees, generative AI management, transformation, employee interaction.

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1 - AN INTRODUCTION TO THE PROJECT

1.1 An introduction to the context

Managers today face the challenge of incorporating artificial intelligence (AI) into their organizations alongside their employees. In order to survive and remain competitive, businesses must adapt to the rapid advancements and increasing relevance of AI in various industries. This has sparked discussions on significant transformations in business operations. This thesis focuses on how managers can be helped navigate this rapid and ever changing landscape.

To assist managers in navigating the impact of AI within their teams, this thesis aims to design a comprehensive tool. The thesis subject is chosen because of the recent rise in demand for generative AI capable people (Lightcast Press Office, 2023). The outcome of the thesis is aimed at providing a solution to the demand of generative AI capable people by designing a concept that can educate and train people with generative AI. The tool is specifically tailored to help managers in creating transformation plans for their team taking into account the anticipated impact of AI. Its purpose is to enable informed decision-making, improve relationships with their employees, and maximize opportunities presented by AI, ultimately ensuring a successful transition into an AI-driven future.

Taking in consideration that not every aspect of the employees relationship with the manager will change because of AI this thesis will identify the points where AI might impact the relationship and design from that perspective. The unpredictability of AI and humans results in uncertainty and therefore advice will not be given in absolutes.

The design of the tool will be informed by a thorough review of literature on what AI exactly is, business transformations, impact of AI, managers influence on employees and employee satisfaction. It will also incorporate insights from case studies, interviews with experts, and user validating. Emphasis will be placed not only on achieving desirable outcomes for users, which are managers in this case, but also on ensuring the tool's usability. The result will be an adaptable and user-friendly resource capable of addressing the unique challenges faced by diverse and evolving industries and organizations.

The primary focus of the tool will be to assist managers in integrating generative AI inside their team. The tool will focus on educating and training the manager based on their personal needs and the needs of the team. The tools' interaction with the employee is aimed to gather information for the manager and in the process also educate and train the employee. The tool will therefore be used for empowering teams within businesses to

harness generative AI's benefits.

To accomplish the purpose, the tool will provide a structured process for managers to assess their current state, identify potential areas of AI impact, and define clear risks and opportunities. This tool should also be an ever evolving tool as the impacts of generative AI changes rapidly and in different directions.

1.2 Research Questions

In order to follow certain uncertainties throughout the project the following research questions have been created. These research questions will help guide the project in a clear direction. The research questions are answered throughout the report yet they are also all individually answered in the conclusion section.

1. **Need for a tool:** Is there a need for a tool that assists managers in integrating generative AI in their teams?
2. **Perceived benefits and risks of generative AI:** What do stakeholders think are the benefits and risks of generative AI?
3. **Areas of need:** Where do managers need the most aid in integrating generative AI in their teams?
4. **Co-designing:** How does having a co-design session impact the design process of the tool?
5. **Valuable asset for the tool:** What topics, features and insights do managers think are the most valuable for the tool?
6. **Managers' opinion on the tool:** How valuable will the managers perceive the tool in aiding them integrate generative AI in their teams?

2 - METHOD

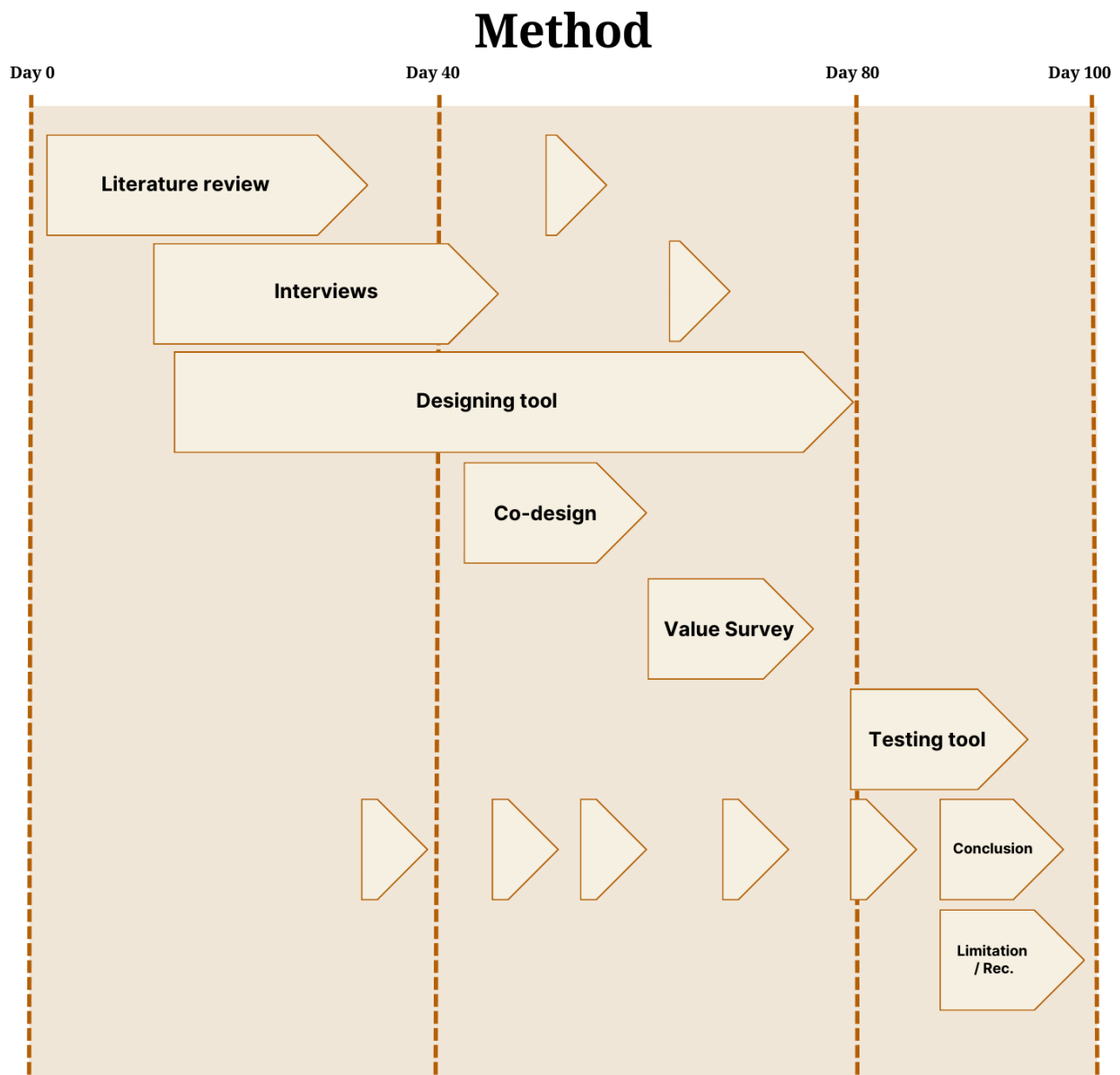
The process used for the project is as followed:

1. Literature review of relevant existing information.
2. Interviews with stakeholders, experts and users.
3. A: Designing a tool using insights from literature review and interviews.
B: Designing a tool by co-designing with relevant participants.
C: Gathering insights from a survey
4. Validating tool with users.

5. Concluding the usefulness of the tool.
6. Recommendations and limitations of the project.

Even though this process might seem very linear at the moment it was executed in a flexible manner. The steps in the method will also overlap largely to make sure that they influence each other making the process based on all actions taken in the project. In figure 1 a visualized form of the method illustrates the overlap of all the core steps of the project. Every step of the process will be further elaborated on in the following subchapters.

Figure 1: Visualised method of thesis project



2.1 - Literature review of relevant existing information

The research began with conducting a thorough literature review. This process involved searching and reviewing relevant academic articles, books, lectures, industry reports and other trustworthy and information sources. The literature review aims to gain a deep understanding of existing knowledge, theories, and best practices related to artificial intelligence, manager influence and practices, employee satisfaction and purpose and designing tools for companies. Key themes, theories, and frameworks identified in the literature will provide a foundation for the next steps of the designing process.

2.2 - Interviews with stakeholders, experts and users

Following the literature review, qualitative interviews will be conducted with relevant stakeholders like: AI experts, managers of companies and employees. Interviews will be semi-structured, allowing for flexibility while ensuring consistency in the topics and useful outcomes. The interviews will be recorded, transcribed, and analyzed to extract key themes, perspectives, and insights.

2.3 - Designing transformation tool

Based on the insights that came out of defining the design opportunities using the interviews, literature review and the authors intuition. More concepts will be generated with a carefully planned co-design session which will help create more ideas from different perspectives. These designs will be concepts that should help the user with easily creating a strategic approach for generative AI integration. These concepts will be for a manager to help them thrive and avoid risks during the rise of AI. These concepts will be used to create a more complete concept with the benefits combined. Finally a value survey will be used to discover where the value would be for the managers. These insights will be used to make a final iteration on the concept.

2.4 - Validating tool

The design created in the previous step will be validated with relevant users, these users should be managers. User validating will involve quantitative methods to gather feedback, evaluate usability, and assess the effectiveness of the design. User feedback will be collected, analyzed, and used to create recommendations to make further improvements on the concept. The feedback will also be used to create conclusions on the value of this design and project.

2.5 - Concluding the usefulness of the tool and recommendations and limitations of the project

The project will conclude by looking at the findings from the literature review,

interviews, value survey and user validating. The conclusions will address to what extent the tool worked, summarize key insights the tool provided in addressing business transformations due to AI. The limitations of the research, such as sample size, scope, or generalizability, will be discussed in the limitations. Recommendations for future research or improvements to the design will be provided, based on the insights gained from the user validating process.

2.6 - The phases of the project

The project will be held in three phases. Each of these phases has a certain intent that will be achieved using specific actions to get the desired results for that phase. These phases are based on the TU Delft industrial design engineering master schedule.

2.6.1 Phase one, discovery

The intent is to discover topics, values, directions for the project and initial designing. This will be achieved with actions like: literature review, interviews with stakeholders and designing. The desired results are: insights on various topics, values that help shape directions and output for the project and an initial design.

2.6.2 Phase two, creating

The intent is to discover concepts, iterate on concepts and choose a concept. This will be achieved with actions like: co-designing, designing tools, performing a value survey, updating knowledge and refining the concept. The desired results are: more insights for the concepts and a refined design.

2.6.3 Phase three, assessing

In the final phase the validating will be performed and the usefulness of the concept will become more apparent. The intent is to conclude its value and its limitations. This will be achieved with actions like: validating, concluding, answering the research questions and writing the report. The desired results are: a conclusion on its value, a list of limitations of the end product and a report.

3 - INSIGHTFUL AND RELEVANT TOPICS

Before designing a tool that could help managers in their venture to benefit the most from this AI revolution there first needs to be an understanding on six important topics. These six topics are:

1. Artificial intelligence
2. Experts prediction on growth and impact of artificial intelligence
3. Artificial intelligence's impact on businesses
4. Company transformations
5. Managers influence and practices
6. Employee satisfaction and purpose

After this review of already existing literature a conclusion will be drawn to further enhance the viability of the field research and the design process.

3.1 - Artificial intelligence

3.1.1 What is artificial intelligence

To prepare and or even deal with the upcoming change that artificial intelligence brings there first needs to be a deep understanding on what it is and what it is capable of doing. Artificial intelligence or AI as it is widely known is as the name suggests a man made of intelligence and computer programs that can act and perform like human intelligence. John McCarthy defines AI as the development of intelligent computer programs that is not limited to biologically observable methods (IBM, 2023).

One of the earliest examples of AI can be traced back to Alan Turing's 1950 paper called: Computing machinery and intelligence. In this paper Alan Turing introduced the question of whether machines can think like humans or mimic their intelligence. Alan Turing proposed the "Turing Test" to assess machine intelligence (Turing, 1950). In this "Turing Test" he proposed a sort of game to test the capabilities of the computer to act like a human. In this game there would be a human judge chatting with human participants and computers. If the computers would be indistinguishable from the human participants it would have passed the test.

Stuart Russell and Peter Norvig's book called: "Artificial Intelligence: A Modern Approach," looks into the different goals and definitions of AI based on rationality and thinking versus acting. They propose four goals for artificial intelligence: systems that think like humans, systems that act like humans, systems that think rationally, systems that act rationally (Russell & Norvig, 1995). These distinguishes in goals can be attributed to different purposes it serves. If a human interaction needs to be mimicked then this system should act like a human. In other cases someone might want the most rational

outcome to a problem and or question in which case a system that thinks and acts rational would be preferred. For example, what Turing would test falls under the category of "systems that act like humans."

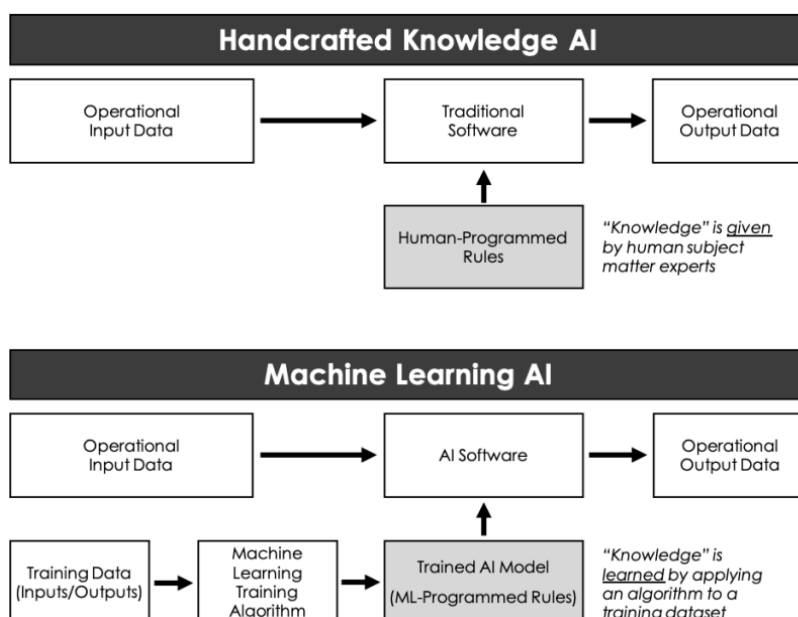
Over the years, AI has experienced periods of attention yet the release of OpenAI's "ChatGPT" which is a generative AI model with advanced natural language processing capabilities has taken the world by storm. Generative models can learn various data types, including language, software code, images and more. The true potential for this technology is yet to be discovered. Because of its recent burst of growth there are many hopes and concerns surrounding AI, these will be discussed in chapter 3.2.2 and 3.2.3.

3.1.2 How does AI work

AI has a large set of capabilities rather than being used for a specific technical approach. There are many approaches for creating AI systems, each with different strengths and weaknesses. These approaches have been classified into two broad categories: Handcrafted Knowledge and Machine Learning. Machine Learning is the more recent of the two approaches. Machine learning has played a significant role in the great advancements witnessed in AI capabilities over the past decade. When individuals, the media or companies talk about AI, they are probably referring to Machine Learning.

The difference between a Handcrafted Knowledge System and a Machine Learning system is in where they get their knowledge. The Handcrafted Knowledge systems need human programmers to give them knowledge through manual rule programming. Machine Learning systems generate their own rules and therefore their own learning. Instead of outright man made encoding rules, Machine Learning systems are so called trained using data provided by humans (Allen, 2020). Figure 2 illustrates the key differences between Handcrafted Knowledge AI and Machine Learning AI.

Figure 2: Simplified models of different types of AI (Allen, 2020)



3.2 - Expert predictions on growth and impact of artificial intelligence

3.2.1 Experts predictions on growth of AI

Predictions will always be uncertain, that is why they are predictions and not true visions into the future. Yet making predictions and estimated guesses will help us to better prepare for the future. The worldwide market share of AI is expected to grow almost by 1900% from 2021 to 20230 (Statista, 2023).

In a study where more than 800 AI experts were asked about the future of AI two insights were gained that could help us predict the future state of AI in the near and far future. The study asked the experts how far in the future they expect human AI. This human AI is comparable to self aware AI previously discussed in chapter 3.1.2.

The first insight gained out of the study is about how much uncertainty there is around the entire situation. There was no consensus about how far away this human AI was. Some believed it to be multiple decades away whereas some earliest estimates were months away. This shows that the growth according to AI experts is unpredictable and that also shows in their answers. Because when asked about how certain they were about their prediction of the arrival of human Ai they had consensus on how they were very uncertain.

The second insight is that there is a certain consensus that the arrival of this human AI will not take more than a century. More than half of the AI experts even believed that it would be here within the following 50 years, as of writing that would suggest its arrival at the latest 2083 for a majority of experts (Rosser, 2023). This would mean that for some humans alive right now they will get to live to see the day that a self aware AI will be present .

3.2.2 Experts suggested benefits of AI

With AI entering the scene at such a rapid pace there is also rampant speculation on what the benefits could be for us as a society and like always what benefits it could bring to businesses. As discussed before in a previous chapter about that there is still uncertainty about the growth and capabilities. It is wise to make estimated guesses about the benefits of AI to leverage the advantages it could bring.

AI is having a significant impact on different sectors of the economy. Yet some argue that humans do not have to worry that robots will replace their jobs entirely. Companies that automate their operations with the main goal to reduce their workforce will only experience a short lived productivity gain. A research conducted on 1,500 firms across different industries shows that the most significant performance improvements happen when humans and smart machines like AI collaborate. Using each other's strengths to bring a new type of work relationship and efficiency that has yet to be seen (Wilson, 2019).

When talking about how AI could aid or even in some places replace the human work force it should also be noted that this is not in every sector of the job economy. As an AI could aid humans in intelligent work it might come to no surprise that it can not easily replace manual labor. When considering the use of modern AI solutions or regular humans in manual labor, humans become a more favorable option in this situation. This would suggest that the return of investment or so called ROI is lower when considering the AI option. This lower ROI occurs under situations that have one or more of the following three circumstances:

- Humans exhibit a lower error rate at this task, and errors carry significant costs.
- The speed of completing the tasks is not a crucial factor.
- The costs that are tied with the tasks are so low that investing in AI does not make economic sense.

In business there are arguably three key metrics that hold importance: speed, cost, and effectiveness (Dilmegani, 2022).. If these three key metrics are not significantly improved by introducing AI it would be an unwise economic decision to introduce an AI in that process

Having discussed where AI would perhaps not make sense to integrate, it is worth mentioning there are countless possibilities where it could be integrated. Even though AI and human intelligence might seem similar there are important distinctions that make them uniquely competent for certain tasks in processes. The ROI could be greater if the one or more of the following circumstances are present during the process (Maheshwari ,2023):

- AI is able to reduce the amount of errors made at this specific task and errors carry a significant cost.
- Repetitive tasks and processes can be performed by an AI to allow humans to be placed elsewhere.
- Large amounts of data have to be processed, an AI would be able to more accurately and more time efficiently interpret and take care of the data. This would also help with faster decision making as the AI can faster interpret the data and draw conclusions at a faster rate.
- Assistance in small tasks could be taken care of by an AI. This would make the AI an assistance to a human.

- If certain tasks in the process are risking the safety of a human an AI could replace that human to ensure the humans safety.
- The tasks benefit from 24/7 attention, as an AI does not have the need for sleep, breaks and overall human life desires it can work inhuman hours to increase productivity.

Considering all the benefits it might seem that it would be an easy decision to incorporate an AI in most workplaces, lives and other applicable situations. Yet there are still concerns on what risks and dangers this change would bring to society.

3.2.3 Experts concerns on AI

Humans have been wary about the rise of artificial intelligence. It has been depicted as dangerous, cold and sometimes even evil by many works of fiction throughout the years. In 1963 the superheroes of Marvel comics faced off against Ultron for the first time, an evil AI (*Marvel Comic Reading Lists, 2023*). This AI would be prevalent throughout the years making appearances in all sorts of media in the last decades. Other famous examples of antagonistic AI in popular media are “HAL 9000” from the movie “2001 space odyssey” (Kubrick, 1968) and “AM” from the book “I have no mouth but I must scream” (Ellison, 1963). These depictions mainly focus on life threatening malicious AI and not a more nuanced threat to humans in the workforce.

The focus of this project will be focused on the impact of AI on businesses and the humans who are involved in that business. Therefore the more societal aspects of the integration of AI will not be as heavily discussed as the business aspects. Yet the societal aspects and business aspects might overlap because of the nature of business and society. There are some well founded risks that AI could bring to into businesses and or society, the following are some concerns that have been brought up in the AI conversation (Marr, 2023):

- **Lack of transparency:** There could be an increase in lack of transparency because of the AI complexity in its decision making. It could make it difficult for humans to understand why certain choices have been made.
- **Biased AI:** Since AI is based on already existing data it could continue the already prevalent biases and discrimination. The training data should be carefully picked to create a more diversity driven machine.
- **Privacy concerns:** With the collection of so much of people's data there are already privacy concerns yet these concerns would be amplified by the fact an AI could use that data more effectively than a human ever could.
- **Data security:** AI could make it easier to misuse the already existing computers

and the sensitive data that is encrypted. This would cause large security risks in many companies.

- **Unfair advantages:** Because AI can be such a powerful tool that would mean that those who have access to it might gain too large of an advantage to others causing an unfair and unhealthy concentration of power. This unfair divide of power could also be the case for more economic inequality.
- **Over reliance on AI:** The advantages might cause humans to overly depend on AI, this could be a risk because of human loss of capabilities. If the AI would stop working for a reason it would mean that many processes will fail.
- **Job automation:** One of the more popular fears that AI integration brings is the automation of certain jobs causing large scale job loss.
- **Legal issues:** Legal and regulatory challenges will arrive because of the sudden arrival of AI's larger integration. Legal and regulatory processes tend to take more time than the implementation of new tools in processes, therefore the use of AI could go unchecked and create injustice and dangerous situations.
- **Human connection:** If AI takes over too much of the roles that humans have right now it could take away the human connection humans share with each other.
- **False information:** The ability to mimic humans can create the opportunity of misinformation and manipulation. AI-generated content, such as deep fakes, can contribute to the spread of false information and manipulation of public opinion.
- **Unknown consequences:** As before mentioned in chapter 3.2.1 there is still a lot of uncertainty around the impact of AI, this means there could be unintended consequences. When a consequence is unintended there could be little time and or resources to address these consequences properly.

To make sure of ethical and safe integration of AI systems in businesses these risks should be taken into consideration and reduced to a minimum and the aforementioned benefits should be leveraged to their maximum potential.

3.3 - Artificial intelligence's impact on businesses

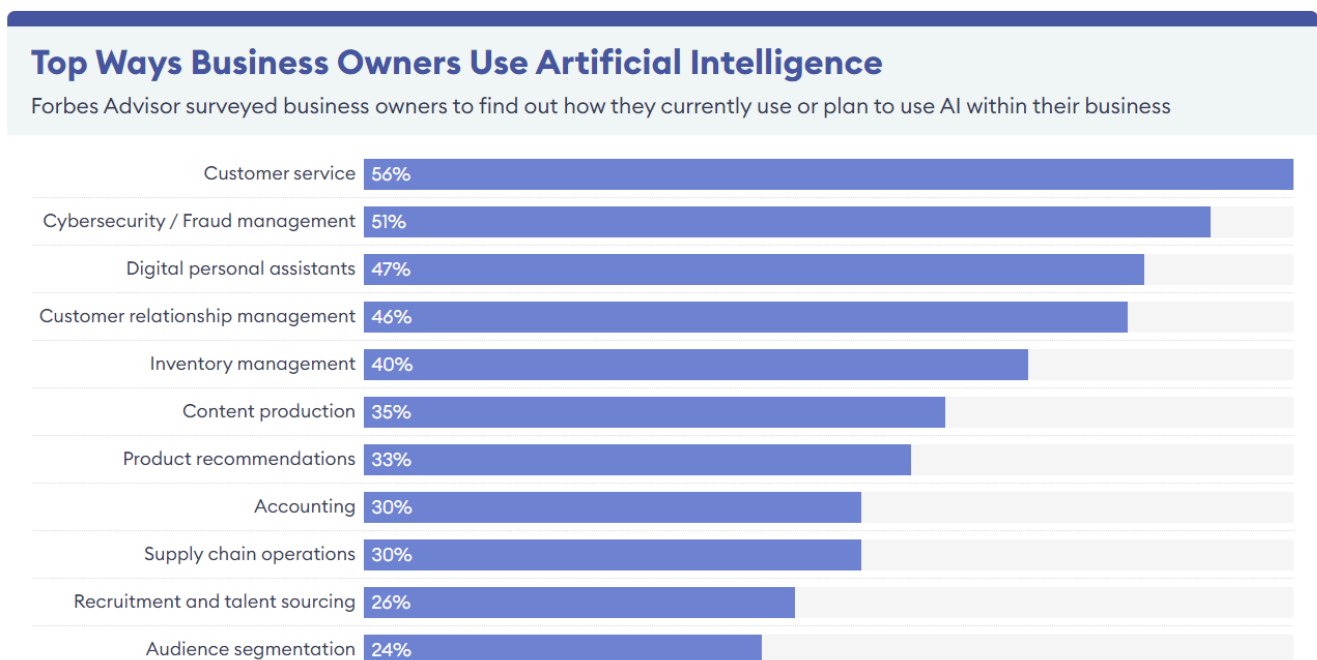
3.3.1 Current integration of AI in businesses

As aforementioned AI is not an entirely new phenomenon. Even though it is becoming more prevalent as of writing, AI already has been integrated in business to some extent. Therefore businesses are continuing and increasingly embracing AI to enhance and optimize their operations as found by the Forbes Advisor survey. This survey shows that

AI is being used across a multitude of different areas. Customer service being the most popular application area adopted by 56% of respondents. In addition, 51% of businesses are using AI for cybersecurity and fraud management. For these two areas AI has crossed the line from minority use to majority use, it is therefore more common that businesses use AI in these areas than that they don't use AI.

There are also other notable uses for AI in digital personal assistants (47%) , customer relationship management (46%), inventory management (40%), and content production (35%). In addition businesses are using AI for product recommendations (33%), accounting (30%), supply chain operations (30%), recruitment and talent sourcing (26%), and audience segmentation (24%). These numbers show that AI has already found its way into businesses and this trend is expected to grow in the near future (Haan, 2023). In figure 3 an overview of these numbers are displayed.

Figure 3: Top ways business owners use artificial intelligence (Forbes, 2023)



The integration and possibilities AI brings to a company are linked to the type of business a particular company is. Businesses who provide more analog and labor intensive services will notice the influence of AI less than a more technology based business. Yet both businesses will be able to feel the effect by the before mentioned use cases because of their variety in application and existing prevalence in many businesses.

3.3.2 Possibilities of impact of AI in businesses

AI's existing presence and applications in companies will continue to grow yet there will also be new applications with the increasing capabilities and availability of this technology. In an analysis and forecast by the EIU's Country Analysis service, unmatched global insights were uncovered. The political and economic outlook for nearly 200 countries was used to help identify prospective opportunities and potential risks. The insights that were found are focussed on where AI could possibly have the largest predicted impact. These six areas are the following (Howey, 2023):

- **Farming industry:** AI is impacting the future of farming by using agricultural robotics, soil and crop monitoring and predictive analytics. Companies like John Deere and Monarch Tractor lead the way in this farming technology revolution.
- **Automotive industry:** The automotive industry is experiencing the transformative influence of AI in a multitude of different areas. These areas are: design, production, vehicle maintenance and autonomous driving. Companies like BMW, Tesla, GM, Cruise, Waymo, and Pony.ai are leading at this automotive AI transformation.
- **Logistics industry:** In logistics and retailing AI is going to play a large role with companies like Amazon and Walmart using predictive analytics to streamline operations. This means that they better predict what is going to be bought and needs to be in stock therefore improve inventory management, and enhance supply chain transparency.
- **Energy industry:** AI is vital for grid management and efficiency in the energy sector, particularly in handling the unpredictability of renewable energy sources. While the electrification of goods and the rise of electric vehicles require a flexible power network, with AI helping with real-time monitoring and response.
- **Financial industry:** The financial industry already uses and could further build on AI for fraud detection and automated investing. Companies like Visa, Mastercard, PayPal, and investment firms deploy machine learning algorithms to increase the level of security and to enhance their investment strategies.
- **Healthcare industry:** In healthcare AI is used for drug discovery, diagnostics, and resource allocation. Companies like Pfizer, Genentech, Sanofi, GE HealthCare, and health apps are using the increasing capabilities and influence of AI to accelerate research, personalize treatments, and improve patient care.

In combination with the more general uses of AI it becomes clear that some companies could benefit enormously from integrating AI more in their day to day. Yet this integration comes with a transformation that the company must go through in order to not only benefit optimally but also reduce potential risks with this change.

3.4 - Managers influence and practices

3.4.1 - Definition and roles

When designing for managers it is crucial to understand what a manager has to do and what they are responsible for. One crucial aspect of a manager's role is maintaining staff. They are responsible for strategically recruiting, selecting, orienting, and training employees. Through careful recruitment and selection processes, managers identify candidates who align with the organization's needs and culture. They also oversee comprehensive orientation programs to help new employees quickly adapt and succeed in their roles. Ongoing training initiatives ensure that employees continuously develop their skills and stay updated with industry advancements.

Creating a safe, secure, and legal work environment is another critical responsibility of managers. They implement safety protocols, address potential hazards, and ensure compliance with laws and regulations. By focussing employee well-being, managers create a culture of trust, satisfaction, and productivity while minimizing workplace incidents.

Managers also play a role in creating opportunities for personal growth for employees. They could be offering mentoring programs, skill-building workshops, and career advancement initiatives that empower individuals to reach their full potential. These efforts could enhance employee engagement, retention, and help with the organization's overall growth and strength. Because working on these relationships is important, managers can not have too many or too few employees to manage. It is theorized that a manager can manage about 5 to 9 employees (Chin, 2018). This range of numbers is based on the psychology of George Miller, which states that people can only focus on 5 to 9 items (Miller, 1956). The manageability also depends on the manager and employees themselves. The relationship that the manager has with the employees will be a larger focus in the upcoming chapter.

Effective communication is crucial to accomplish results. Managers communicate clear job expectations, set performance standards, and provide constructive and honest feedback. They keep track of employee progress, identify areas for improvement, and recognize achievements. Through open and transparent communication channels, managers inspire employees to excel, foster accountability, and drive organizational success (Reh, 2020).

3.4.2 - Influence on employees

In many cases a manager has a large influence on all the employees that sit in their team. Handling the team as effectively and efficiently is crucial to deliver desired results that are not only beneficial to the team but to the entire company. The performance of a company or organization is therefore tied to the job performance and productivity of its

employees. The managers have an effect on this by their relationship with their employee.

Research was done on 40 administrative employees to see how they perform and what are the causes of their performance. The key findings revealed that the relationship between managers and employees undoubtedly influenced employee performance and productivity. When an employee has a positive relationship with a manager it would increase motivation and performance. In the opposite direction a negative relationship causes poor performance. The research also identified an overall negative impact and high levels of employee dissatisfaction caused by so-called “bureaucratic management style”. This style is based on a system of management that follows a hierarchy where official duties are fixed. This bureaucratic approach made employees less productive and caused worse work performance.

The study highlighted the significant role of the perception of the employee on their relationship with managers in predicting job performance. To promote employee performance and productivity the study has several recommendations. The recommendations include:

- Providing manager-employee training
- Organizing team-building activities
- Implementing skills development programs for managers
- Offering employee rewards and recognition
- Creating more opportunities for communication
- Prioritizing employee well-being

It concludes with the insights that a strong and positive working relationship between employees and managers is crucial for enhancing organizational performance, as it directly impacts employee job performance and productivity. Using the suggested recommendations can help with a healthier work environment and improve overall performance within a company or organization (Dlamini et al., 2022).

To further understand the employee a research project was done by Bailyn et al. This project team worked with a company known for leading-edge employee benefits to find out why employees were not using those benefits. The authors concluded that there was a link with perspective in the employee's personal life. The authors propose a three steps approach that can be used to improve work-practices. The three-step approach is as follows (Bailyn et al.):

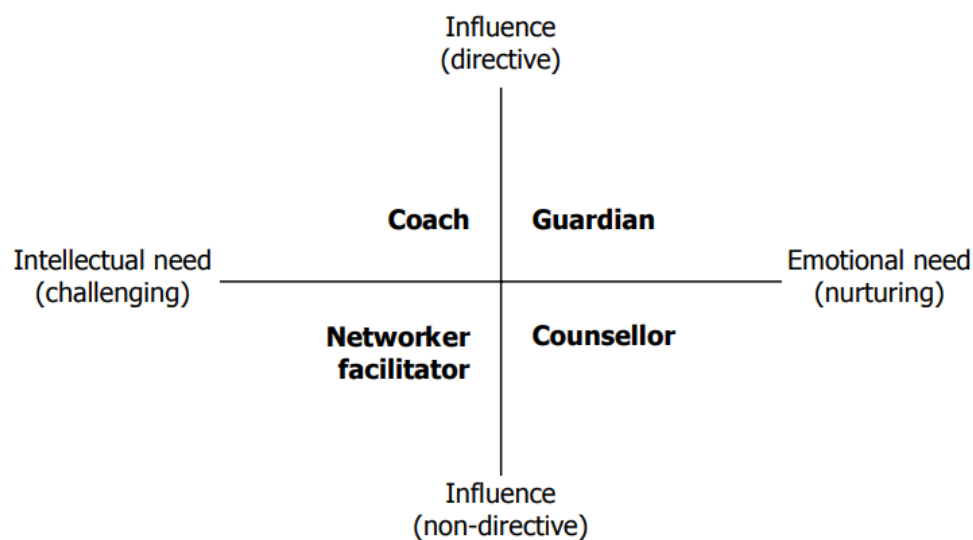
1. View work from the perspective of personal life
2. Identify ways to change work practices to improve effectiveness and enhance work and personal life
3. Implement work-practice improvements

These steps can be used in addition to the aforementioned recommendations, all pieces of advice mentioned will be in addition to a larger understanding of the relationship a manager has with their employee.

As previously discussed there are many roles that a manager has to handle in order to live up to the standards set and be successful. Yet there is not one type of manager, not one way of taking care of employees and the responsibilities that come with the function.

David Clutterbuck suggests that there are four types of management or mentoring that are defined by two dimensions. These dimensions are defined by the level of directive influence the manager has and the type of need it fills for the employee. The four types of management as seen in figure 4 are: coach, guardian, networker facilitator and counselor.

Figure 4: Dimensions of mentoring (Clutterbuck., 1998)



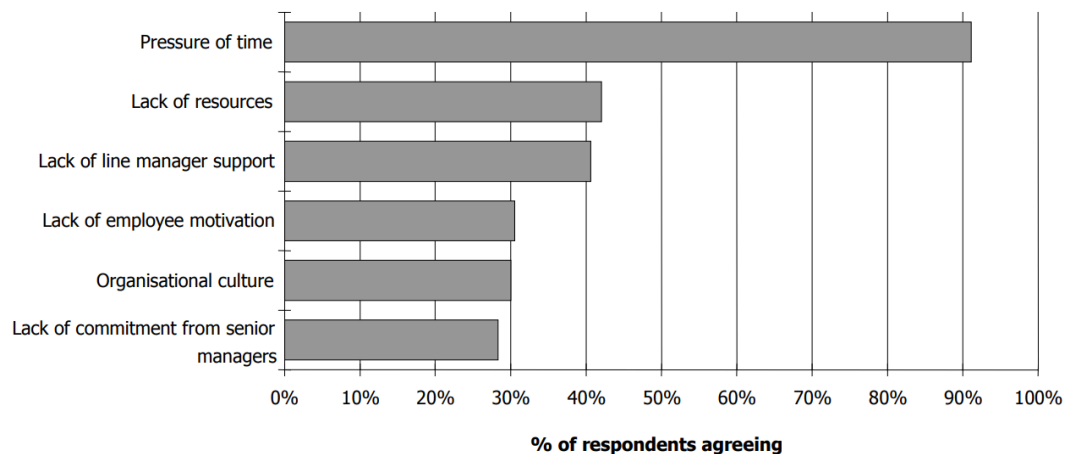
Each of these different managers have their different strengths and weaknesses. It is important to understand that a manager can and perhaps should be all these types of manager to accommodate the needs of the different employees. In further explanation of the four types could be defined as the following:

- **Coach:** The role of a coach is giving out tasks to employees, observing their performance and giving feedback. The more modern approaches focus on the communication and ownership of the learning process. Yet the coach still plays a very important role in guiding and facilitating the process by means of observation and questioning.
- **Guardian:** The guardian takes the role of authority and promotes learning by making sure that the employee has opportunities to engage in projects that are valuable to them. The guardian is someone who gives advice and who guides learners in navigating the political and practical aspects of their learning journey.
- **Networker/Facilitator:** The networker/facilitator aims to empower learners to become self-reliant as quickly as possible. When in the networker role they assist in the following: expanding their knowledge, expanding their connections, broadening their access to information and giving more access to resources. As facilitators they guide learners more through the learning process, creating a supportive and finally conducive environment for their development.
- **Counselor:** Counseling is a so called “learner-centered” approach that offers support in the learning process. Creating the right environment and mindset is important for effective learning. Counselors give their employee support by helping them with the following: exploring and overcoming their fears, finding the right motivations and overcoming obstacles that hinder progress.

These roles each contribute a different approach to learning and development. Each role is playing their own part in supporting employees with their growth and progress in an organization (Clutterbuck, 1998).

Even when a manager gives the right type of manager/mentoring type to a given employee that is not the only key to success. There are many outside factors that influence the impact a manager has on their employee. These factors are displayed in figure 5. It is shown that something as simple as a lack of resources has such a large impact. Also the line management, which acts like a sort of linking pin between employees and upper management can cause some trouble. The largest is by far with 91% of participants considering a barrier for effective learning is the pressure of time (CIPD, 2003).

Figure 5: Major barriers to effective learning (CIPD, 2003)



3.6 - Employee satisfaction and purpose

3.6.1 - Satisfaction

The definition of an employee is perhaps more easily defined by the work that they do instead of the definition itself. A manager will always manage no matter what industry they are in, yet an employee will have a variation of different roles depending on their role in the organization. Also managers are employees of the company they have been hired by if they are not an independent contractor.

Taking care of the employees to enhance their job satisfaction is not just to make them happier in life, it is a smart and profitable business decision to take care of employees. According to Branham (2005), "Gallup studies show that businesses with higher employee satisfaction also have:

- 86% higher customer ratings
- 76% more success in lowering turnover
- 70% higher profitability
- 44% higher profitability
- 78% better safety records."

There might be an arguably more obvious reason to keep the employees of a company or organization satisfied, employees withdrawal from the company or organization. This withdrawal is caused by dissatisfaction with the job and company. This withdrawal can range from mild to severe effects. Examples of the effects are the following:

- Tardiness, in showing up for work and coming back from break
- Lack of interest by the employee in their responsibilities
- Taking care of personal matters while at work
- Spending time on social networks
- Diminishing job performance

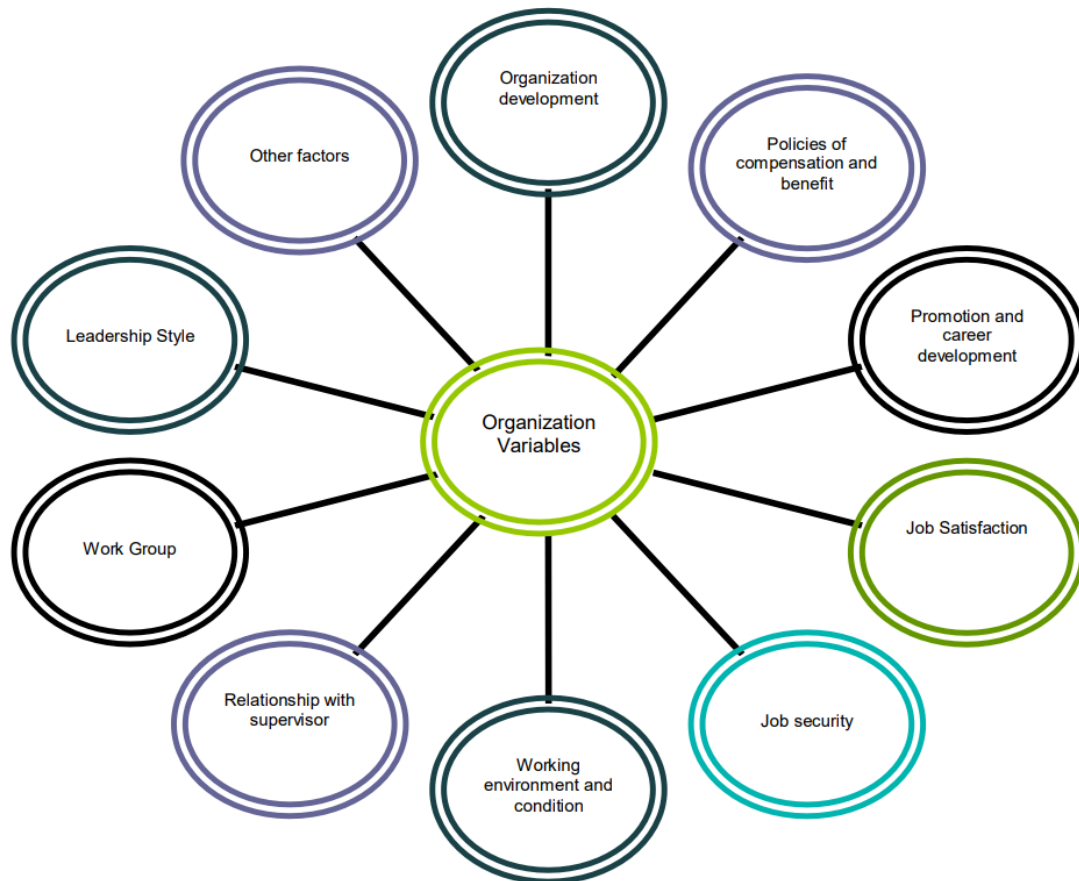
One of the most unfortunate consequences of job dissatisfaction is for the employee to leave the company or organization entirely. Not only is leaving a large consequence but also a common one as a result of dissatisfaction. As Kaslowsky and Krauze mentioned: “the heuristic model posits that thinking of quitting is the most probable outcome of job dissatisfaction” (Koslowsky & Krausz, 2002).

Knowing that employee satisfaction is important is the mere beginning of a successful transformation, understanding how to satisfy the needs of employees is the next step. According to the IOSR Journal of Business and Management there are organization and personal factors that contribute to the satisfaction of an employee. The organization of the employee determines a large part of the satisfaction. The employees spend a major part of their time living in an organization so it makes sense that employees are invested in the satisfaction they experience. There are a number of organizational variables that determine employee satisfaction. The employee satisfaction in the organization can be increased by understanding and managing the variables. These ten variables can be seen in figure 6 (Sageer et al., 2012):

- Organization development
- Policies of compensation benefit
- Promotion and career development
- Job satisfaction
- Job security
- Working environment and condition
- Relationship with supervisor
- Work group

- Leadership style
- Other factors

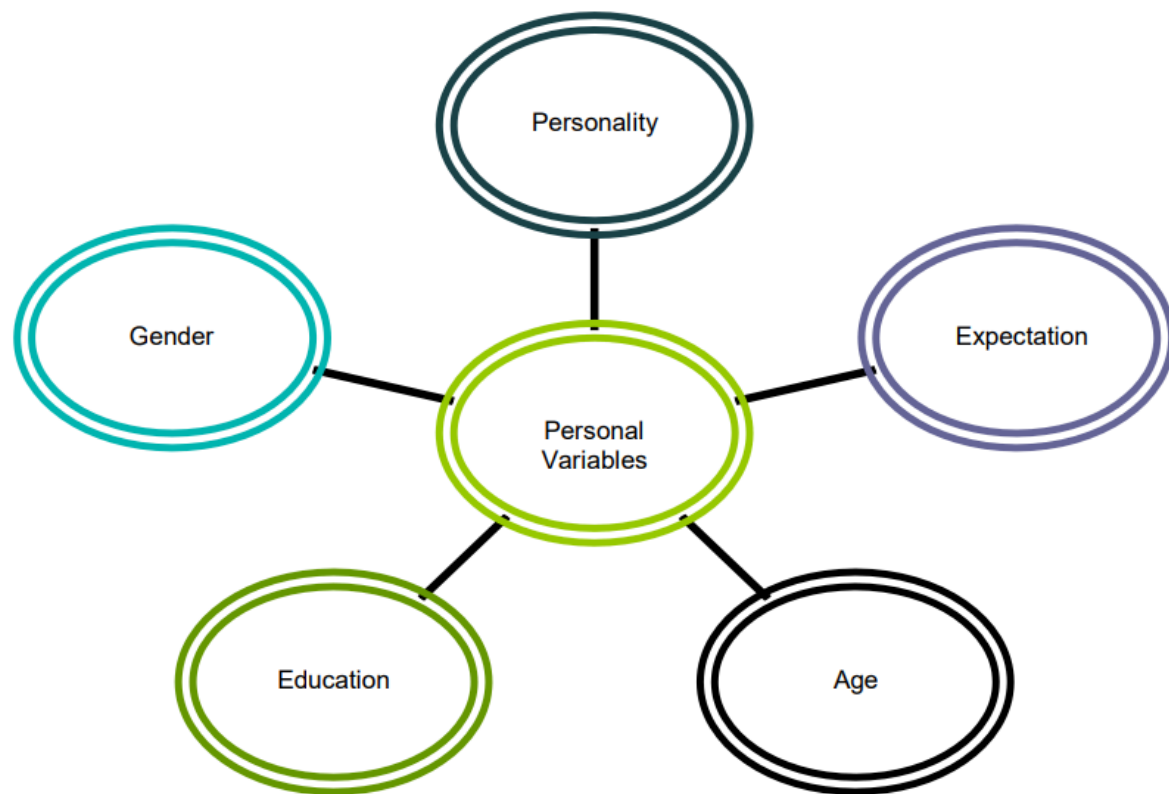
Figure 6: Organizational variables for employee satisfaction (Sageer et al., 2012)



The personal variables also determine a lot in maintaining the motivation of the employees and the employees ability to work effectively and efficiently. Employee satisfaction can be related to psychological factors and so numbers of personal variables determine the employee satisfaction of the employees. As with the organizational variables, employee satisfaction in the organization can be increased by understanding and managing these variables. These five variables can be seen in figure 7 (Sageer et al., 2012):

- Personality
- Expectation
- Age
- Education
- Gender

Figure 7: Personal variables for employee satisfaction (Sageer et al., 2012)



For this project the variable will be taken into consideration if the upcoming AI transformation will have an effect on the variable. As an example, an issue before mentioned could be considered an organizational variable that could be affected by AI, which is job security. A personal variable could be considered age, as age influences adoption of new tools and ways of working.

3.6.2 - Interaction with AI

The impact that AI has on the businesses will also be felt by their employees. It is predicted that AI is going to transform human roles from the more mundane and labor-intensive tasks to focusing on the final stages of projects and effectively communicating options and outcomes to others. In this case AI will act like an assistant that takes up chores that require little talent yet do take up time. Furthermore, AI can enhance decision-making by using data analysis at a much quicker pace than humans are able to do. AI can therefore offer valuable insights and personalized recommendations. As an example of these types of data analyses: AI-powered algorithms can analyze customer behavior to suggest tailored products or services.

That is why AI can provide a competitive advantage by streamlining and optimizing operations by providing such things as: market trend insights, enabling businesses to make informed decisions and respond swiftly to market changes. Yet like most transformations this is not completely without sacrifice. Incorporating AI into business operations requires significant technological investment and expertise in building and maintaining AI systems. As discussed earlier, with a well-defined strategy, many businesses can use the benefits of AI to their advantage (McLaren, 2023).

Because the integration of generative AI is relatively new there is a lot of uncertainty around the topic and its eventual effect. Yet there have already been some studies that shine some light on the early adoption and opinions of generative AI. In two studies conducted by a collection of different universities with over five hundred US working adults it is shown what they are using ChatGPT for in a professional setting. Roughly the following percentages of the participants have already used ChatGPT in the following ways:

- 42% of the workers are using it for researching a topic or generating ideas
- 32% of the workers are using it for drafting messages
- 26% of the workers are using it for drafting longer documents, such as reports
- 22% of the workers are using it for editing text

In the short time that generative AI has been available it is already making a large impact, as for some tasks almost half of the US workers in this research have used ChatGPT. Again it is important for the employees to have good managing policies above them to use generative AI in a positive manner. Because employees in organizations with generative AI policies view these rather policies positively. Employees who are aware of an organizational policy about generative AI generally believe it has the following benefits to their work: it has supported more comfort in using ChatGPT for work, has improved trust, has improved efficiency and has provided legal protections (Cardon et al., 2023).

In the research those who are early adopters were generally more positive about each of these benefits of organizational policy than those who are not using ChatGPT. Most early adopters of generative AI that work in organizations without generative AI policies want more guidance about the usage of ChatGPT and other forms of generative AI. Most early adopters believe an organizational policy would make them more comfortable using ChatGPT (61%), that it would increase trust (56%), and that it would improve efficiency (66%) (Cardon et al., 2023). This can suggest that early adopters are in general more positive about the things that they are adopting as they are more comfortable with risks

(CFI Team, 2022). Yet this might also signify the fact that this new technology has to dawn on most people for it to be picked up, therefore someone in a leading position can take advantage of this by being ahead of this particular transformation.

3.7 - Conclusion literature review

3.7.1 Summary and conclusion: Artificial Intelligence

In this chapter intelligence is explained and the need for understanding it. AI is defined as man made intelligence that can act like human intelligence and perform tasks that require some form of intelligence. The "Turing Test," proposed by Alan Turing, is a way of evaluating if this particular machine intelligence can mimic human behavior. AI has been changing fast over the years. As of writing this in 2023 OpenAI's "ChatGPT" has gained significant attention for its language processing capabilities.

AI can be created using two types of approaches, these approaches are handcrafted knowledge and machine learning. Handcrafted knowledge systems rely on human programmers to provide rules. Machine learning systems generate their own rules by the means of learning from data training. There are four types of categories of AI complexity: reactive machines, limited memory AI, theory of mind, and self-awareness. Each level represents increasing complex and capable intelligence. The final level of AI would be theoretical self-aware AI possessing human-level consciousness.

Achieving AI with self-awareness is challenging as even human consciousness remains to be fully understood. The possibilities and concerns surrounding AI are still being explored.

3.7.2 Summary and conclusion: Experts predictions on growth and impact of artificial intelligence

The predictions about the future of artificial intelligence are uncertain yet making predictions can still help prepare for what is potentially going to happen. As of writing this in 2023 the worldwide market share of AI is expected to grow extremely in the coming years. AI experts were questioned about their opinion and predictions on the future of human AI. The outcome of a study with AI experts concluded that while there was no consensus on the exact timeline, most agreed it would not take more than a century for AI to reach its final stage, with some even expecting it within the next 50 years.

There are many opportunities and benefits that AI can bring to society and businesses. With AI being able to collaborate with humans to achieve significant performance improvements. Yet it is important to consider the specific circumstances in which AI would be advantageous. While AI can help with many tasks and processes it might not be suitable for all tasks.

Despite the benefits that AI brings there are concerns about AI integration. These concerns include: lack of transparency in AI decision-making, perpetuating biases in

existing data, privacy issues, security risks, concentration of power, job loss due to automation, legal and regulatory challenges, and potential for misinformation and manipulation.

To ensure ethical and safe integration of AI in businesses, it is crucial to address these risks and maximize the benefits that AI can bring. The uncertainty surrounding AI's impact means that unintended consequences should also be carefully considered and managed.

3.7.3 Summary and conclusion: Artificial Intelligence's impact in businesses

AI is not a new phenomenon; it has already been integrated into various businesses to enhance and optimize their operations. According to a Forbes Advisor survey, AI is already commonly used in the following places in businesses and organizations: customer service, cybersecurity, digital personal assistants, customer relationship management, inventory management, content production and more. Different businesses will feel the impact of AI based on the type of processes and tasks they perform. The employees of these companies will also feel a varied effect based on their role. Therefore its impact and application are noticeable and important for different industries.

The possible impact of AI on businesses are expected to grow as the technology advances. The areas where AI is predicted to have a large impact include the following areas: farming (agricultural robotics and predictive analytics), automotive industry (design, production, maintenance, and autonomous driving), logistics and retailing (inventory management and supply chain transparency), energy sector (grid management and handling renewable energy unpredictability), financial industry (fraud detection and automated investing), and healthcare (drug discovery, diagnostics, and resource allocation).

Like in other well handled transformation companies that embrace AI integration have the potential to benefit the most. Yet they must handle the transformation well to fully optimize the capabilities of AI and reduce the potential risks associated with this change.

3.7.4 Summary and conclusion: Managers influence and practices

Managers in companies and organizations have crucial responsibilities. These responsibilities include maintaining staff, creating a safe work environment and providing opportunities for personal growth. Effective communication is noted to be a key element to drive results and organizational success.

Research shows that the relationship between managers and employees significantly influences employee performance and productivity. A positive relationship also enhances motivation and performance while in the same vein a negative one leads to poor performance. To help promote better performance there are various

recommendations that are suggested. These recommendations include: providing training for managers, organizing team-building activities, and prioritizing employee wellbeing.

Different management or mentoring types are identified based on their directive influence and the type of role they play in their employees' work life. These types include coach, guardian, networker/facilitator and counselor. Managers should adapt their approach to align to the needs of their individual employees.

Furthermore there are external factors that can impact the effectiveness of a manager. The factors include: a lack of resources, line management and time pressure. Understanding these factors is crucial for supporting employee growth and development within an organization or company.

3.7.5 Summary and conclusion: Employee satisfaction and purpose

Perhaps with how many employees a company has it is not suppressing that employees are key for the success of a business. Research shows that higher employee satisfaction leads to better customer ratings, lower turnover, higher profitability, and improved safety records.

Employee dissatisfaction can lead to various negative consequences, such as decreased job performance, tardiness, and ultimately, employee withdrawal from the company. To enhance employee satisfaction organizations should look at the two variables: organizational and personal variables. Organizational variables include: development, compensation, promotion, job satisfaction, job security, working environment and leadership style. Personal variables include personality, expectations, age, education, and gender.

The impact of AI on employees is still being discovered yet it is predicted that AI can streamline operations and provide valuable insights and recommendations. Early adopters of generative AI have shown positive views towards its usage with the right organizational policies in place. Yet organizations do have to invest in technological expertise to effectively integrate AI into their operations.

4 - INTERVIEWS

The purpose of the interviews is to get valuable insights from the stakeholders on how they perceive the subject of generative AI. The overall results of the interviews can be found in appendix A. Be aware that these results are in Dutch because of the participants' preferred language.

4.1 - AI experts

4.1.1 - Purpose interview AI experts

The purpose of interviewing an AI expert is to gain valuable insights, expert perspectives, and in-depth knowledge about the challenges and opportunities associated with implementing AI in the workforce. Unfortunately the expert interview participant was limited to one, due to availability. Yet the insights are still useful because of the topics and knowledge provided by the expert. To confirm and expand on the insights gathered from the literature review I considered the interviews necessary. The questions asked can be found in appendix B. Following insights are sought in the interviews:

- Challenges of AI integration
- Tasks and processes that come with AI integration
- Advice on AI integration
- Predictions on growth
- Opinion on the usage of AI
- Advice on directions for tool
- Further insights of AI

4.1.2 - Conclusion interview AI experts

In summary, the AI experts engage themselves and advise managers and employees to engage in numerous training sessions and courses, with a particular focus on learning prompt engineering for generative AI. The most popular use case of AI is to enhance time efficiency and productivity, depending on specific use cases. The AI experts also advise that there should be more education on how to utilize prompt engineering, explaining what it is and its potential use cases.

While they acknowledge potential biases, they are not currently concerned about job displacement. They believe that AI can help address the tight job market because individuals can achieve more on their own, although they emphasize the need for human involvement and the importance of addressing privacy and security aspects of AI. The growth of AI will come at a slower pace because of the technical limitations we have at the moment, however there will probably be more specific company AI's in the future according to experts.

Furthermore, there is a concern about Sustainable AI, with a significant energy consumption issue involving 300,000 computers continuously running for training purposes, which is equivalent to keeping an entire city like Nijmegen powered up continuously. The costs and time associated with understanding hallucinations and biases. Proper education about what AI can and cannot do is crucial for proper use.

4.2 - Managers of companies

4.2.1 - Purpose interview Managers of companies

The purpose of interviewing a manager is to gain valuable insights, expert perspectives, and in-depth knowledge about the challenges and opportunities associated with managing employees. To confirm and expand on the insights gathered from the literature review the interviews are necessary. A manager from an IT consulting firm and a government manager were interviewed. The questions asked can be found in appendix C. Following insights are sought in the interviews:

- Managing style and experience
- Experience level with AI
- Comfortability with AI
- Opinion on the usage of AI
- If there are guidelines and how they are enforced
- Advice on directions for tool
- Further insights of managing with AI

4.2.2 - Conclusion interview Managers of companies

The managers that were interviewed mostly used generative AI in personal cases and have not yet integrated it much in their team. They see the value in setting up multiple drafts of their project using AI but not more than that at the moment. This is also because their level of confidence in using AI is not that large yet.

In the interview some express they see hope in the future with AI when it comes to time savings and efficiency gains but raises concerns about the possibility of validation without experienced individuals. They emphasize that one of the use cases they see is making work easier by overcoming writer's block and or using it to brainstorm. There are however also concerns about the increasing difficulty of distinguishing between real and fake information on the internet, making continuous verification necessary to make sure that no wrong information is used. The managers also mention the need for common sense and acknowledge their team's ability to handle these challenges.

They mention that there were no specific instructions or limitations given by their respective companies on how they should deal with AI, only the awareness of the existence of the technology, with many training sessions provided. It is mentioned that

these guidelines are in the making as of writing this. This shows how new this movement is and the possible need for this tool. Subjects that the managers hope to see more in the future is creating more illustrations with AI and writing drafts more assignments with AI. It is noted to the author that when creating a tool for managers it should be very easy to use and available for all different types of people. There is much variety in the target user.

4.3 - Employees in companies

4.3.1 - Purpose interview employees

The purpose of interviewing employees is to gain valuable insights, expert perspectives, and in-depth knowledge about the challenges and opportunities associated in both interacting with managers and using AI at the workplace. To confirm and expand on the insights gathered from the literature review the interviews are necessary. The questions asked can be found in appendix D. The profile of the employees ranged from business development to music management. Following insights are sought in the interviews:

- Own experience with managers and their influence
- Experience level with AI
- Opinion on the usage of AI
- If there are guidelines and how they are enforced
- Opinion on proposition integration of AI and how it is handled at their company

4.3.2 - Conclusion interview employees

Interviewees display that they have awareness of ChatGPT and its capabilities, expressing enthusiasm for its effectiveness in translation, text generation and image generation. This enthusiasm comes from their recognition of AI's potential, as noticed by ChatGPT, to streamline various tasks and make them easier. They use generative AI for many tasks, such as creating templates, conducting intricate legal research, crafting compelling pitches and performing translations. AI is seen to them as a tool to save time, reduce repetitive tasks, and stimulate creativity. Their preference for ChatGPT over Google Translate for translation purposes shows their trust in its capabilities.

Companies have different approaches to AI integration. One company, despite a temporary ban, is actively working on creating and enforcing guidelines, showcasing a need for AI adoption. Another already has AI guidelines prominently displayed in their lobby. However, another company appears to rely extensively on the founder's personal enthusiasm for AI, with no formal guidelines in place.

While interviewees express enthusiasm, they also voice valid concerns. They worry about the challenge of distinguishing factual information from misinformation in an era where AI can generate highly convincing content. Additionally, there's apprehension about overreliance on AI, potentially leading to complacency.

Concurrently, they hold high hopes for AI's potential. Anticipating improved communication, advanced image generation, and increased productivity, they foresee AI streamlining tasks that were once labor-intensive or complex.

Confidence levels in using AI vary a bit. Some admit to being less confident, especially in areas like prompt engineering, which remain relatively unfamiliar. Others are eager to enhance their AI skills, recognizing AI's potential as a valuable tool in their work. How managers deal with employees and AI varies. Some CEOs actively use AI tools, showing direct engagement with AI technology. Yet others have no AI usage with managers , showing differing levels of involvement and or enthusiasm in AI integration..

Finally, there's increasing awareness of copyright issues pertaining to AI-generated content. Questions surrounding ownership and regulation in the domain of AI-generated texts and creations are gaining prominence.

4.4 - Coding interviews

For distilling insights of the interviews a method called “coding” has been used. Here Remarks and answers are clustered in themes that keep on recurring and are therefore relevant to the project. The table only shows if the codes showed up more than once, the complete coding workplace with all the codes can be found in appendix E. The code that is distilled will be ranked in table 1 by frequency. Also a variety number is attached, this number is to show how many different types of respondents had that specific code. The type of respondents are: AI experts, managers and employees.

Table 1: Interview codes

Nr.	Code	Frequency	Variety nr.
1	Working better/more efficient	8	3
2	No guidelines (from company)	6	2
3	Fan of generative AI	6	2
4	Recommending practice	5	3
5	Internal guidelines (from company)	5	2
6	High experience generative AI	5	2
7	Creating more visuals with generative AI	4	2
8	Low experience generative AI	4	2
9	Low confidence generative AI	4	2

10	Improve language/communication (generative AI)	4	2
11	Brainstorming with generative AI	3	2
12	New type of fake news with generative AI	3	2
13	No human oversight	3	2
14	Unforeseen consequences	3	2
15	Using common sense	3	2
16	AI biased system	2	1

4.5 - Conclusion interviews

In addition to the codes there are also some general conclusions that can be drawn from the interviews. These conclusions can be identified in five separate subjects. These subjects are:

- **Experience with generative AI:** There is a difference in everybody's level of experience and confidence working with generative AI.
- **Purpose of general AI:** People use generative AI for many different purposes, there are some that are more common like: text generation, brainstorming and image generation.
- **A positive outlook:** Many participants discussed more positive than negative results of generative AI integration in their day to day work.
- **Rules of generative AI in Businesses:** There is a difference in the participants' companies on how they handle the integration of a generative AI and the guidelines/rules that come with it.
- **Unforeseen consequences :** Outside the more commonly known implications there are also many unforeseen consequences that generative AI could bring.

5 - DESIGNING THE TOOL

The vision is to develop a tool designed to empower managers by enhancing their awareness, insights, and competence in effectively integrating and managing generative AI within their teams. The tool aspires to offer personalized advice for the integration process, recognizing the unique challenges and opportunities each manager may face. In this chapter this vision will be further explored.

5.1 - Design directions

The base direction of the tool is based on the interviews and literature research that have been conducted. The literature has shown that it is a growing field where much is unknown and therefore there is a huge opportunity to educate and inform. The inform and educate angle is also very important to execute properly because of the varied expertise and or experience people have with generative AI. This variation of expertise has been brought forward by the interviewees answers and experiences. This education and information angle of the tool is also reflected in the interview as training is recommended and guidelines are not yet provided by some companies.

This education and informing of the possibilities with generative AI would only be interesting if there was also interest in integrating generative AI more in the workforce. The growth of generative AI has been discussed in the literature review to be massive, the interviews seem to confirm the data by responding positively to the idea of integrating generative AI into their work.

Because of the gathered insights the following design vision has been created:

“To create a tool that assists managers to gain awareness, insights and competence in how to integrate and deal with generative AI in their team”

The purpose that the tool will have is divided into the following statements, these statements will help guide the design towards the correct outcome:

- The tool should get managers thinking about integration implications (awareness).
- The tool should help train the manager into becoming more competent with generative AI.
- The tool should give advice for their personal integration process.
- The tool should save managers time by providing advice and research.

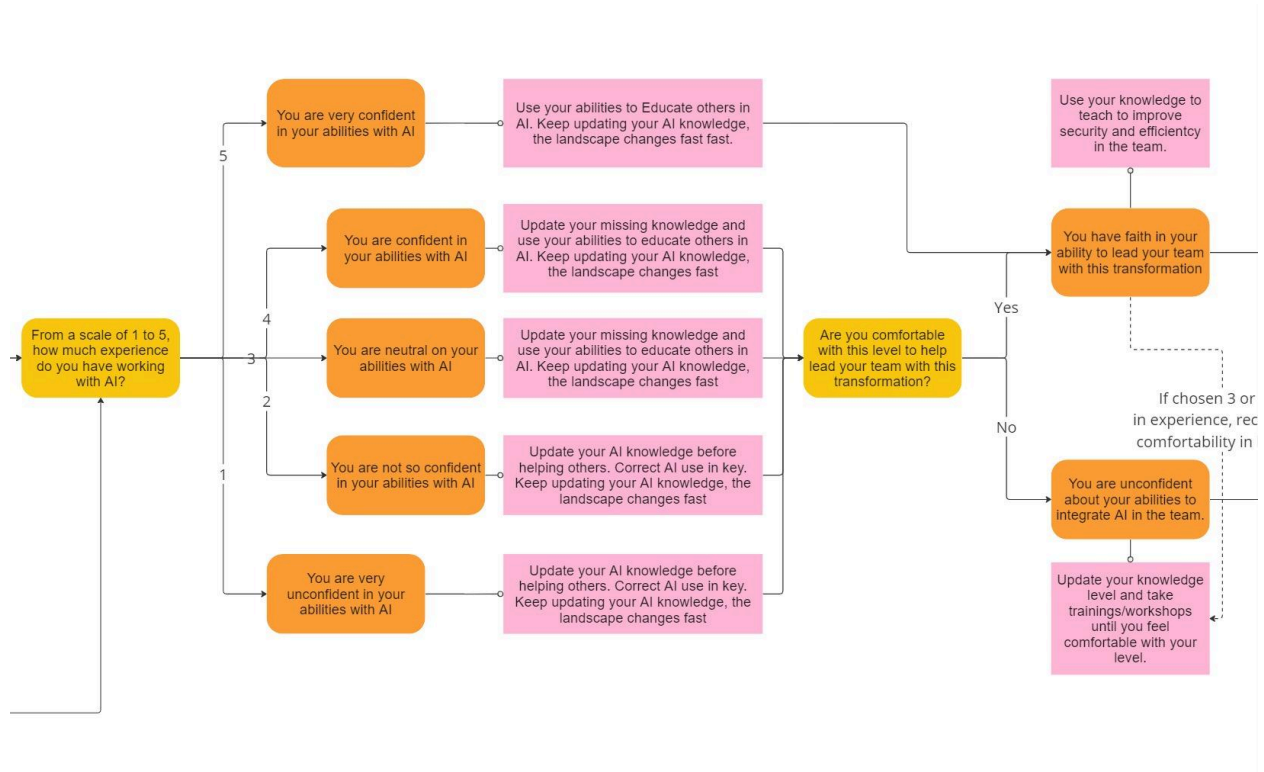
- The tool should provide insights to the managers about generative AI risks and benefits.

The design vision and the purposes the tool should fulfill will be taken further and evolve during the design process based on further exploration.

5.2 - Creating a first concept

The first concept revolves around a flowchart that would have been the skeleton for the design. A broad version was already created before the project took shape, this version can be found in appendix F. This flowchart is the first iteration of the tool and is designed to align with the earlier discussed vision and diverse purposes of the tool. It involves asking specific questions to managers, and then providing relevant advice based on their responses. A part of this tool in figure 8 shows the process of asking questions, the corresponding advice and following steps.

Figure 8: Managing status part of the first concept for the tool



The yellow boxes show questions, the text on the arrows signifies responses by the manager, the arrow shows the direction that the response will offer, the orange box is the statement based on the answer of the manager and the pink boxes show advice based on the statement. The pink boxes collected at the end of the usage to combine a complete over encompassing advice. These questions are created by insights gathered from the literature review and interviews.

The aim is to create an online tool that navigates the manager through multiple questions that will give advice throughout the usage and provide a complete summary of advice at the end of the use. The tool covers crucial aspects, such as: Data security, employee status, managing status, managing styles, different possible actions, ethical implications and environmental implications.

What is interesting is that this tool will give tailored advice based on the response of the manager. It will adapt based on user input, offering personalized suggestions and tips that will fit to their unique needs. Because the goal is to develop an interactive tool that assists managers to gain awareness and insights in how to integrate and deal with generative AI in their workforce.

5.3 - Co-design session

5.3.1 - Purpose co-design session

After creating the first concept it became apparent that even though this concept was well informed and created there was far more to explore before delving into refining this particular concept. To achieve more exploration and insights based on the already created design vision and tool purposes a co-design session was organized and performed.

One of the goals of the co-design session was to distill important topics the tool should discuss, important features the tool should have and insights that should be kept in mind when creating the tool. The other goal was to get more ideas/concepts from the participants to either compare, combine or use in the end tool.

5.3.2 - Participants co-design session

The co-design session had five participants, these participants were all students that were considered for their knowledge in certain areas. Within these participants expertise were: integrated product design, strategic product design and law. The participants varied in nationality from either Dutch or Indian, this was done hopefully to get some more varied perspectives. These two nationalities were not specially chosen but were available for the co-design session. The ages of the participants ranged from 23 to 27 years old, in retrospect it could have been useful to perhaps increase the age gap to create a more varied conversation.

5.3.3 - Protocol co-design session

A visual representation of the following protocol can be found in appendix G. The co-design takes place at TU Delft in a private room where all five participants and the group facilitator work. First the group facilitator who is also the project leader and author of this project first gives a presentation to let the participants understand the context. This presentation can be found in the appendix H. All participants have a laptop where a shared Miro document is opened. Miro is a platform where someone can work

together on a shared whiteboard with text, post-its images etc. They work on this shared Miro document. The co-design session was split up into two sections to accommodate for the two separate goals.

With the first goal being an exploration on important topics, features and insights the first module of the co-design session is focussed on that. The participants received an individual canvas as seen in figure 9, where they had room to place post-it notes and write text. The participants have to put down what topics, features and insights they would consider important for the tool on their personal canvas. There are already provided post-its with topics, features and insights based on the literature review and interviews, this list can be found in appendix I. The post-it notes are color coded to indicate whether what they are writing down is an important topic, feature or insight

Figure 9: Personal canvas co-design session

Name

Type here..

TOPIC

Cyber Security

sustainability

Job security

Managing types

Policies

Laws and regulations

Image generation

Text generation

Fake news

Human oversight

Ethical considerations

INSIGHT

It should be user friendly

It should not take up too much time

It should be understandable for all different types of managers

It should have some form of longevity

FEATURE

Gives advice directly

Gives advice afterwards

Makes a summary of advice

Give list of important topics in generative AI

Should be online accessible

Has to be physical

Has to be digital

Is able to share results

Post-its

Comment
Type here..

While the participants were working the group facilitator was walking around making notes and asking questions. After the first module is finished the participants present their results to each other and the group facilitator and have a short discussion. This discussion is voice recorded if there was going to be any need for clarification in the future. A small break is held before heading in the second and final module.

The second goal being explored is creating more concepts and or ideas. This is achieved in the second module of the co-design session. The participants are divided into two groups that both create a concept of a tool based on their combined personal canvases. They work on a team canvas as seen in appendix J. After completing their concept they would have a chance to present and explain the concept to the other team and the group facilitator.

5.3.4 - Results co-design session

One part of the results of the co-design session are five different personal canvases which each individual participant has put down their thoughts on what the most important topics, features and insights are and why these are the most important. These individual canvases can be found in appendix K. Another part of the results are two different concepts created by two groups of participants. These concepts made in a team canvas have been explained in writing and in presentation form, both are collected.

The two concepts that the groups have created have a lot of similarities. This can be the case because they received the same assignment or that the case presented was too narrow and pushed them to think in a similar manner. These concepts and their team canvases can be found in appendix L.

The concepts were both softwares that were integrated into the computers of the employees and managers. The manager would receive data on how the employees are performing with generative AI and where they could help. The main difference in the two concepts is in their way of interacting with the tool. Concept one took the more traditional approach of interacting with the tool, like how someone would interact with any other program on their computer.

Concept two is also connected with their computer yet this tool would interact with the user with a voice controlled add one to make the experience feel more like a guide than a program. The project will take the more traditional approach of interacting with the tool because of the hindrance voice interaction with computers can cause. Research has shown that people have an aversion to talking to their computer in public, sometimes the tool will be used in a public space like an office (Banks, 2016).

All the insights collected from both modules and the comments made by the participants have been collected into a sheet that can be found in appendix M. The main insights that have been collected from the co-design session are:

- **Data-driven insights:** Use data provided by managers to generate insights and inform decision-making.
- **Continuous updates:** Keep managers informed about the ever changing landscape of generative AI through regular updates.

- **Gamification elements:** Infuse the tool with interactive and engaging elements to make the experience more enjoyable and incentivize its regular use.
- **Employee feedback mechanism:** Incorporate a feedback mechanism to gather insights from employees, making sure that managers address issues and opportunities accordingly.
- **Comprehensive education sessions:** Conduct education sessions highlighting various functions of generative AI, promoting a comprehensive understanding among team members.
- **Risk mitigation:** Prioritize the discussion of risks associated with generative AI and provide strategies to mitigate them effectively.
- **Responsibility and ethical considerations:** Encourage dialogue on the responsibility associated with AI-generated content and ethical considerations in its deployment.
- **Legal discussions:** Address the legal framework and regulations relevant to the integration of generative AI, ensuring adherence to industry specific guidelines.
- **User-friendly interface:** Develop an intuitive and easy-to-use interface for seamless navigation and enhanced user experience

These insights will be incorporated in the next design to ensure a more diverse and thought through concept.

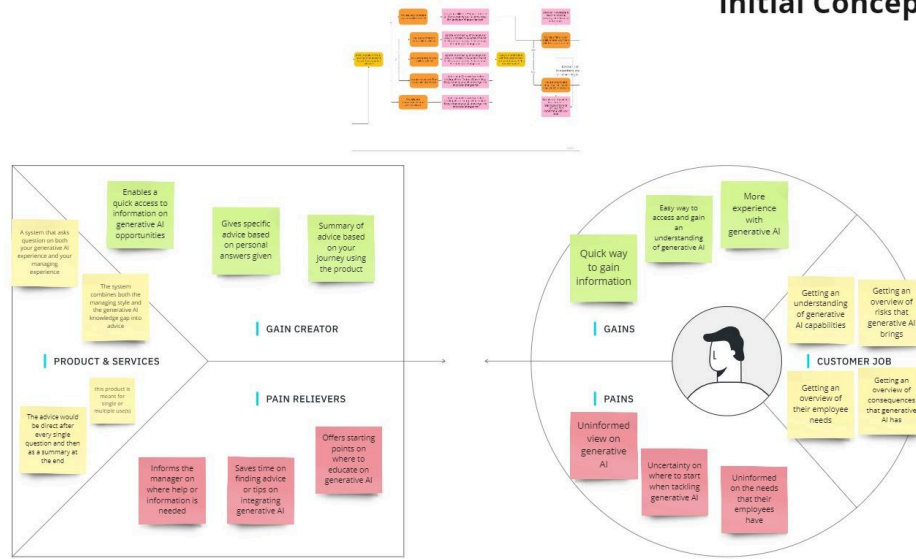
5.3.5 - Value proposition canvas created concepts

To dissect and understand the values that the concepts bring to the stakeholders a value proposition canvas is created for every early concept collected (ServiceDesignTools, n.d.). This means that there is a value proposition canvas for the initial concept and the two concepts created out of the co-design session.

In figure 10 one of the value proposition canvases can be seen as an example of how they are filled out. All the value proposition canvases can be found in appendix N. In all the value proposition canvases the user gains, pains and consumer jobs are the same as the user in all three concepts are the same. In figure 10 the value proposition canvas for the initial design can be seen.

Figure 10: Value proposition canvas initial concept

initial Concept



Creating a value proposition canvas helps in identifying what the user needs by dissecting the user into pains gains and customer jobs. For the intended user the gains, pains and customer job(s) are as followed:

Gains:

- Increased experience with generative AI.
- Convenient accessibility and comprehension of generative AI.
- Quick access to relevant information.

Pains:

- Lack of informed perspective on generative AI.
- Uncertainty regarding the initial steps in approaching generative AI.
- Lack of awareness of their employees' needs.

Customer Job(s):

- Understanding the capabilities of generative AI.
- Gaining insights into the risks associated with generative AI.
- Assessing the implications of generative AI integration.
- Understanding the specific needs of their employees.

These gains, pains and customer job(s) are based on the initial purpose of the project, literature review and the interviews done with the stakeholders.

To create a complete tool, all the gain creators, pain relievers and product & services will

be taken into account when creating the final tool. This is done to take the best parts of every concept into consideration to ensure a widely accommodating tool for the stakeholders. Also some gain creators, pain relievers and product & services have overlap between the different concepts. This is because of the aforementioned similarities between the concepts.

Gain creators:

- Facilitates quick access to information about generative AI opportunities.
- Provides an easy to use platform for accessing and understanding generative AI.
- Offers a visual representation of both opportunities and risks.
- Creates a platform for experimentation with generative AI.
- Lowers the effort required for information access by means of interactive communication.
- Provides personalized advice based on user input.
- Summarizes advice based on the user's journey with the tool.

Pain relievers:

- Provides insights to managers on areas requiring assistance or information.
- Offers starting points for educating teams on generative AI.
- Helps in improving the communication between employees and managers.
- Offers training to meet the specific needs of users.
- Saves time in seeking advice or tips on the integration of generative AI.

Product & services:

- Integration of a behavior monitoring system within the workforce, providing managers with advice based on observed outcomes.
- Presentation of feedback and tips through a comprehensive dashboard interface.
- Provision of personalized as well as general developmental feedback through the system.

- Delivery of feedback via a voice activated personal assistant.
- Immediate advice provided after each question, with a summary at the end.
- Combination of both managerial style and generative AI knowledge gap to offer specific advice.
- A system that asks questions about both your experience with generative AI and your managerial experience.

All the gains, pains, customer job(s), gain creators, pain relievers and product & services will be taken into account when creating the next concept. These elements will be treated as ingredients for the tool not as must haves. Therefore not everything can be integrated into the tool with the limited time and resources this project has to offer. Another reason not everything will be integrated is to prevent a tool that does too much and loses focus on its original purpose.

5.4 - Value survey

5.4.1 - Purpose value survey

The value survey is a survey created for this project in order to ask managers what they believe to be valuable elements in the tool. This survey can be found in appendix O. The survey fulfills this purpose by asking managers to grade and rate certain statements about the tool. These twenty statements have been created based on the outcome of the literature review, interviews and the co-design session.

The original purpose of the value survey was to create a well founded weighted objective list to compare different concepts to each other and make a well founded choice. The protocol of this weighted objective choice process can be found in appendix P. Yet because there are not multiple concepts the outcome of the value survey will be used to refine and rework the concept and in testing to assess whether the concept fulfills to it by the stakeholders defined most important elements.

5.4.2 - Protocol value survey

The value survey is sent only to managers to make sure the results are reliable and valuable. The managers are informed on how their data is handled and agree on that notion. The context of the project is explained to make sure the answers given to the survey fit the context of the project. After they respond to the context that they have read it carefully they move on to the questions.

There are 26 questions in total, these questions consist of: twenty rating questions, four ranking questions and two open questions. To make sure the survey feels structured and

the participants are not overwhelmed by the different questions, four different topics are created. The topics are: education and training, updating and informing, integration and personalization and format and accessibility. In each topic there are five rating questions and one ranking question.

The rating questions are designed to know how important a statement is to the stakeholder and can be compared outside of the topic. An example of how rating questions are presented can be seen in figure 11, this example also shows a short explanation of the question.

Figure 11: Value survey rating question, education and training statement 1

Education and training

These questions will focus on where the tool should help you in education and training.
Please rate the following statements on how much you agree on them.

The tool should keep me updated on current generative AI updates. *

1

2

3

4

5

Strongly disagreeStrongly agree

The ranking question is designed to identify the importance of the statements compared to the others in the group. The ranking questions are a way to prevent the outcome from being monotone by managers answering the same value in the rating question. By implementing a ranking system the managers have to make a choice on relevance and will therefore show a difference in value. An example of how ranking questions are presented can be seen in figure 12, this example also shows a short explanation of the question.

Figure 12: Value survey ranking question, education and training

Education and training

Please rank the following statements from most important to least important. Number 1 being the most important and number 5 being the least important.

- ◇ The tool should keep me updated on current generative AI updates.
- ◇ The tool should train me with AI text and image generation.
- ◇ The tool should explain the risks and shortcomings generative AI has.
- ◇ The tool should show options to work more efficiently with generative AI
- ◇ The tool should inform me of use cases that generative AI can bring.

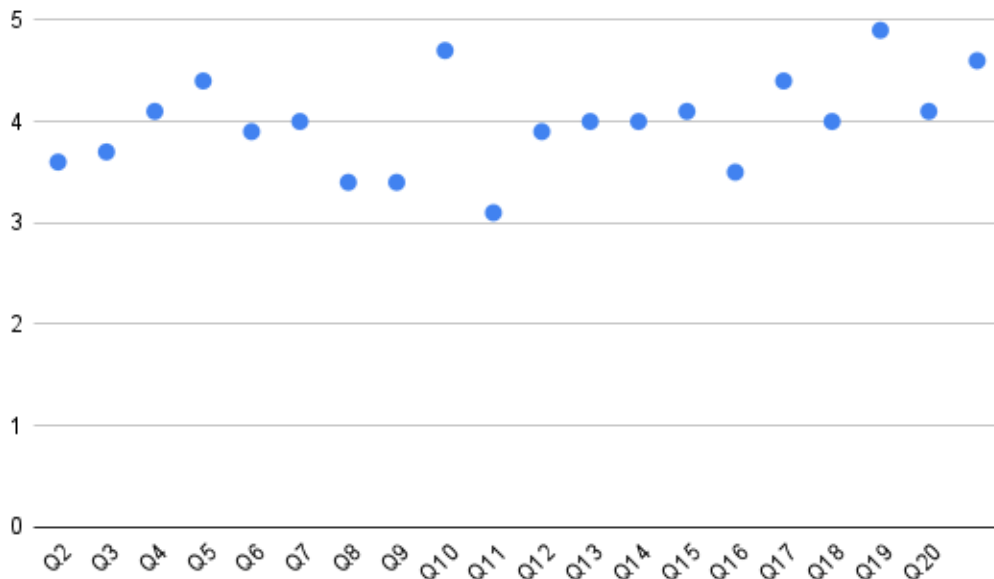
At the end of the survey there are two open questions. The first question asks if they have anything that they want to add to the project that they could not express in the survey itself. The second open question asks the participants if they are interested in being contacted if they can assist in the project. Their assistance can be very useful as they are the main stakeholder of this project. Examples of assistance the participants can offer are being interviewed and being participants in tool validating.

5.4.3 - Results value survey

Because of the time limitations of this project a limited amount of responses are gathered which can result in an unreliable outcome. The number of responses are ten, these ten responses are all managers and therefore are still valuable. For this project the outcome of the value survey is portrayed as if the responded pool is large enough for it to be reliable.

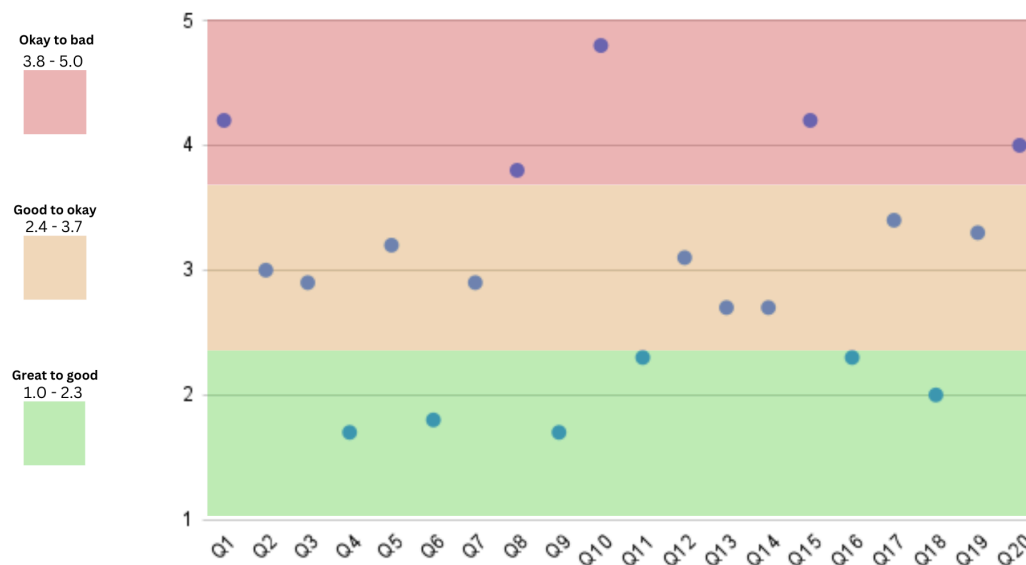
The outcome of the rating questions in the survey show that managers don't disagree with any of the statements. An overview of all the responses for the rating question can be found in appendix Q. The lowest scoring statement is statement 10 which reads: The tool should keep me updated on my employees activities with generative AI. The average score of this statement is 3.1. The highest scoring statement is statement 18 which reads: The tool should be digital accessible. The average score of this statement is 4.9. Because of the relatively high scores of all the statements it becomes that apparent that all the twenty statements are all at least relevant to the user. The average of the scores are too close together as seen in figure 13 to make a conclusion on its own.

Figure 13: Value survey rating question outcome displayed into a graph



To find out where the most relevant statements are these results will be combined with the ranking statements results. An overview of all the responses for the ranking question can be found in appendix R. The ranking statement results show more preferences towards certain statements and are therefore more easy to work with. These preferences can be seen in figure 14 where the outcome of the ranking statements are shown. The outcome ranking of the statements and the outcome rating of the statements are compared to make sure that there are no errors made. These signs of an error could be that one statement is rated very poorly and yet ranked very highly. An inconsistent result could be because of error in understanding the survey or in the report out by the researcher. There are no large inconsistencies that cause exclusion of a statement.

Figure 14: Value survey ranking question outcome displayed into a graph



The outcome of the ranking statements are divided into three different categories, great to good, good to okay and okay to bad. The statements will be integrated into the final concept based on their placement in these categories and the designers own intuition on what is possible. All the statements in the category great to good will be taken into consideration for a larger part of the final concept. All the statements in the category good to okay will have a part in the final concept comparable to the earlier concept. All the statements in the category okay to bad will be taken into consideration for a reduction in part or part size in the final concept. In table 2 the statements that will be taken in consideration for increase in part size can be found. In table 3 the statements that will be taken in consideration for decrease in part size can be found. The integration of these results will be further explored in chapter 6.3 the final concept.

Table 2: Statements in consideration for a larger part in the final concept

Nr.	Statement (The tool should..)	Ranking Score
4	show options to work more efficiently with generative AI	1.7
6	inform me about important topics in generative AI	1.8
9	offer me a summary of useful advice	1.7
11	offer its advice specific to my domain of work	2.3
16	be easy to use and access for different types of people	2.3
18	be a digital accessible tool	2.0

Table 3: Statements in consideration for a smaller part in the final concept

Nr.	Statement (The tool should..)	Ranking Score
1	keep me updated on current generative AI updates	4.2
8	make me aware of the implications generative AI has on the world	3.8
10	keep me updated on my employees activities with generative AI	4.8
15	have some interactions with my employees	4.2
20	be a long term tool with continuous use (multiple uses over a long time)	4

6- FINAL CONCEPT TRANSFORMATION TOOL

6.1 - Purpose of the concept

6.1.1 - Vision of the concept

To create a concept that is based in research done for this project and outside this project a vision is created on that research. As aforementioned in this report the vision for this tool is as followed:

“To create a tool that assists managers to gain awareness, insights and competence in how to integrate and deal with generative AI in their team”

This vision has been divided into the following statements, these statements will also help measure the successfulness of the tool:

- The tool should get managers thinking about integration implications (awareness).
- The tool should help train the manager into becoming more competent with generative AI.
- The tool should give advice for their personal integration process.
- The tool should save managers time by providing advice and research.
- The tool should provide insights to the managers about generative AI risks and benefits.

These statements were kept in mind when designing and will be kept in mind when moving towards the validating phase of this project.

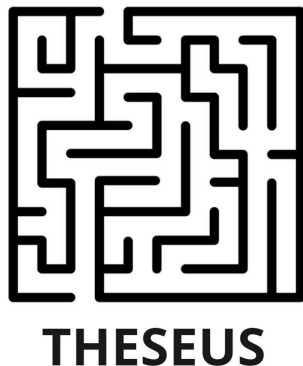
6.1.2 - Branding of the concept

Because this concept is also a product it should have a small form of branding to make sure consumers can identify the tool. The product is a tool that guides the managers through the generative AI transformation.

For the branding the transformation is seen as a maze, because of the complex nature of the transformation. The maze also represents insights from the interview where participants discussed not knowing where to start or where to go. The tool itself represents the thing that can guide the manager out of this maze, therefore help this manager navigate the generative AI transformation. The tool represents Theseus, a

Greek mythology figure that escaped the infamous labyrinth (Cartwright, 2016). Therefore the tool is called Theseus and the logo is a maze/labyrinth. The choice of the logo was made to make it more recognisable. See figure 15 for the final logo for the tool. As branding is not the focus of the project there will be no testing or research performed to enhance the brand.

Figure 15: the Theseus logo for the brand



6.2 - The final concept

6.2.1 -Final tool explained

This chapter will dive deep into the final concept for the tool. This subchapter will shortly explain what the final concept is. The tool is a program managers can download for their teams. This program will install on the manager' computer and all the participating employees' computers. On the first day the manager and employees will receive a short introduction on how the tool will work for them. They then will be asked to create a profile on what they do, what sector they are in and where they feel they need attention when it comes to generative AI.

The following moments that the manager interacts with the program it will offer educational material, tailored tips and training material based on their own profile and based on their teams' needs. The teams' needs are based on the profiles and the employees' interaction with the tool. The tool primarily focused on the managers yet to collect data from the employees and at the same time also train and educate the employees the tool also offers the employees educational material, tailored tips and training material based on their own profile,

The tool can be used for as long as the manager wants to, if the tool notices inactivity it will ask the manager for steps to proceed. The steps can be continuing, pausing or ending the program. The desired outcome of the usage of the tool is a more confident and capable manager who knows their teams' need in generative AI and is capable in dealing with the needs. A by-product of the tool is that the team will also become more

competent and confident.

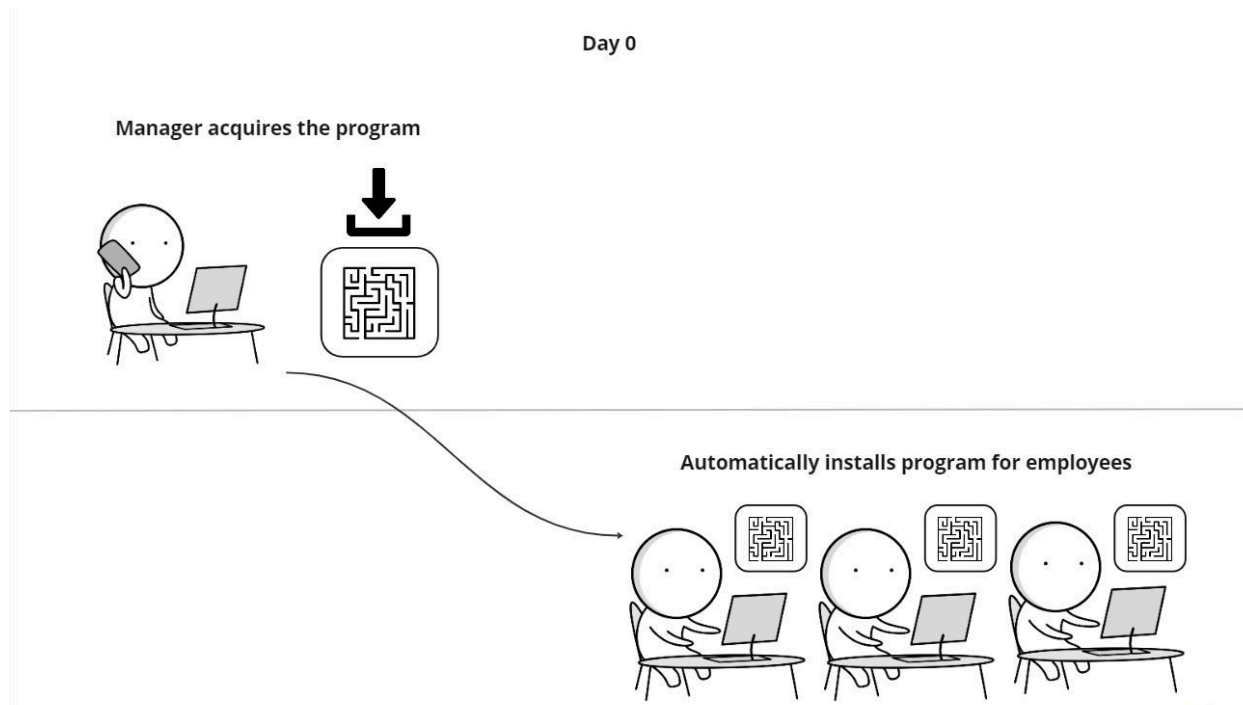
6.2.2 - Introduction to the final concept

The final concept of the tool is based on the various research methods conducted. The literature review and interviews created the first concept. This concept evolved by the inspiration and insights gathered at the co-design session. The final concept is a second iteration on the last concept with the feedback of the value survey integrated into the design. To limit the size of the report not every page of the tool is shown only the most relevant pages that illustrate the usage. To avoid confusion the figures where the interface of the tool is displayed two alternative colors are given to the background of these desktops to suggest who is using the tool. The orange background with no detail is to indicate that a manager is using the tool, the purple background with mountains is to indicate that an employee is using the tool. The complete concept with all the details can be found in appendix S.

6.2.3 - Day 0 of using the tool, the installation

The final concept is a digital tool that managers can install on their work computers. This program will then also be made available for all the employees in the team of the manager, as seen in figure 16.

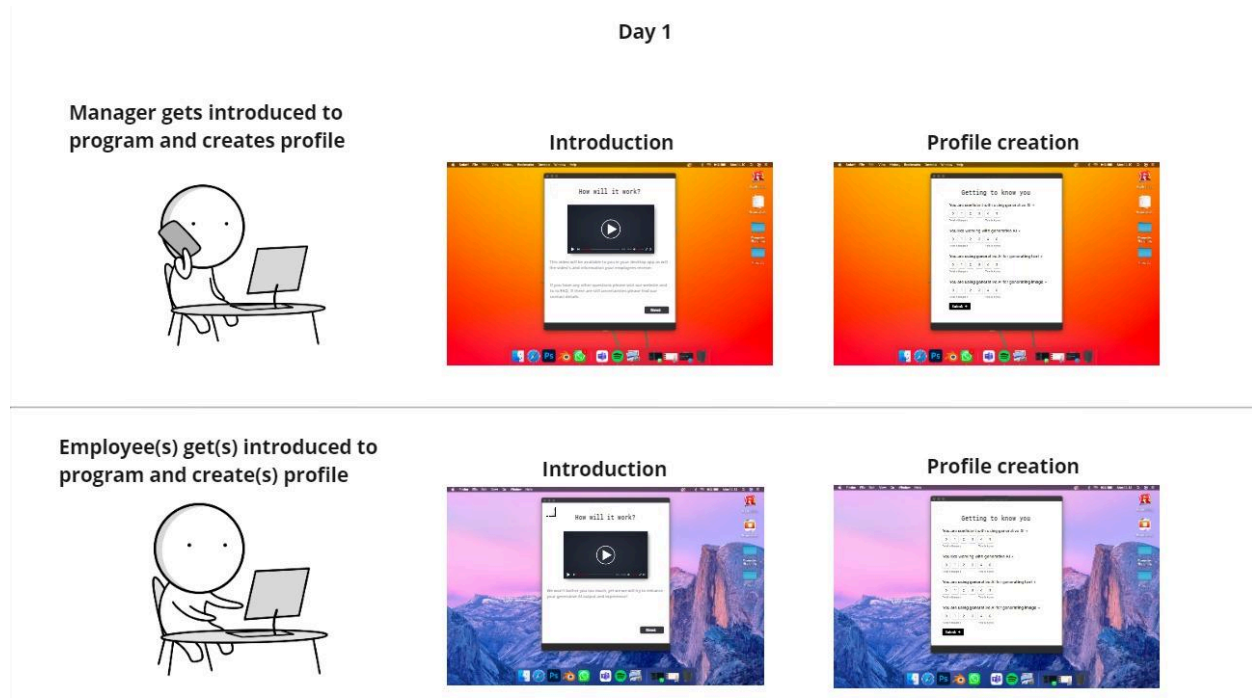
Figure 16: Scenario day 0, the manager and employees installing tool



6.2.4 - Day 1 of using the tool, getting to know the tool

This program is a digital tool that assists a manager in integrating generative AI into their team. The first time this tool starts up it will explain how it will work to both the manager and the participating employees and let them create profiles, see figure 17.

Figure 17: Scenario day 1, the manager and the employees are informed on the tool and create a profile



The page where the tool is explained by text and video differs based on whether the user is a manager or an employee, see figure 18 and 19.

Figure 18: The page for a manager being introduced to tool

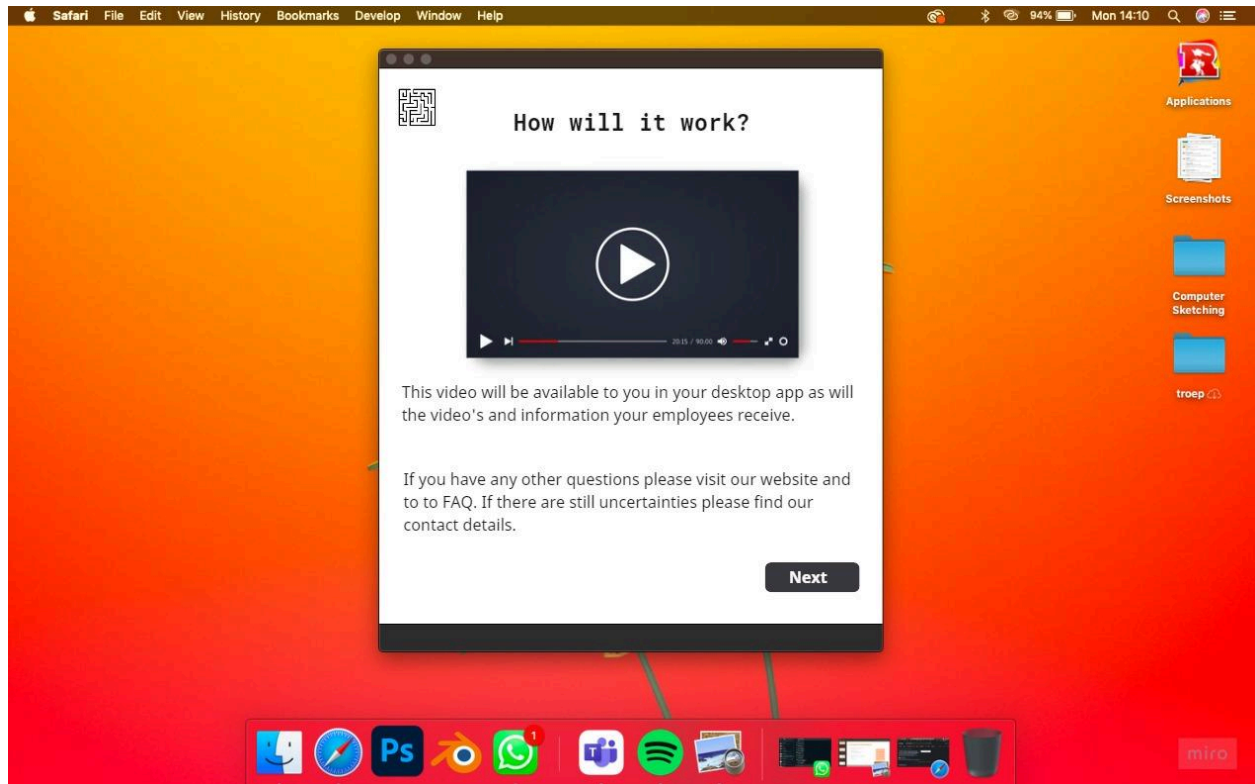
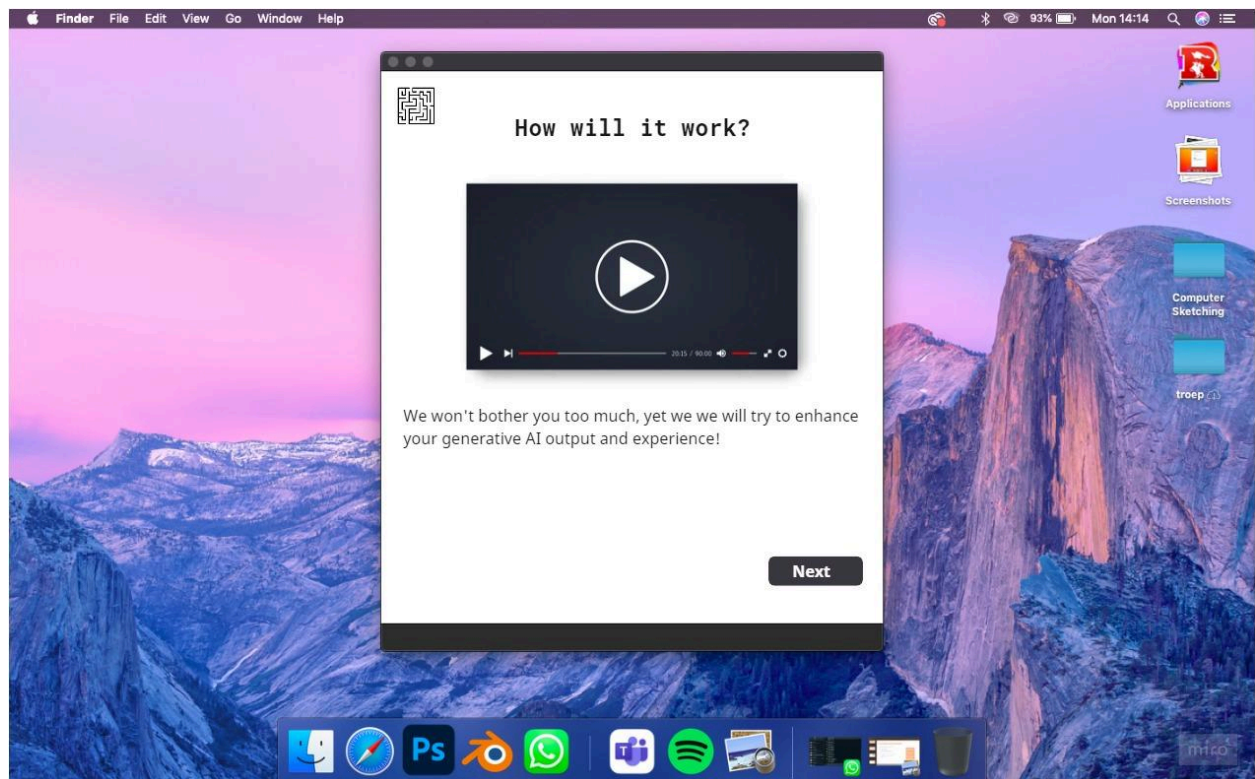
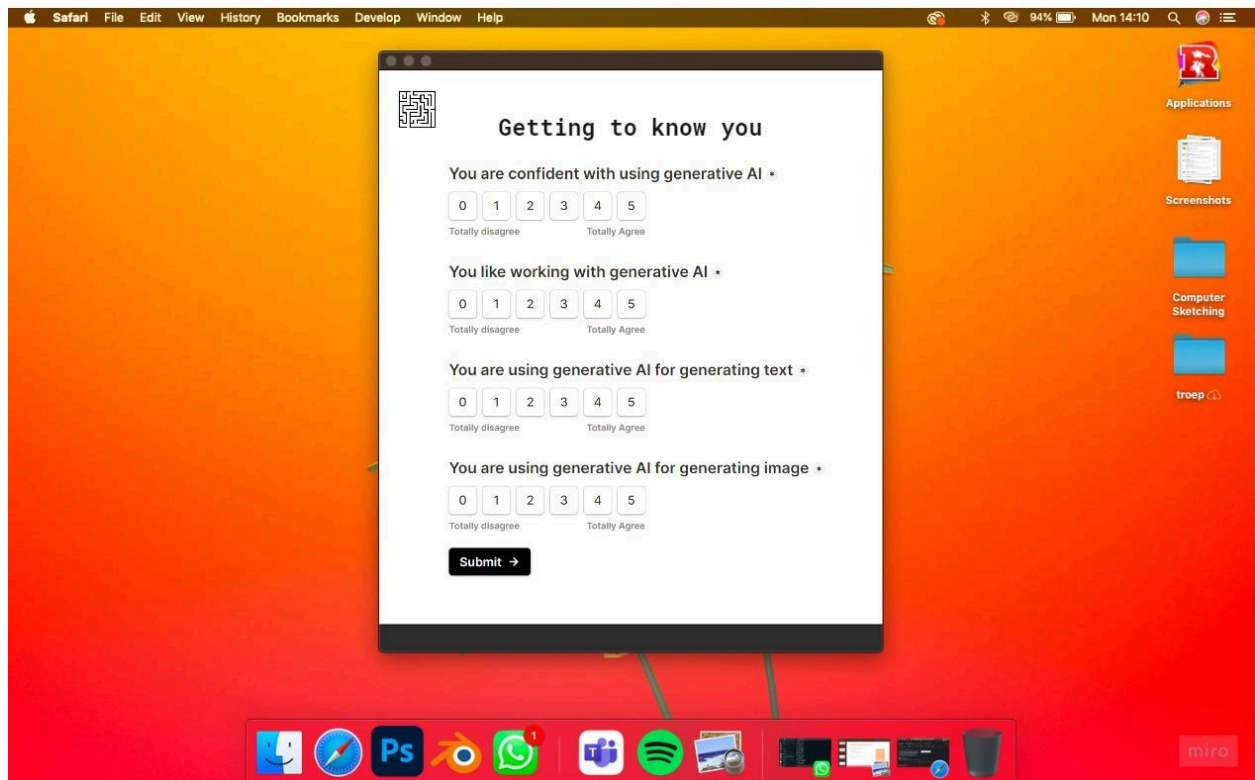


Figure 19: The page for an employee being introduced to tool



The program will on its first day of usage ask both the managers and the employees to create a profile, as seen in figure 20 and 21. The profile creation will have different questions based on whether the profile is for a manager or for an employee. This profile will help the tool determine what field the manager and employees work in and where they have the need for improvement in the generative AI sector. This profile of both the manager and the employees will evolve based on the continued use of the tool. The tool gathers information on what the manager and the employee are using on the tool to personalize the experience and enhance the relevance of the output.

Figure 20: The page for a manager creating a profile for the tool

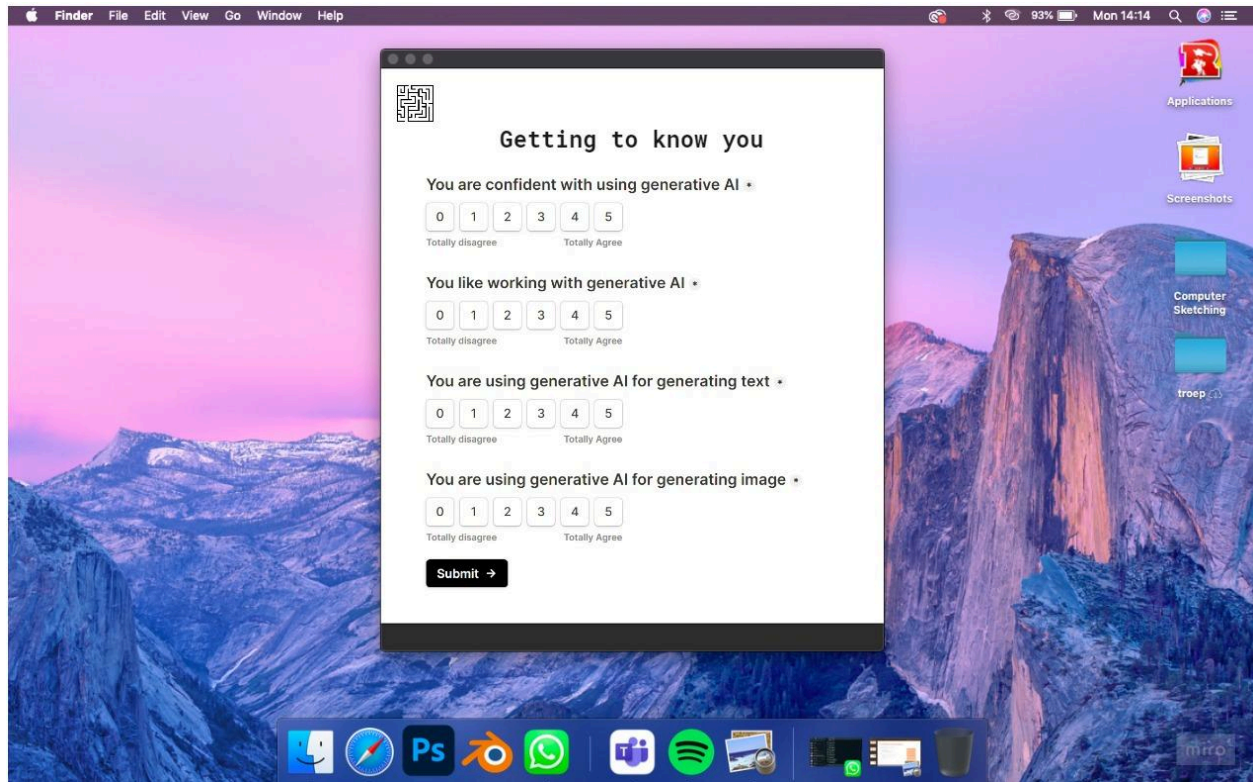


The screenshot shows a web browser window with a yellow-to-orange gradient background. A central white box contains the form titled "Getting to know you" with a small icon of a person. The form has four sections, each with a 0-5 Likert scale and "Totally disagree" and "Totally Agree" labels:

- Section 1: "You are confident with using generative AI" with a scale from 0 to 5.
- Section 2: "You like working with generative AI" with a scale from 0 to 5.
- Section 3: "You are using generative AI for generating text" with a scale from 0 to 5.
- Section 4: "You are using generative AI for generating image" with a scale from 0 to 5.

At the bottom of the form is a black "Submit" button with a right-pointing arrow. The browser's address bar shows "Safari" and the menu bar includes "File", "Edit", "View", "History", "Bookmarks", "Develop", "Window", and "Help". The system status bar at the top right shows "94%", "Mon 14:10", and a search icon. The dock at the bottom contains icons for Finder, Spotlight, Photoshop, OBS, WhatsApp, Microsoft Teams, Spotify, and a trash can. On the right side of the desktop, there are icons for "Applications", "Screenshots", "Computer Sketching", and "troop". A "miro" logo is visible in the bottom right corner of the desktop background.

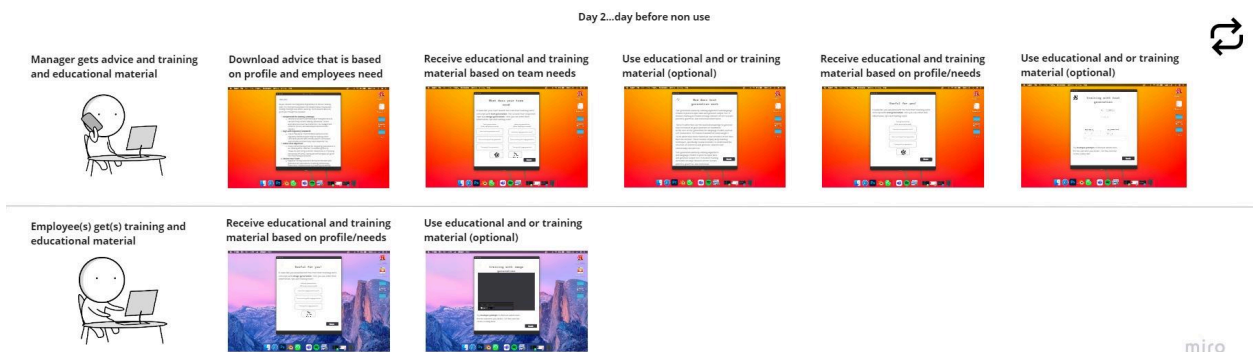
Figure 21: The page for an employee creating a profile for the tool



6.2.5 - Day 2 and following days, normal usage of the tool

The normal use of the tool will consist of the manager getting a summary of advice, educating and training to match the needs of the employees and educating and training based on the managers' own needs. For the employees the normal usage will consist of educating and training based on their personal profile needs. See figure 22 for a scenario displaying the normal use. The scenario will be further explained in the report, figure 22 is to show the overarching steps.

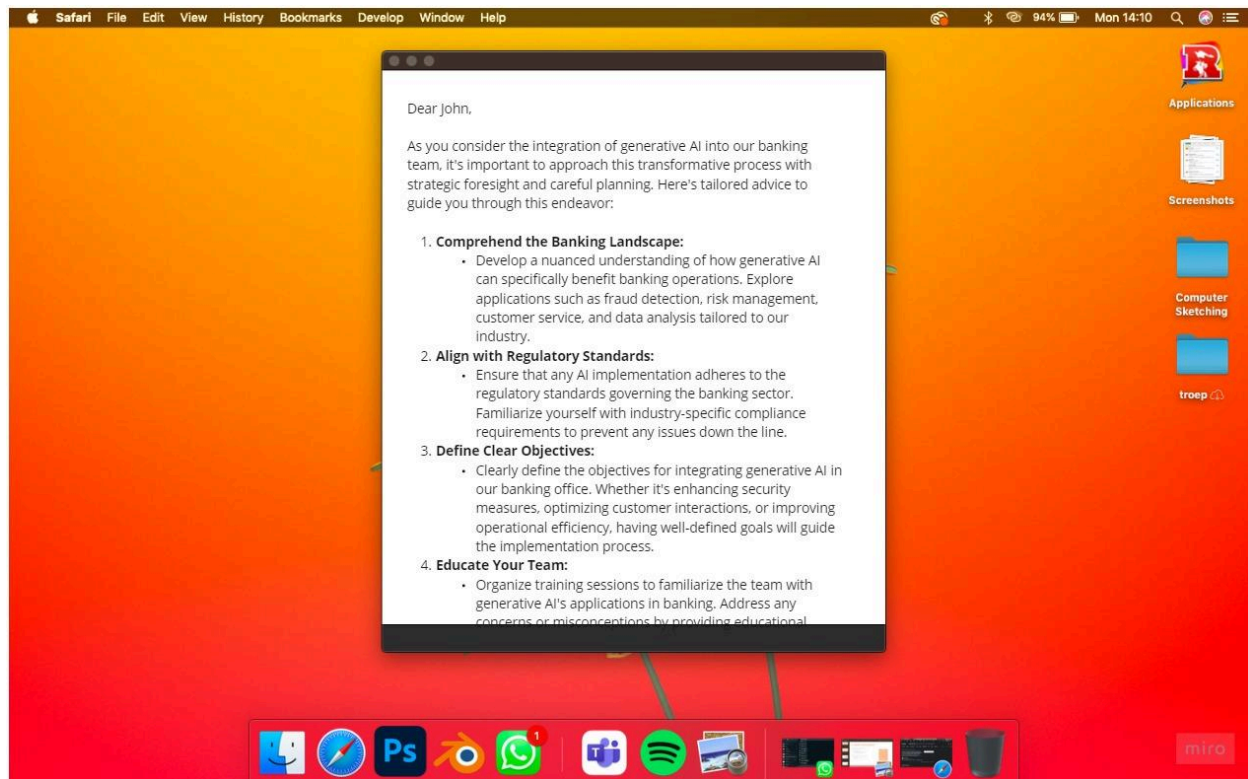
Figure 22: Scenario of day 2, where the manager and the employees using the tool



The normal use of the tool will start after the profile is made. The manager and the employees will interact separately with the tool on their own device during their work day. The combined information of their interaction with the tool will determine the

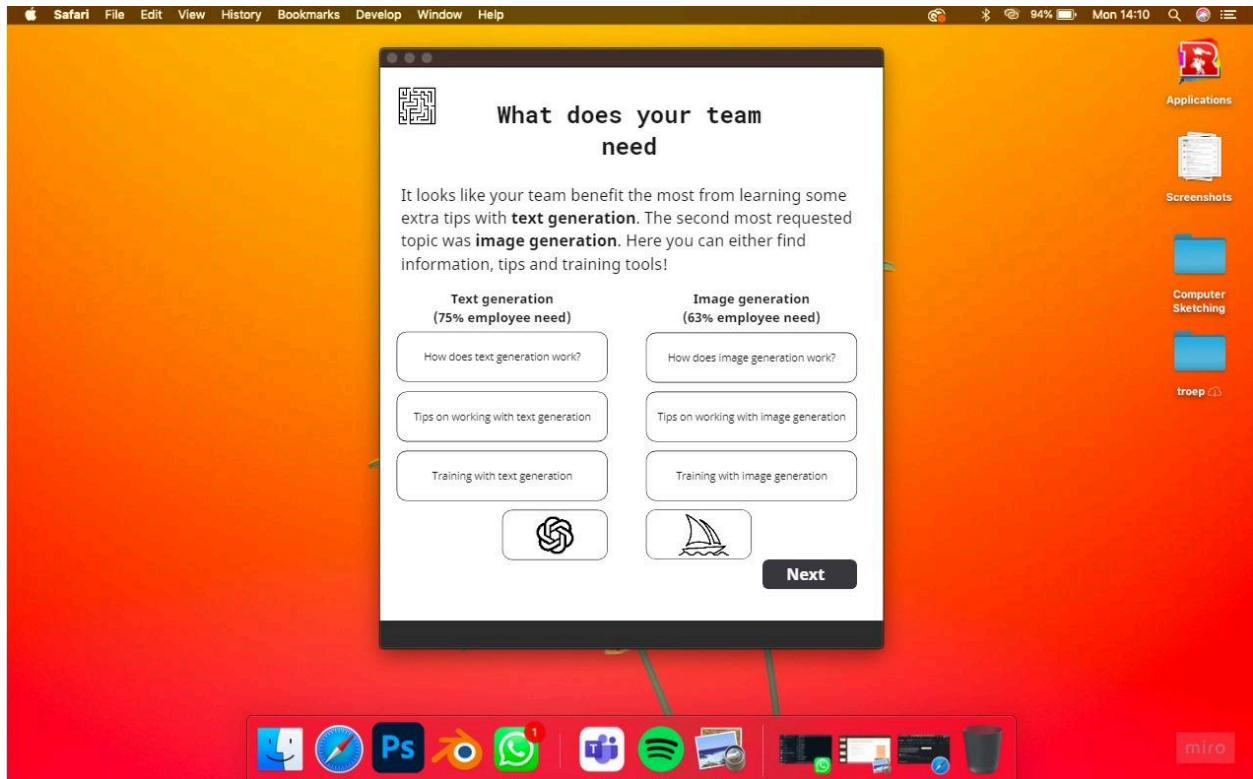
output. At the start of every session the manager has, the manager will receive a document of advice based on the previous interaction the tool has made with the manager and the employees, see figure 23. On day one this advice will be based on just the profiles created and will therefore be more surface leveled. The advice will evolve when the tool learns more about both the managers and the employees using its own AI.

Figure 23: The page for a manager downloading advice



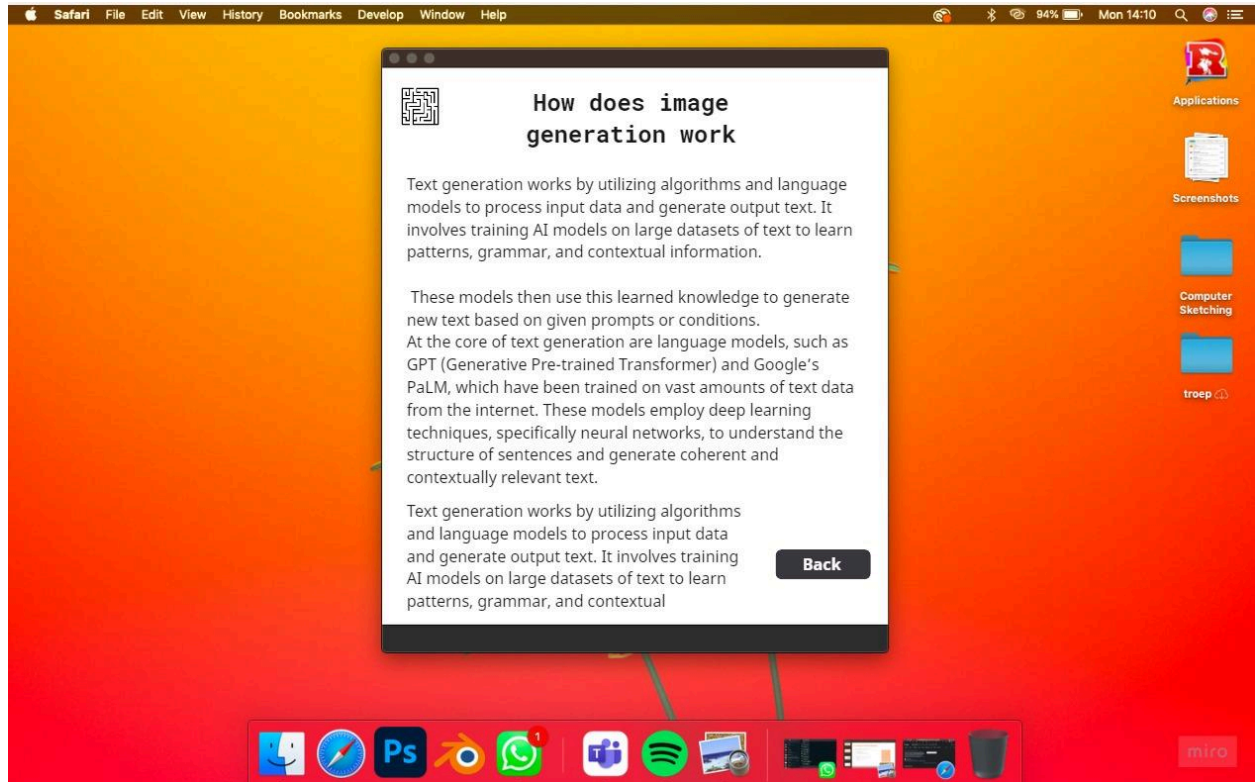
After receiving the advice document the manager can continue to use the tool. On the next page of the tool the manager will receive options for education, more advice and training based on the needs of the managers' employees. An example of this page can be seen in figure 24. If for example the employees profiles suggest a strong need for assistance or interest in AI text generation, the manager will receive options to educate and train with that topic. This is to make sure that the manager is able to know where the needs of the employees are and to make sure the managers' knowledge and skill are at a certain level where they can help their employees.

Figure 24: The page for a manager receiving options to educate or train based on their teams needs



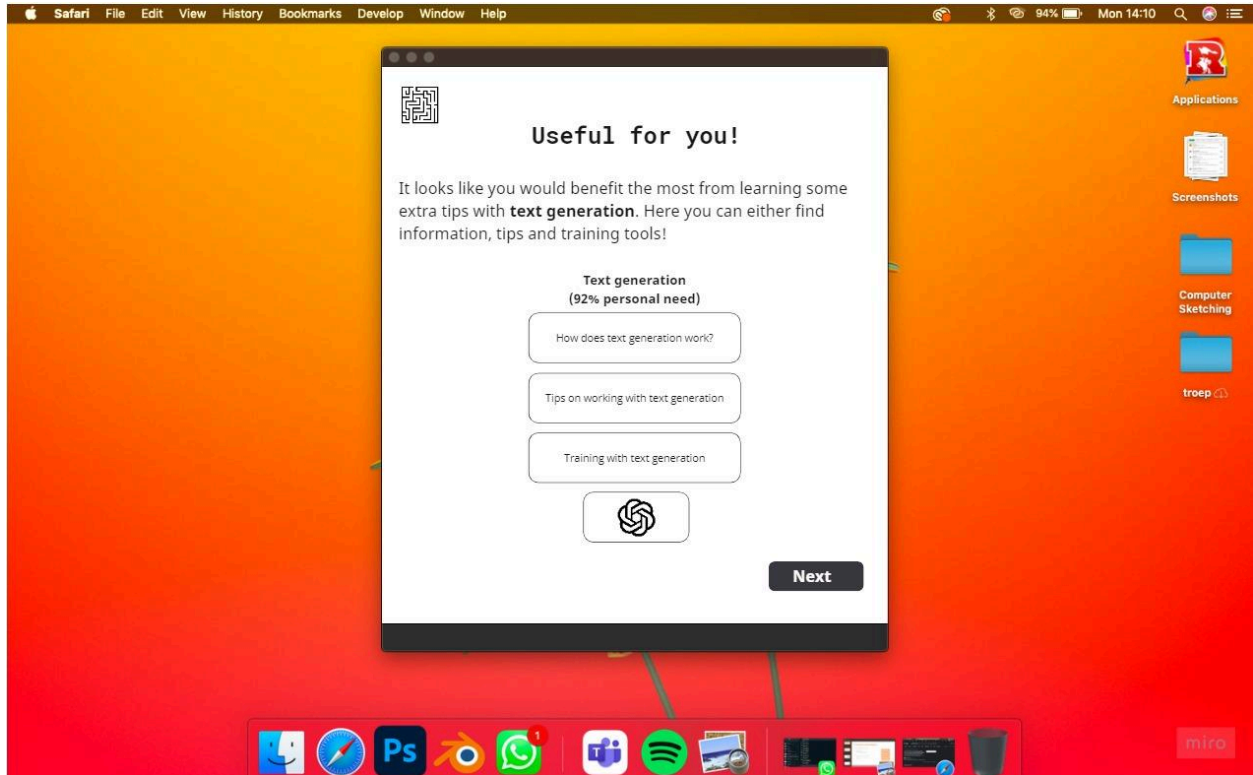
The manager can choose to do any number of combinations of exercises depending on the time they want to spend on improving their generative AI knowledge and skill. In figure 24 the many options can be seen with the profile fit that the team has towards these topics. If a manager chooses one of these options they will be sent to a new page where they can interact with their chosen option. For example education on image generation as seen in figure 25. A manager is free to go back and pick other options or continue the program.

Figure 25: The page for a manager receiving information on how image generation works



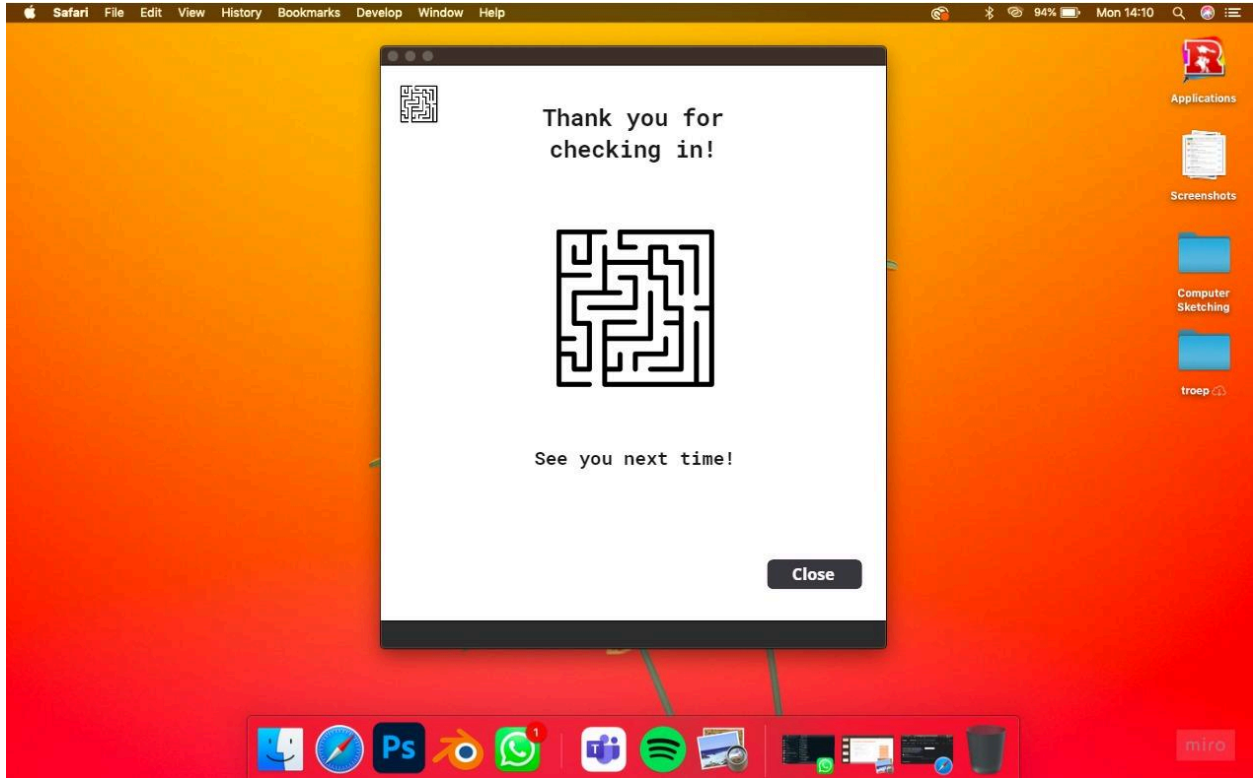
After a manager has seen and possibly interacted with the needs that the team has they can continue the program the tool has set out. A manager will then receive a new page where it offers education, advice and training based on their own profile. As seen in figure 26 the manager has a need or interest for improving their text generation capabilities. It is possible that the options are similar in both the team page and the individual page, this can be the case if the needs of the team align with the needs of the manager. In that case the manager has the option to do more educating and or training or skip that step.

Figure 26: The page for a manager receiving options to educate or train based on their own needs



The following page will thank the manager and close, see figure 27. This marks the end of the program for that session. The sessions appear as frequently as the manager has put into his profile. All normal use sessions for a manager will look like the previous mentioned process.

Figure 27: The page for a manager being thanked for today's use



The tool is created for the manager and has therefore more interaction with the manager yet to collect data in that process and also educate and train the tool to interact with the employees of that manager. The process is very similar only it does not show the steps that handle the teams need with generative AI. The employees only receive a page where they see where their need is and can interact with them. See figure 28 and 29 for an example where an employee has a need for image generation and uses the training function to address that need.

Figure 28: The page for an employee receiving options to educate or train based on their own needs

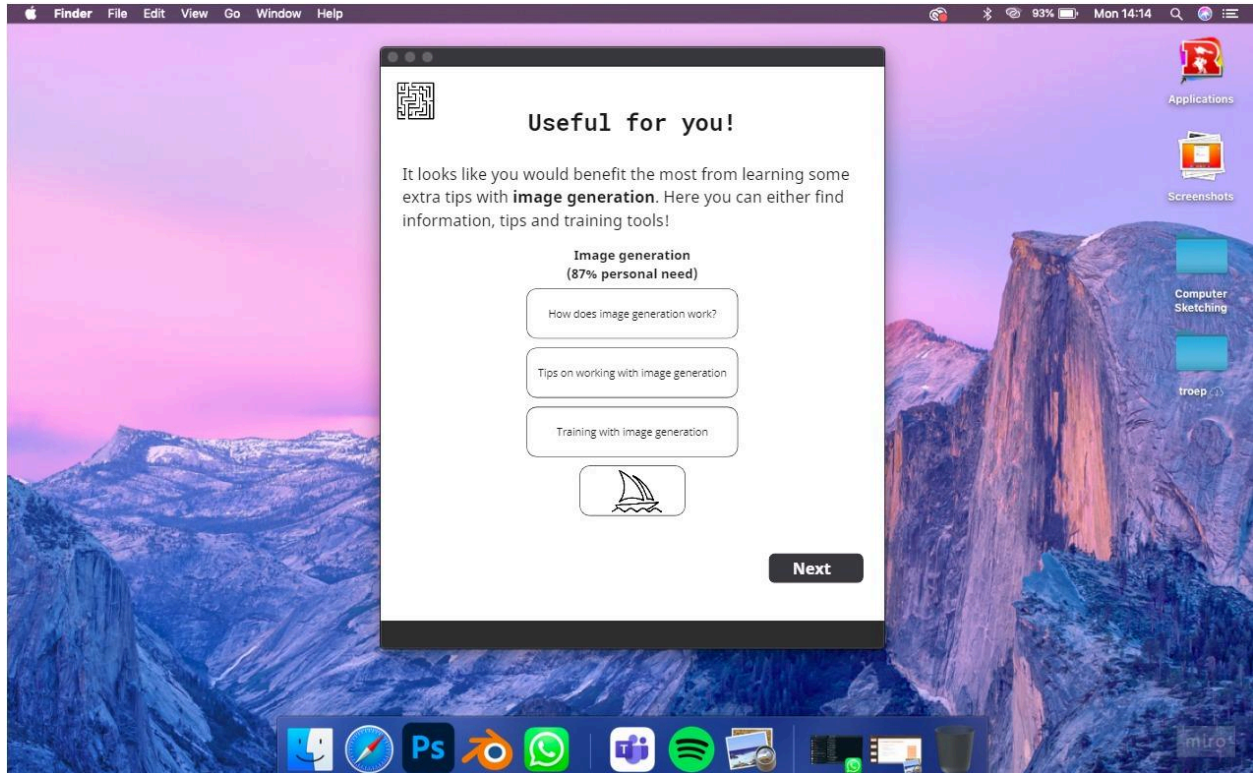
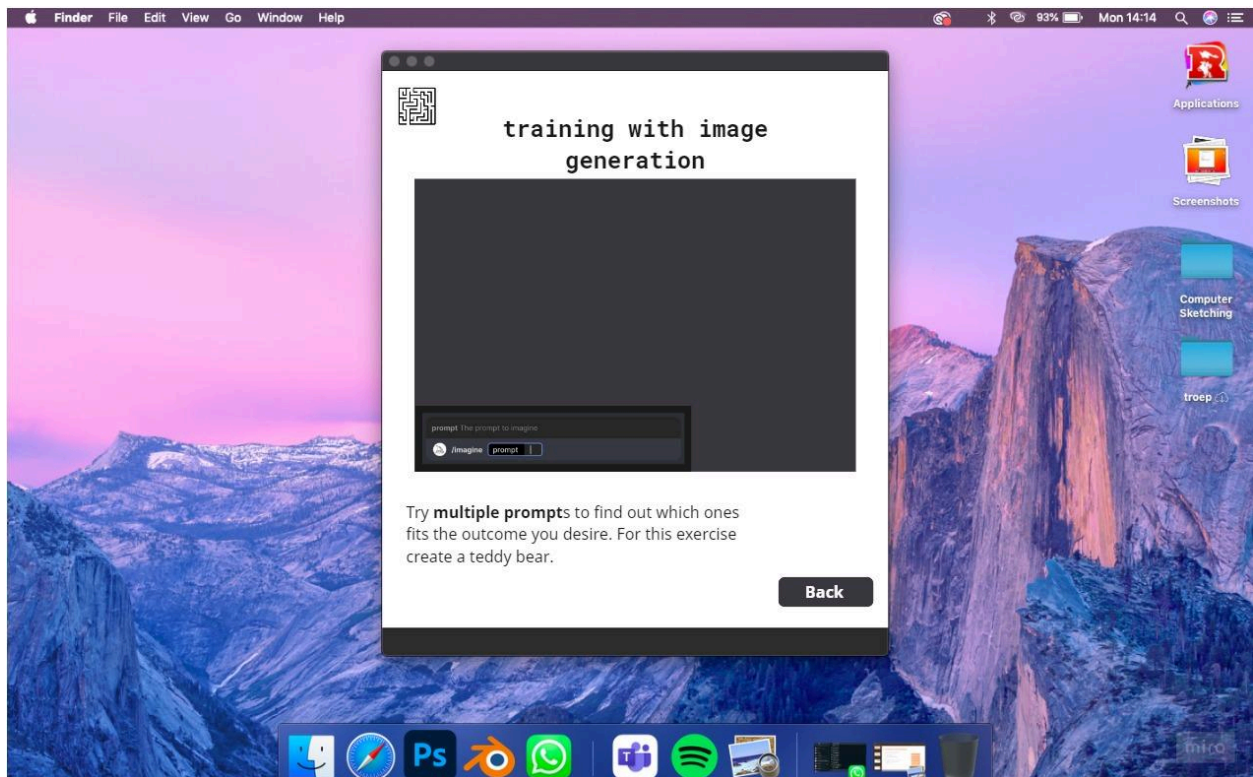


Figure 29: The page for an employee receiving training on how to use image generation

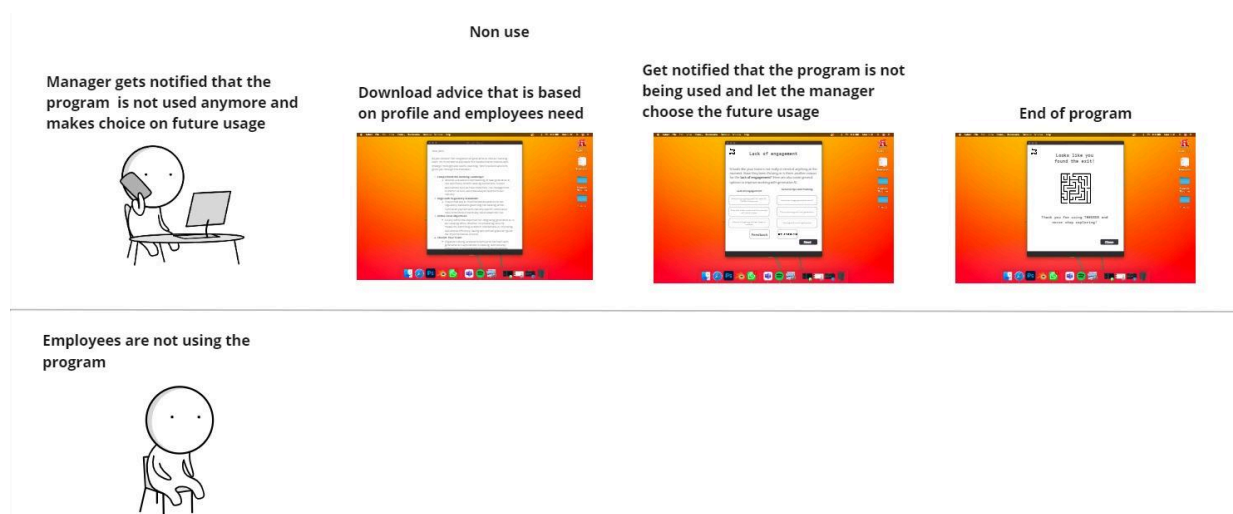


Because the employees are using the tool the manager will receive more accurate insights because the tool can collect data on where to address needs in the team.

6.2.6 - Non use of using the tool, ending use of the tool

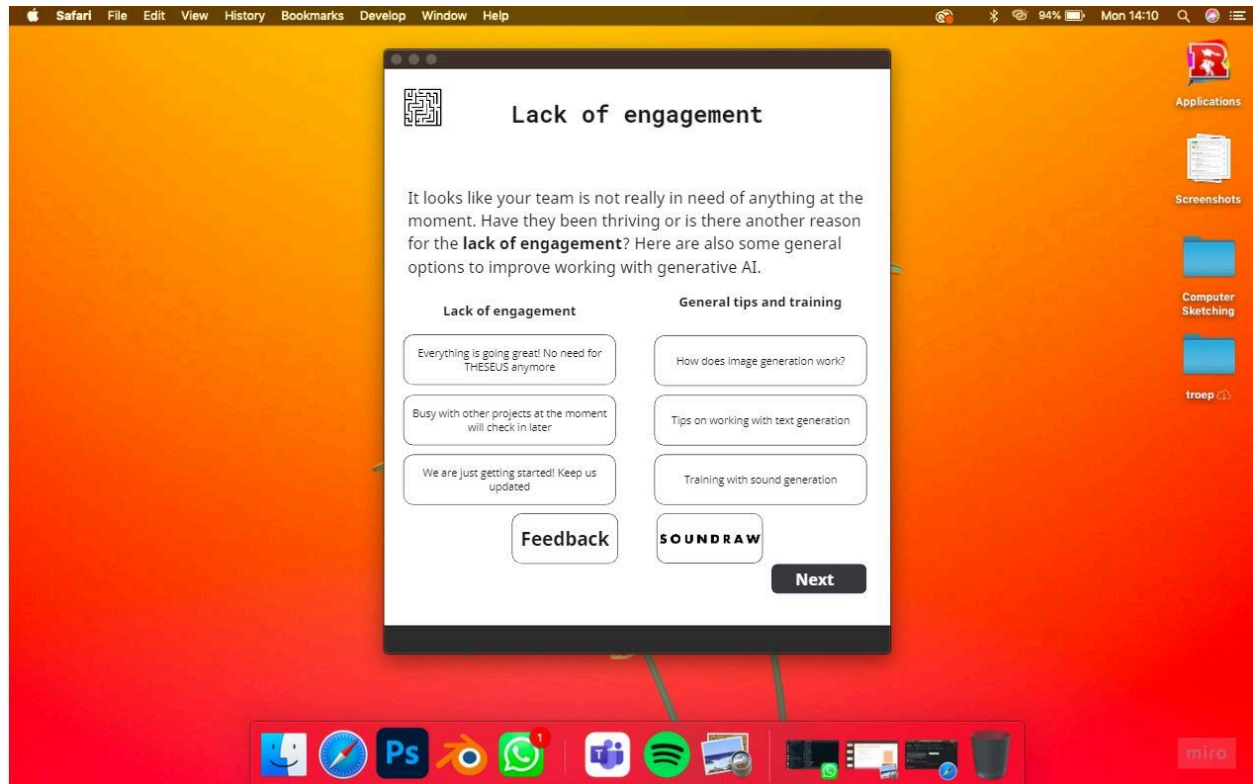
As seen in value surveys, the tool should not be something that is in the people's work life for a long time. Therefore it will come to an end when the tool notices that it is not being used. The employees will not receive any notification as this tool is made for the manager, the option to continue therefore lies with the manager. See figure 30 for a scenario where the tool is not being used anymore and the manager handles the options.

Figure 30: Scenario of non active, where the manager is handling the not used tool



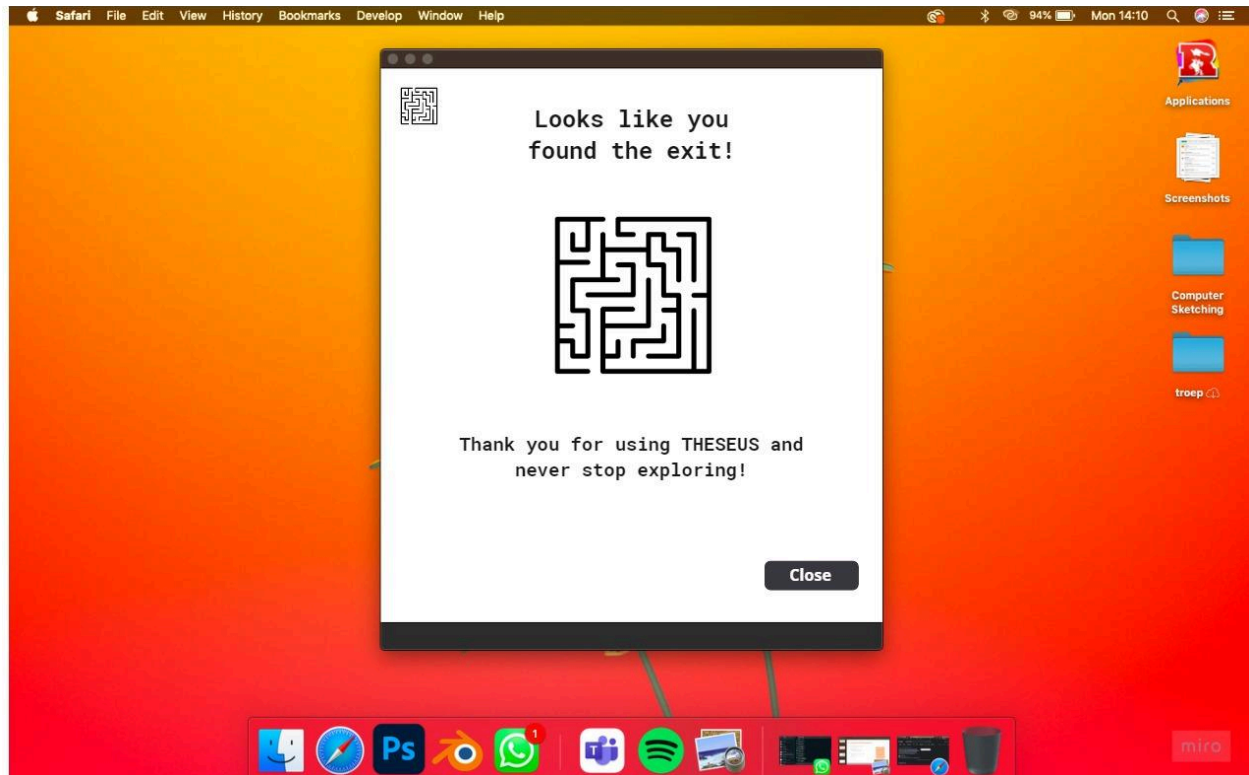
At the start of the use of the program for that day the manager will receive advice based on the needs of the team like usual. When the manager has passed that step, they will be shown a page that tells them that the tool is not being used enough for desired results. The manager has the options to either continue, pause or exit the entire usage of the tool, see figure 31. At this page feedback can be sent to the Theseus team to improve the tool and the manager can also be educated or trained with general generative AI exercises.

Figure 31: The page for a manager being informed about the lack of engagement and offered a choice in how to continue



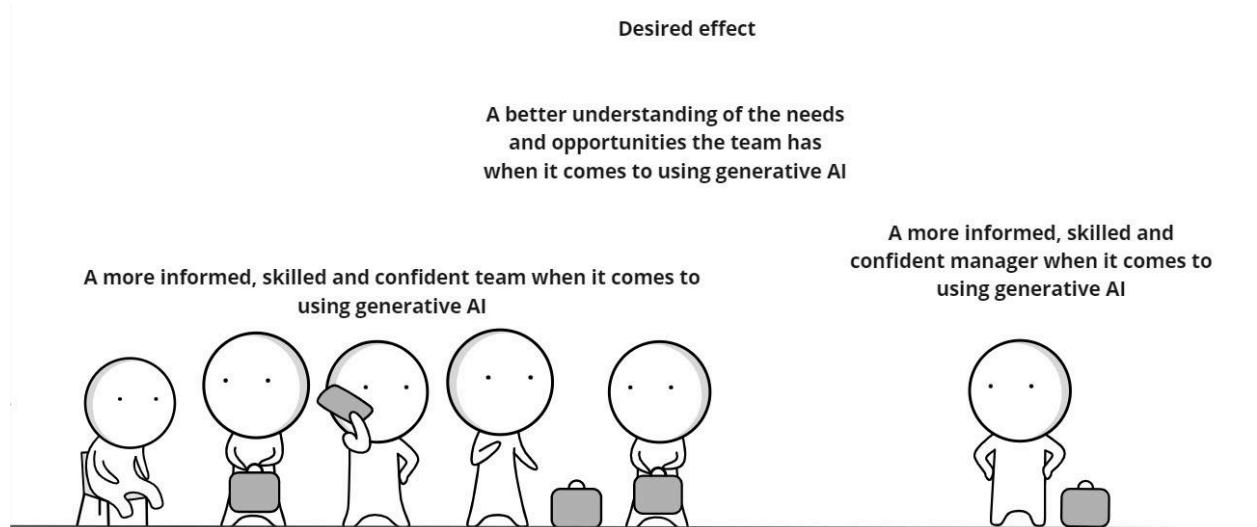
If the manager is done with using the tool entirely it can choose that option and the tool will close permanently until it is activated for an entirely new session, see figure 32. For a new session the data from the previous session will not be used as it could be that the manager and the team has undergone changes in personal and or needs in general.

Figure 32: The page for a manager closing the session and ending the use of the tool



This will be the end of the session for this particle manager and team. The desired outcome is that both the manager and the team are more confident and competent with generative AI in their sector and can practice it more freely. Another desired outcome is that the manager is more aligned with their employees' needs and can therefore better act on it, making it easier to integrate generative AI in their team. See figure 33 for that specific scenario where the desired outcomes have come true.

Figure 33: Scenario of desired outcomes, where the manager and employees are more competent and confident and easy integration is possible.



6.3 - Context of the tool

The tool holds its relevance across diverse applications, aligning with the dynamic landscape of generative AI. Its adaptability is a key strength, catering to different needs wherever the integration of generative AI is desired. The world of generative AI is marked by continuous changes, driven by the ever-changing capacities of the technology.

At the moment the most prominent and widely embraced applications of generative AI revolve around text generation and translation. These functionalities have garnered significant attention and utility, making them the cornerstone of the tool's appeal. In fields where the impact of generative AI is pronounced, such as content creation, communication, and language processing, the tool flourishes.

It is essential to recognize that the landscape of generative AI is not static. As the capabilities of the technology advance, the tool must evolve with it to remain relevant. For example, if the quality of generative AI in image generation reaches a level where it becomes a viable resource for animators, the tool seamlessly extends its relevance to cater to their needs. This positions the tool as a dynamic asset for companies and managers by anticipating and embracing emerging applications of generative AI in different work fields.

The tool's effectiveness relies on its ability to stay current with the dynamic capabilities of generative AI. By doing so, it ensures that it remains a valuable asset across diverse domains. This adaptive quality allows it to transcend its current relevance and seamlessly integrate into new areas, thereby future-proofing its utility in a rapidly evolving technological landscape. In essence, the tool serves as a bridge between the evolving potential of generative AI and the specific needs of different industries, ensuring its continued efficacy in an ever-expanding array of applications.

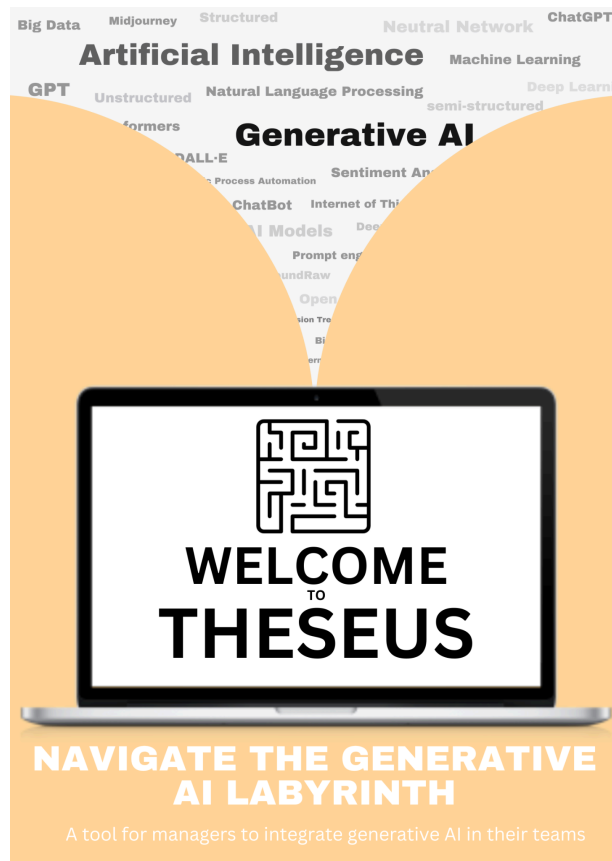
6.4 - Theseus the product

Theseus is not only a concept for a journey of a tool as described in chapter 6.2, it is also a product that companies can purchase for their managers. Theseus is an interesting purchase for companies as they can use it to gain an advantage over other companies as their managers and teams are better at using the new technology of generative AI. Not only will Theseus help managers and their employees in improving their ability to use generative AI, it will also save these teams a large amount of time by creating a learning program and providing all the material. The combination of improving skill and saving time is vital for a company to survive and thrive in the generative AI transformation.

Theseus should be marketed as a product that condenses the large new world of generative AI into one program. Therefore marketing material like the poster in figure 34

reflects that notion. The different generative AI buzzwords and programs are portrayed as a busy mess. This mess is funneled into a computer with the Theseus program, which removes the chaos into a simple screen which reads: Welcome to Theseus. The aim of the poster to make the reader feel like Theseus is a welcoming program that will help reduce uncertainties around generative AI and aid in the mastering generative AI programs.

Figure 34: Marketing material Theseus, poster



6.5 - Changes from the value survey

The concept discussed in chapter 6.2 is a concept iteration on an earlier concept made after the co-design session discussed in chapter 5.3, this concept can be found in appendix T. To explain certain choices, changes made to the first version of this concept will be shown and highlight the influence of the value survey. The changes are as followed:

- A page was added for the manager and the participating employees to add their field of work. This has shown to be important for the managers as noted in statement 11, where advice on specific domains of work scored high.

- A page was removed where the manager was shown detailed insights on how their employees interacted with the tool. This feature was removed because of statement 10, where keeping updated on employees activities scored low.
- A page was added for the manager where they receive a summary of advice based on profiles and activity. This feature was added based on statement 9, being offered a summary of advice scored high.
- A page was removed where the employee was shown detailed insights on their own profile. This feature was removed as the managers don't want the tool to interact too much with their employee as statement 15 scored low.

The co-design concept with notes to indicate the changes can be found in appendix U

7- VALIDATING THE TOOL

7.1 - Purpose of validating the tool

The concept has been created based on insights from managers about the subject and the theoretical idea of a tool that could aid them integrate generative AI. Yet to make sure that the managers would be satisfied with the tool the concept needs to be validated. The validation process will be done to validate the existing concept and recommend changes to the concept for future iterations. The validating will also shine a light on the before mentioned vision and the statements that were derived from that vision. By taking the vision into consideration during the validation a validation can be done on that vision, if the concept succeeds in fulfilling the vision. Therefore the criteria that is used for the validating are the vision statements, the participants will rate on how much the tool fulfills these statements.

7.2 - Validating protocol

Initially the plan was to test a prototype of the tool with the intended users, yet due to the lack of prototyping possibilities a different approach is taken. The different testing protocols can be found in appendix V and appendix W.

To start the validating process a survey is sent to multiple managers. In this survey a video is placed where the concept is introduced and explained. In the video a walkthrough of using the tool is shown. This is done to avoid confusion on what the concept should accomplish and why it does what it does. This ensures the feedback is based on the correct perspective of the manager.

When the video is watched, the manager can fill in the survey that is made to collect feedback. The survey can be found in appendix X. The first question asks the manager to write down general feedback. After the general feedback the manager is asked to fill out a question where the manager can rate the vision statements. This is done to validate the vision and if the concept fulfills the vision that it is created on.

The final question in the survey is a final question for the manager, where they have to write down three positive and three negative things about the concept. This is done to make sure the feedback is not too general and or neutral. By forcing positives and negatives the outliers of the concept will become apparent. This will mark the end of the testing and the manager is thanked in the survey for their time and effort.

7.3 - Results validating process

Due to time restrictions the validation survey has a lower than desired number of responses. In this piece the number of responses will be treated like they are relevant as this helps to validate the concept in a meaningful way. The responses can be found in appendix Y

The general feedback from the participants was fairly one-noted. The concept seems interesting and topical. The question in the survey could have been too general and some more facilitation towards an answer with more depth could have helped in the validation process. Yet the general feedback does show interest and understanding towards the value of such a concept.

To further validate the concept the participants have rated multiple vision statements, these statements are made to reflect what the concept intended purpose is. The outcome of the survey therefore shows what parts of the purpose are fulfilled and or which parts of the purpose could be pursued. The vision statements and their rating score can be found in table 4.

Table 4: Vision statement rated for the final concept

Nr.	Statement (The tool..)	Rating Score
1	gets me thinking on the implications of integrating generative AI in my team.	3.8
2	helps me come more competent with generative AI.	3.8
3	gives personal advice for my own integration process.	3.8
4	saves me time in researching advice and information about generative AI.	3.5
5	provides insights on the risks and benefits of generative AI.	3.0

As mentioned in the value survey it can be an issue that the participants answer the same value to every question. This issue is not too large because of the nature of the validation process, in this case there will not be a further focus on development but more on reflection. Therefore if the scores are all the same it will not hinder the reflection process.

Statement 1, 2 and 3 all scored the highest out of the five statements. It makes sense that these statements score higher than the other two. This could be the case because these three statements are statements that are directly addressed by the function of the tool. Statement 1 focuses on integration of generative AI in the team, this is directly addressed

by the advice part that the manager receives of the concept. Statement 2 is also directly addressed by the training feature of the tool. Finally statement 3 is also directly addressed because all the advice is personal.

The rest of the statement are more side effects and not truly features on its own. Statement 4 mentions about saving time, which the tool could do yet it can be harder to measure and or realise. Statement 5 is also not directly addressed because there is not a specific risk or benefits part in the concepts. Some risks and benefits are discussed in the advice and education parts. The lower score can also be attributed to the lack of discussion surrounding these features in the video and the survey.

In the final questions of the survey the participants asked to write down something they like about the concept and something they would change about the concept. In figure 35 a collection of statements can be seen, the green statements are positive and the red statements are changes.

Figure 35: Tips and tops from the managers in validation survey



As aforementioned the easy to use aspect of the tool shines through, because of the different types of managers it seems that this is a need that is met. Moreover the tool seems topical and relevant yet could show more implications of this new movement. The fact that the employees are integrated seems to be interesting even though in the video from the survey it has not been shown in great detail. Because of the different types the opinion on the complexity of the concept is divided. Some might want to delve more in depth while others would enjoy a more streamlined concept. Furthermore an interesting question is asked on who could be responsible for the advice given if it goes wrong. A disclaimer at the start of using the concept would take this liability away.

7.4 - Recommended changes to tool based on results

The validation process is to check on whether the concept connects to the targeted audience. This means that if there are elements that in the validation process came up short, minor suggestions can be made to enhance the concept. The following insights led to the corresponding suggestions:

- Highlight certain benefits and risks of certain generative AI methods so it becomes more clear what people can expect when using those methods. This change is based on the low response towards statement 5.
- The question was raised on who is responsible for following the advice. Therefore a disclaimer should be added at the beginning of the usage of the tool. The consequences of the following advice are the responsibilities of the owners of the tool.
- Insert an option in the beginning of the usage of the tool that can streamline the experience for the different users. This option can be implemented because of the mixed responses about the number of features.

8- CONCLUSION VALUE OF TRANSFORMATION TOOL

In the validation process no major issues came forward that needed to be addressed and therefore the value of the concept as it is is high enough to proceed. Before actual value can be determined the following steps can be prototyping and testing. Before the next steps are taken an accurate determination of value can not be created.

8.1 - Benefits and pain relievers of the tool

The tool is made to assist managers in integrating generative AI in their teams. This means that the tool offers benefits and relieves pains in that area.

8.1.1 Benefits of the tool

- **Date driven decision making:** The tool can enhance decision making processes by analyzing data, providing valuable insights and recommendations to managers.
- **Skill development:** Managers can improve their skills in using AI through personalized training options, making sure that they are competent with the useful generative AI's.
- **Informing about opportunities:** The generative AI landscape is large and ever changing. By offering opportunities the tool removes a large part of research and reduces the trial and error process.
- **Aligning with the team:** The tool makes sure that the manager is up to date with what the needs and wants of the team are and can therefore strategically make plans to integrate generative AI in their teams.

8.1.2 Pain relievers of the tool

- **Lack of understanding:** Many managers may lack a clear understanding of generative AI. The tool addresses this by offering advice and training to bridge the knowledge gap. This will aid in their ability to integrate generative AI in their team.
- **Uncertain starting point:** Managers might be hesitant to start because of the many opportunities. The tool removes decision making and offers a starting point for the managers to focus on.
- **Ineffective implementation:** The tool guides managers in the effective integration of generative AI, minimizing disruptions and ensuring a smooth

transition.

- **Lack of personalization:** More general advice and solutions may not address specific team needs. The tool resolves this by allowing managers and employees to create personalized profiles. This helps in tailoring AI integration to their unique needs.
- **Skills gap:** The tool helps bridge the skills gap by offering training options, ensuring that managers are capable in using generative AI and in helping their team use generative. The tool also aids in aiding their teams acquire the necessary skills to maximize the benefits of generative AI.

8.2 - Research questions answered

The questions that are asked in the beginning of the report are answered in this chapter. This

1. **Need for a tool:** Is there a need for a tool that assists managers in integrating generative AI in their teams?
 - a. The literature review shows that there are multiple sources that indicate a rise in the technology of generative AI and also the integration in businesses. The interviews indicate that employees are already using generative AI and some managers as well yet competence and knowledge is lacking for both parties. Therefore a tool that can aid these parties in overcoming these hurdles is considered valuable and thus there is a need.
2. **Perceived benefits and risks of generative AI:** What do stakeholders think are the benefits and risks of generative AI?
 - a. In the interviews with the stakeholders it became noticeable that one of the biggest positive effects of generative AI is that people can work better and or more efficiently. The stakeholders are in general looking positive towards the integration of generative AI in the workplace. Yet their concerns mostly lie in that they lack experience and confidence in using generative AI. In this lack of knowledge they experience some concerns in what they should use it for and for what they should not.
3. **Areas of need:** Where do managers need the most aid in integrating generative AI in their teams?
 - a. In the interviews with the managers it became apparent that one of the largest hurdles for a manager to integrate generative AI into their teams is their lack of knowledge and experience. Because they lack knowledge and experience managers might not know where to start. Therefore the tool is designed to solve these issues.

4. **Co-designing:** How does having a co-design session impact the design process of the tool?
 - a. The co-design session shifted the design directions more towards employee integration into the tool. Before the co-design session the tool had no interaction with the employee, the co-design session helped in uncovering an opportunity to incorporate employees to make the experience for the manager more valuable. Another feature that was implemented because of the co-design was the option to exercise with generative AI. The tool before the co-design session focussed more on awareness, informing and providing advice. The tool did not drop any of those qualities yet it was enhanced with more options to integrate generative AI for the managers.
5. **Valuable asset for the tool:** What topics, features and insights do managers think are the most valuable for the tool?
 - a. In the survey where managers were asked to rate and rank certain statements to distill values, certain statements came out als the most valuable. Managers want to be: shown options on how to work more efficiently with generative AI, informed about important topics in generative AI, offered a summary of useful advice, offered specific advice for their domain of work and offered a digital tool that is easy to use and access.
6. **Managers' opinion on the tool:** How valuable will the managers perceive the tool in aiding them integrate generative AI in their teams?
 - a. The tool is valuable enough to be considered interesting and score highly on the vision statements. Determining the value at this stage would be impossible, more steps need to be taken to acquire an accurate and honest evaluation of the value. Therefore this research question is not properly answered in this research.

8.3 - Contributions of the project

8.3.1 Knowledge gathered and insights created by various methods

The literature review combined existing knowledge on generative AI, artificial intelligence, management and employee dynamics. This serves as a valuable resource for future academics conducting research in the same domain. It also aided in laying a theoretical foundation for the design of the envisioned tool.

Stakeholder interviews further enriched the project by gathering insights from managers, employees and AI experts. These findings not only contribute to ongoing research but also provide valuable input for business development. The tangible challenges and opportunities identified during these interviews played an important role

in the development of the tool.

A co-design session involving collaboration with designers and a law student brought diverse perspectives to the iterative design process. The combination of insights from different fields and nationalities significantly helped the development of the tool. The following iterations were based on the new perspectives gained during this co-design session.

Survey analysis added a more quantitative perspective by collecting data on what the user thinks is valuable in the tool. The survey outcomes can provide valuable insights for interested parties. Significant changes were implemented in response to the survey results, ensuring a more product fit and an enhanced user experience.

Finally the tool development phase focused on designing the AI-powered tool for aiding the manager and in some parts the employee in integrating generative AI into their teams. The tool accomplishes this by offering personalized advice and training material. This concept was created by incorporating various research methods, including insights from the literature review, stakeholder interviews, co-design session, survey analysis and testing. These methods enriched the tool's value. This approach can also be used for future designers and businesses seeking to integrate diverse research methodologies into their concepts.

8.3.2 The tool's contribution

The concept for a tool aimed at helping managers integrate generative AI in their teams, this can bring multiple contributions on a tool level. These are key contributions that this concept offers:

Tailored guidance: By creating personalized profiles for both managers and employees, the tool ensures that the advice and recommendations provided are specifically tailored to the individual needs and contexts of each team member and the team dynamic. This personalization increases the relevance and effectiveness of the advice, education, tips and training offered.

Efficient integration: The offered advice, education, tips and training can help more easily identify and integrate the right generative AI methods for the team. This helps managers navigate the complexities of incorporating generative AI into their workflow in an efficient and effective way.

Skill development: Offering education, tips, and training based on the profiles of both managers and employees helps bridge knowledge gaps and enhance skill development. This not only benefits the individual team members but also contributes to building a more knowledgeable and capable workforce.

Increased confidence: As managers and employees receive tailored education and training based on their profiles, they are likely to develop greater confidence in their ability to work with generative AI technologies.

Increased Awareness: At the moment of writing generative AI is a relatively new phenomenon and therefore the awareness of the capabilities is low. The excessive amount of offers might also turn off new users. The tool can help bring awareness to the options and the possibilities that generative AI can bring.

Tool's adaptability: The tool's adaptability to the unique needs and wants of each team allows for a flexible approach to generative AI implementation. Different teams may have varied levels of experience, requirements, and goals, and the tool recognizes and accommodates these differences.

Continuous improvement: The tool's own generative AI system is fed with ongoing updates and feedback based on user experiences to make sure there is continuous improvement. This ensures that the tool evolves to meet the changing needs and challenges associated with generative AI implementation over time.

In summary, this concept has the potential to contribute significantly to the successful integration of generative AI in the workplace by providing personalized guidance, developing skills, adapting to unique team characteristics, facilitating continuous improvement and boosting overall confidence and awareness in working with generative AI technologies.

9- RECOMMENDATIONS AND LIMITATIONS

The project encountered several limitations that impact the reliability of its outcomes:

- **Limited literature review:** Due to the late pivot in subjects during the project, the literature review may not fully represent recent developments in generative AI integration and managing employees. To address this limitation, it is recommended that future work includes a comprehensive literature review to ensure a solid theoretical foundation for the designed tool.
- **Limited number of interviews:** The study includes a limited number of participants, potentially affecting the reliability and generalizability of interview outcomes. To enhance the completeness of insights, it is recommended to conduct additional interviews with a more diverse set of participants, providing a more comprehensive understanding of the subject matter.
- **Uncertainties surrounding growth and impact of generative AI:** Acknowledging uncertainties about the future growth and impact of generative AI, it is recommended that the tool's design allows for flexibility and adaptability to accommodate changes in organizational contexts over time. Regular updates and assessments should be conducted to ensure continued relevance.
- **Insufficient number of responses for the value survey:** The limited number of responses for the value survey may compromise the accuracy of findings. To address this, it is recommended to allocate sufficient time and resources for data collection, ensuring a more representative sample and enhancing the tool's alignment with user preferences and expectations.
- **No working prototype for testing:** The absence of a working prototype hinders the validation of the tool and its functionalities. To overcome this limitation, it is strongly recommended that future development prioritizes the creation of a prototype. This prototype is crucial for comprehensive testing, allowing for a more accurate assessment of the tool's effectiveness and usability.

The limitations identified the importance of addressing key areas in future work. A comprehensive literature review, increased participant diversity in interviews, flexibility in design for uncertainties, improved data collection for surveys, and the development of a working prototype are essential steps. These recommendations will contribute to enhancing the reliability and effectiveness of the tool, ensuring it aligns with evolving organizational needs and the dynamic nature of generative AI. Regular assessments and updates remain critical to maintaining the tool's relevance in the fast changing landscape

of generative AI.

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APPENDIX

Appendix A: Interview results

	Manager 1	Manager 2	Manager 3	Manager 4
Q1	Niet veel mee bezig maar heeft het wel eens gebruikt in professionele settingen. Is tijdens gesprek achter de risico's gekomen	Eerst een prive en paar keer uitproberen. Pas een training gevolgd van het ministerie. Tegen collega's gezegd dat ze die training moeten.		
Q2	Alleen gebruiken voor de eerste stap nog niet te veel laten overnemen	Wat ze beoogt daarmee dat ze niet alleen bewust van moeten worden, stimuleren om gebruik van te maken.		
Q3	2 Want eerst zelf de veiligheidsrisico's uitzoeken.	Uurtje in de maand, schaal 1.		
Q4	Hope isTijd winst Concern is er een validatieproces mogelijk zonder ervaren mensen?	Efficiency opleveren en werk makkelijker maken. Writers block hoeft niet meer. Veel makkelijker verbinden met elkaar/ Kunnen we straks nog echt en nep onderscheiden. Internet is samen een vertrouwbaar. Je moet blijven		
Q5	Ik acht mijn team slim genoeg om daar netjes mee om te gaan. Enorm belangrijk dat mensen common sense hebben.	Nog niet zo zeker, is nog bezig met experimenteerfase. Gaat vooral om kunde zodat ze zichzelf kan verantwoorden etc.		
Q6	Geen opdracht en geen beperking. Alleen gezegd dat het bestaat. Er zijn zelfs enorm veel training gegeven.	Gemeenteraad is de baas, de organisatie is heel groot. ICT is er mee bezig. Maar er is geen opdrachtgever die vertelt wat er moet gebeuren. Dat is nu bezig, iedereen doet het los van elkaar		
Q7	Meer illustraties, Opdrachten worden 0.5 geschreven. Volgend jaar meer veiligheid. Gebruiken om te brainstormen en tegen te praten.	Dingen makelijker en sneller maken en meer structuur en geen writers block		
Q8	De eerste IT digitale verandering die geïmplementeerd ziet worden in dit tempo. De goede beschikbaarheid, de consequenties zijn niet helder.	Het moet voor alle soorten leeftijden te gebruiken zijn deze tool		
	Employee 1	Employee 2	Employee 3	Employee 4
Q1	Bewust en fan van ChatGPT omdat het goed is een vertal slag maken en sterk is in tekst schrijven	Bewust van ChatGPT de risico's en de voordelen. Speelt er zelf mee om te kijken wat de mogelijkheden zouden kunnen zijn.	Veel gebruiken (Chat GPT) voor zaken, om gewoon bepaalde templates te formuleren. Ook veel juridische en woorden zoeken. Pitches schrijven. Veel vertalen, boven google translate.	Niet echt, niet nodig gehad. Front office en back office.
Q2	Bedrijf is zoekende. Is nu een verbod op. Wordt toch gebruikt. Zijn nu regels aan het opstellen.	Heeft in de lobby wel richtlijnen staan over het gebruik van AI. Geen verbod. Geen directe opmerkingen over het gebruik van managers.	Geen richtlijnen, de oprichter is zelf super enthousiast en zelfs aangespoord om te gebruiken.	Geen richtlijnen, de oprichter is zelf super enthousiast en zelfs aangespoord om te gebruiken.
Q3	Die restricties komen vanuit IT security. Vanwege dataprotectie en keuzes die te maken hebben met onjuiste informatie.	Bedrijf zelf geeft richtlijnen. Bedrijf security wel om precies te zijn.	De oprichter, geen harde regels of richtlijnen.	Niemand
Q4	3 op basis van al mijn werk en een 6 op basis van wat er allemaal mogelijk is.	1 Heeft veronderstelling dat deze persoon het zelf beter kan. Heeft het wel geprobeerd en kwam wel tot een goed resultaat.	6, ondersteund heel erg maar ik doe het niet uit handen geven. Dagelijks.	1 wilde eigenlijk 0 zeggen

Q5	Hope: Meer image generatie, minder gedoe met mensen op advertenties omdat ze nep zijn. Concern: Fake nieuws moeilijker te onderscheiden	Hope: beter communicatie tegen over elkaar. Concern: Waarheid wordt moeilijk te onderscheiden en mensen worden te gemakzuchtig	Hope: Beter werk leveren en meer werk leveren. Concern: Muziek wordt minder authetntiek. Geen zorg voor eigen baan	makkelijker controles doen, is namelijk saai en kost veel tijd. Ziet zelf geen concerns op het moment.
Q6	Not that confident. Nog onbekend met de prompt engineering. Op een schaal van 1 tot 10 is het 2.	Denkt dat mogelijk een goede prompt engineer zou kunnen zijn omdat er tijdens het werk ook al veel juiste vragen worden gesteld. Persoon is niet bang voor eigen baan.	Zou het beter willen begrijpen, meer gebruiken. Wordt wel steeds beter in prompt-engineering. Redelijk zeker, maar er is ruimte voor verbetering.	Ziet het niet gebeuren in de toekomst, wilt het wel zelf graag gebruiken om verbeteringen te brengen.
Q7	De baas is erg onder de indruk van AI. De CEO heeft een chat GPT gebruikt die hij heeft gekregen van een medewerker.	Niks voor deze persoon, hebben ze er nooit over. De manager is wel bewust van de mogelijkheden.	Baas gebruikt super veel, voor alles zoals mails. Continu opzoek naar nieuwe tools heel actief. Gaat uit van common sense.	Helemaal niet
Q8	Meer gebruik van AI. Meer beeld. Het kan tijd schelen en ook saai werk wegnemen. Bedrijfs AI die kan zorgen voor uniformiteit.	Vormgeven van het verhaal. Niet het verhaal laten maken maar het visualiseren. Sparren om te kijken of er nieuwe inzichten uitkomen.	veel bezig met verschillende niet te voorspellen activiteiten en hoopt dat AI dat beter kan oplossen	Is vooral hulp voor andere afdelingen dus dat zal minder zijn of ze gaat zelf meer met AI werken. Krijgt te weinig verantwoordelijkheden om echt veranderingen aan te gaan.
Q9	T security hoek is enorm belangrijk in deze ontwikkeling, eerst whitelisted worden.	Geloofd in AI en ouderen, hier zouden ze wat mee moeten kunnen. Geschikt maken voor tehuizen en voor de mensen die daar werken.	Auteursrecht, genererende teksten van wie is dat recht. Totaal ongereguleerde bewegingen.	Denk dat AI goed is voor dingen generen maar niet leidend moet zijn, dus de manier om er mee om te gaan is eerder als hulpmiddel en niet definities. En processen te versnellen
	Expert 1	Expert 2	Expert 3	Expert 4
Q1	Werkt bij dat Data en AI. is verantwoordelijk voor dat gerichte producten en nu ook voor wat er met generative AI gaat gebeuren			
Q2	Veel trainingen en cursussen doen. Ook prompt engineering leren door generative AI te gebruiken.			
Q3	Hangt van de specifieke use cases af maar vooral tijd efficiency and productivity gaan omhoog.			
Q4	Voorlichting daarna hoe gebruik je het prompt engineering? Wat is het en wat kun je er mee? Use cases uitleggen.			
Q5	Ziet wel potentiële biased maar is nog niet bang voor banen/. Geloofd er in dat de het de krappe arbeids markt oplost omdat mensen meer kunnen in hun eentje			
Q6	Veel gespecialiseerde modellen, groeit niet super snel meer dan mensen denken en er moet altijd een mens bij zitten.			
Q7	Privacy security aspecten Hallucinatie en bias kant goed begrijpen. Kost kant, kost geld energie en tijd Je moet mensen goed opleiden dat het AI is, wat doet en wat niet doet.			

Q8	Sustainable AI, energieverbruik 300.000 computers staan continu aan hele stad Nijmegen staat continu aan voor trainen en dan moet je het ook nog gebruiken ook.			
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Appendix B: Interview questions AI experts

- 1) Can you provide an overview of your role and responsibilities in AI integration at your company?
- 2) What kind of support, training or resources do you recommend to team members during AI implementation?
- 3) How do you measure the success of AI integration projects? What metrics do you use and what do you look at?
- 4) What advice would you give to managers who are starting to integrate AI into their teams?
- 5) How do you address any ethical or bias-related concerns that might come with AI integration?
- 6) What do you see as the future trends and challenges in AI integration, especially as technologies continue to evolve?
- 7) If you were to highlight three things that every manager should keep in mind when integrating AI, what would they be?
- 8) Are there any other insights you would like to share that we have not discussed?

Appendix C: Interview questions managers

- 1) Have you been aware and or busy of the integration of AI in the workforce
- 2) What are you doing now to make sure AI is well integrated into your team?
- 3) One a scale from 1 to 10 with 1 being the none and 10 being extremely how much time do you spend on making sure AI is incorporated in your team?
- 4) What are your concerns and hopes for the integration of AI in your team?
- 5) Are you confident in your ability to incorporate AI in your team?
- 6) If you are also being managed, how does your manager incorporate AI with you as an employee in your eyes?
- 7) Next year AI is completely integrated, how does your work look like? How are you managing your people?
- 8) Do you have any extra insights on the integration of AI in your team?

Appendix D: Interview questions employees

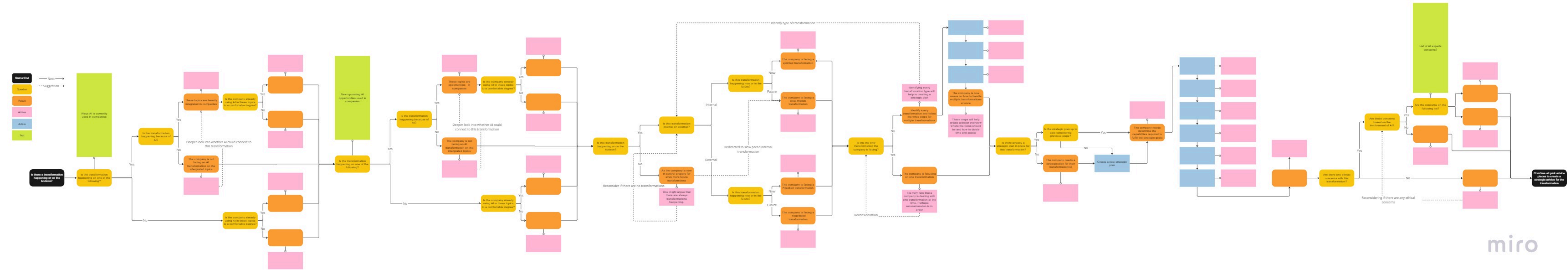
- 1) Have you been aware and or busy of the integration of AI in the workforce?
- 2) What are you being told to make sure AI is well integrated into work? (What guidelines do you have?)
- 3) Who is giving you the directions on working with AI.
- 4) One a scale from 1 to 10 with 1 being the none and 10 being extremely how much do you use AI in your daily work schedule?
- 5) What are your concerns and hopes for the integration of AI within your work?
- 6) Are you confident in your ability to incorporate AI in your work?
- 7) How does your manager incorporate AI with you as an employee in your eyes?
- 8) Next year AI is completely integrated, how does your work look like?
- 9) Do you have any extra insights on the integration of AI in your team?

Appendix E: Coding interviews

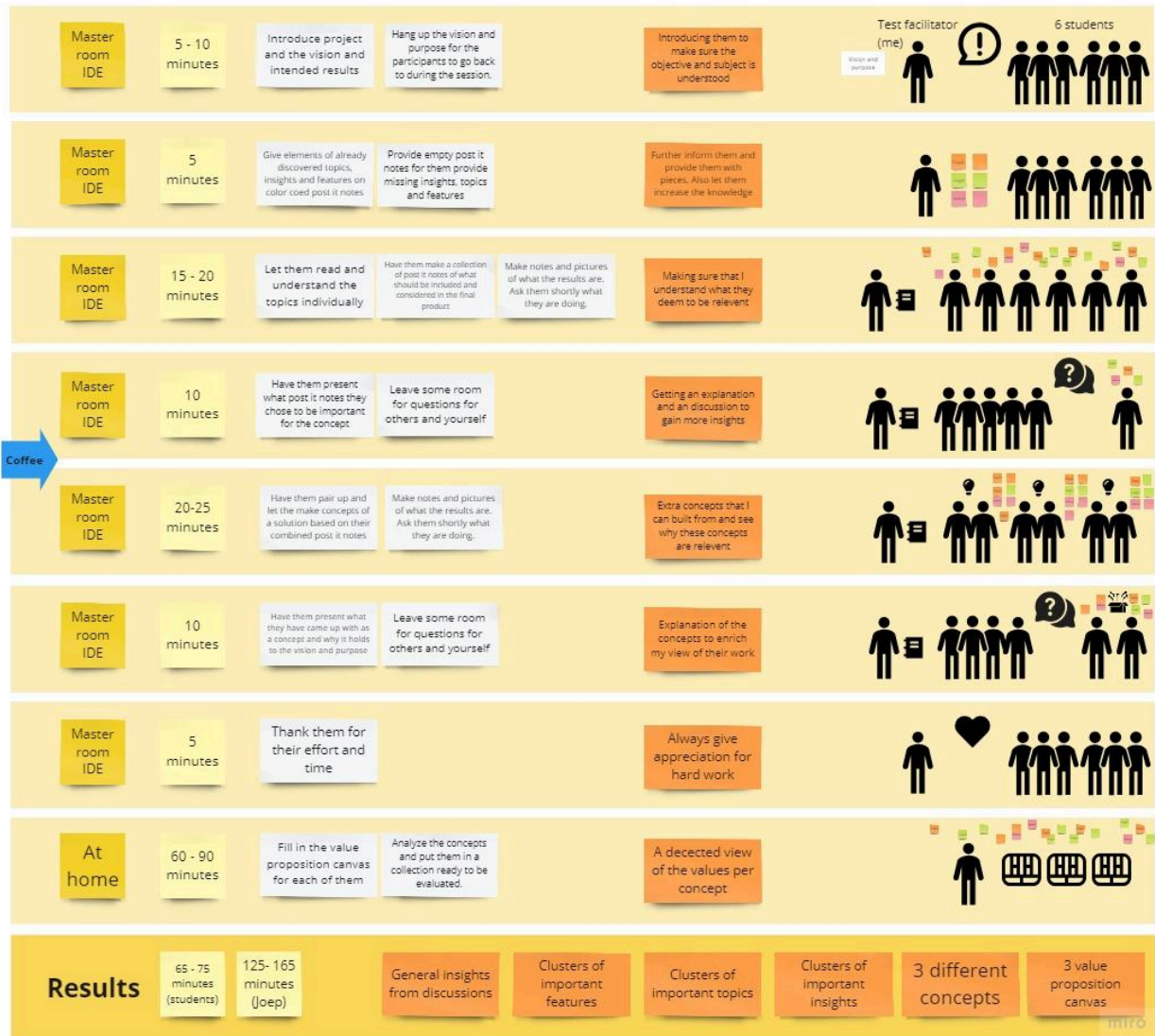


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Appendix F: Initial design



Appendix G: Co-design protocol





WELCOME EVERYONE

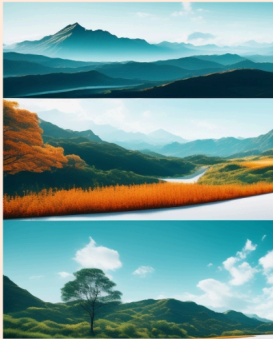
CO-DESIGN

PROJECT GOAL

“To create a tool that assists managers to gain awareness and insights in how to integrate and deal with generative AI in their workforce”

OPPERTUNITY SPACE

Need for insights to navigate
the ever evolving generative
AI landscape



Need for generative AI
integration to gain
competitor lead



Need for insights in
possible risks that
generative AI brings



PURPOSE OF TOOL

- Get managers thinking about integration implications (awareness)
- Give advice for their personal integration process
- Save managers time by providing advice and research
- Provide insights to the managers about generative AI risks and benefits



PURPOSE OF TODAY

- Obtaining multiple perspectives on what topics, insights and features the design should consider
- Gaining extra design suggestion and suggestions in general
- Gaining extra concepts to explore and iterate with



RELAX AND HAVE FUN

Be free and chill, your input is always correct!

Module 1

Name

TOPIC	Cyber Security	Accessibility	Job security	Managing types	Policies	Laws and regulations	Image generation	Text generation	Fake news	Human oversight	Cloud verification
INSIGHT	It should be user friendly	It should not take up too much time	It should be accessible to all users	It should have some form of AI integration							
FEATURE	Gives advice directly	Gives advice afterwards	States a summary of advice	Should be able to generate AI	Should be online	Has to be physical	Has to be digital	Is able to share results			

Post-its

Comment

miro

Module 1

Discussion

Coffee or drinks

Module 2

Team Name: <input type="text"/>	
Canvas Name: <input type="text"/>	
Canvas Name: <input type="text"/>	Canvas Name: <input type="text"/>
Canvas Name: <input type="text"/>	Canvas Name: <input type="text"/>
Products: <div><div></div><div></div><div></div></div>	Products: <div><div></div><div></div><div></div></div>
Concept: <div><div></div><div></div><div></div></div> Type Here...	
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Module 2

Discussion



THANK YOU

LOVE X

Appendix I: Co-design topics, insights and features

TOPIC	Cyber Security	sustainability	Job security	Managing types	Policies	Laws and regulations	Image generation	Text generation	Fake news	Human oversight	Ethical considerations				
INSIGHT	It should be user friendly	It should not take up too much time	It should be understandable for all different types of managers	It should have some form of longevity											
FEATURE	Gives advice directly	Gives advice afterwards	Makes a summary of advice	Give list of important topics in generative AI	Should be online accessible	Has to be physical	Has to be digital	Is able to share results							

miro

Appendix J: Co-design team canvas

Team Name

Type here..

Canvas Name

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Post-its

Canvas Name

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Post-its

Concept

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Comment

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miro

Appendix K : Co-design filled in individual canvases

TOPIC	Cyber Security	sustainability	Job security	Managing types	Policies	Image generation	Fake news
INSIGHT	It should be user friendly	It should not take up too much time		It should have some form of longevity			
FEATURE	Gives advice directly	Gives advice afterwards				Has to be physical	Is able to share results

Post-its

More specific about prompt engineering

Human oversight

Laws and regulations

Text generation

Ethical considerations

What is responsibility? What happens when something goes wrong?

It should be understandable for all different types of managers

It should map all potential risks

It should show an overview of tools

It should have an overview regarding responsibilities and their in cooperation with privacy issues

Give list of important topics in generative AI

Should be online accessible

Has to be digital

Makes a summary of advice

Have a flowchart of actions to take

Comment

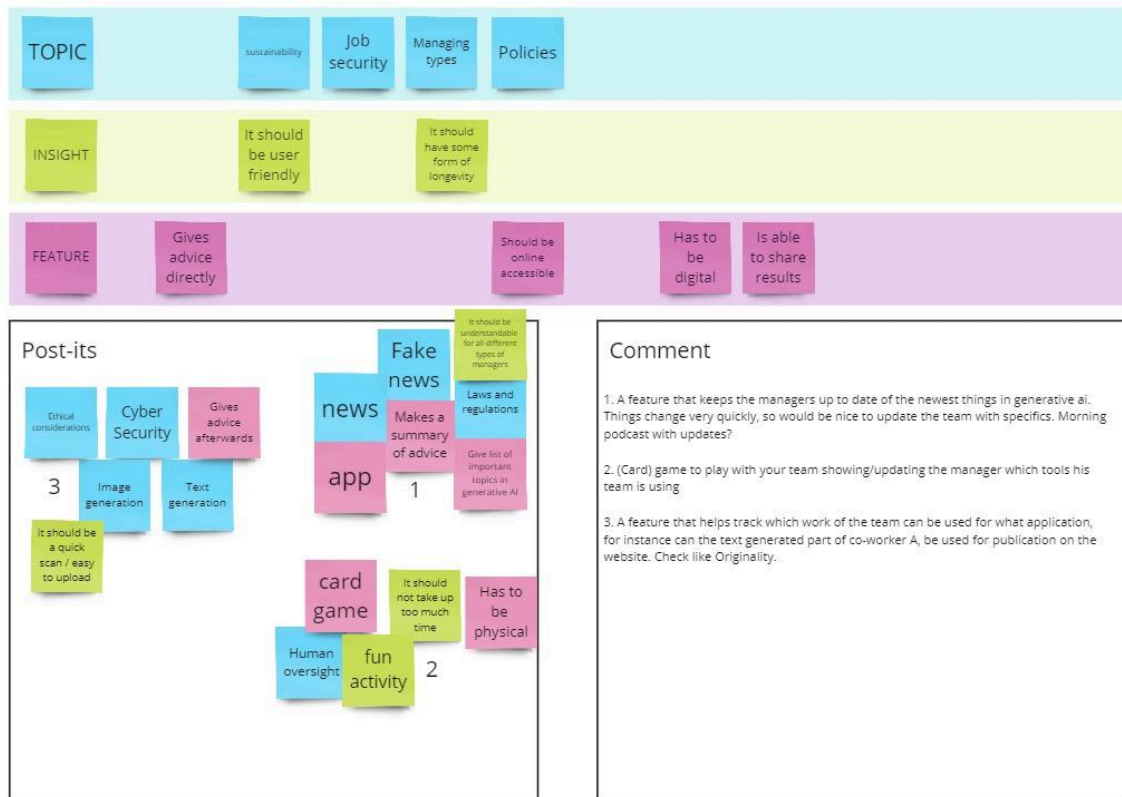
I think potential risks of GenAI is one of the most important topics of current use of AI. For instance, that there are potentials of hallucinations, that the overall generation of GenAI is actually quite basic and not very original.

Which kinds of actions or functions can AI be used for and which ones cant be used. (For example: You can use it for analysis an summaries but not for personal desicion making, ethcis)

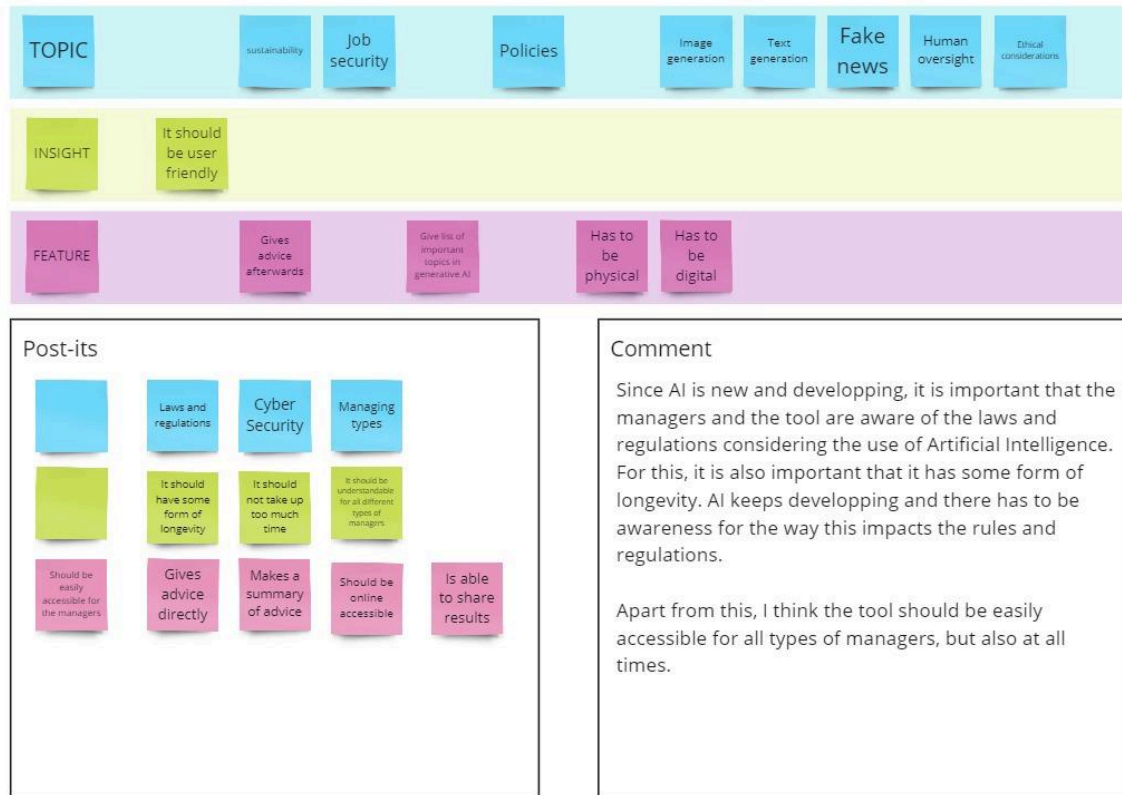
Potential pitfalls could be shown in the tool to be able recognize when it is used incorrectly.

There are many current issues with responsibillity of AI actions, for instance when doing something illegal, who can be blamed?

miro

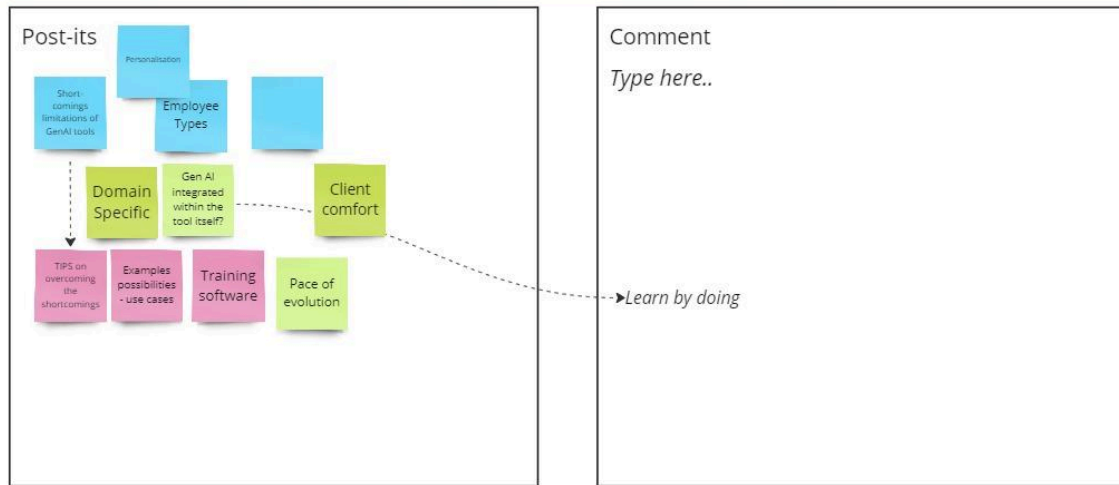


miro



miro

TOPIC	Cyber Security	sustainability	Job security	Managing types	Policies	Laws and regulations	Image generation	Text generation	Fake news	Human oversight	Ethical considerations
INSIGHT	It should be user friendly	It should not take up too much time	It should be understandable for all different types of managers	It should have some form of longevity							
FEATURE	Gives advice directly	Gives advice afterwards	Makes a summary of advice	Give list of important topics on generative AI	Should be online accessible	Has to be physical	Has to be digital	Is able to share results			



miro

TOPIC	Cyber Security	sustainability	Job security	Managing types	Policies	Laws and regulations	Image generation	Text generation	Fake news	Human oversight	Ethical considerations
INSIGHT	It should be user friendly	It should not take up too much time	It should be understandable for all different types of managers	It should have some form of longevity							
FEATURE	Gives advice directly	Gives advice afterwards	Makes a summary of advice	Give list of important topics in generative AI	Should be online accessible	Has to be physical	Has to be digital	Is able to share results			

Post-its

Technology usage pattern by employees	Aspects of work that need speeding up	Aspects where AI will be better than human	Health and wellbeing
Managers should get feedback from employees about the aspects do they employees use it in their work	Managers should get data from employees about tasks that need to be accomplished as a future goal	Understand tasks where AI will be faster than human	Understand what aspects of AI are causing mental health issues
Most desired AI tools	let AI accomplish this task	take help or let AI do the task	Connect a psychological tool or therapy sessions
Physical + digital	Physical + digital	Physical + digital	physical digital detox tool

Comment

connect everything to data based insights

miro

Appendix L : Co-design filled in team canvases

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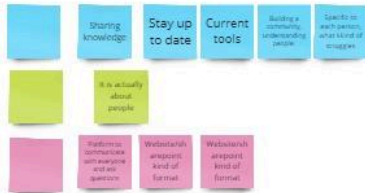
Team Name

Akshay + Wolf

Canvas Name

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Post-its



Canvas Name

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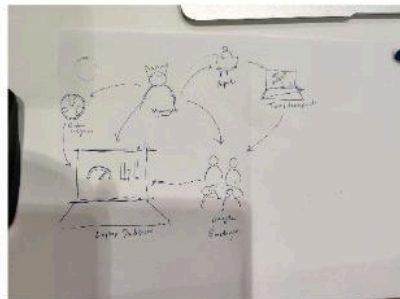
Post-its



Concept



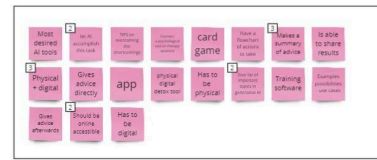
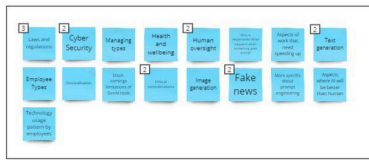
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Appendix M : Co-design insight sheet



connect everything to data based insights

1. A feature that sends the managers up to date of the latest things in generative AI. Things change very quickly, so it would be nice to update the team with specific, warning. Which kinds of actions or functions can AI be used for and which ones can't be used. (For example: You can use it for analysis on summaries but not for personal decision making ethics)
2. Client game to play with your team showing updating the manager which tools has been testing
3. A feature that helps track which work of the team can be used for what application. For instance can the text generated part of co-writer A, be used for publication on the website. Check the originality.

I think potential risks of GenAI is one of the most important topics of current use of AI. For instance, that there are potentials of hallucinations, that the overall generation of GenAI is actually quite basic and not very original.

Potential pitfalls could be shown in the tool to be able recognize when it is used incorrectly.

There are many current issues with responsibility of AI actions, for instance when doing something (legal, who can be blamed?)

Since AI is new and developing, it is important that the managers and the tool are aware of the laws and regulations considering the use of Artificial Intelligence. For this, it is also important that it has some form of longevity. AI keeps developing and there has to be awareness for the way this impacts the rules and regulations.

Apart from this, I think the tool should be easily accessible for all types of managers, but also at all times.

Summary of notes

Everything should be connected based on the data provided by the managers and then turned into insights. Managers should be kept up to date because of the ever changing landscape. Perhaps the tool can be a bit more fun than just a tool, to incentivize the use of it. The tool should also check in with the employees so that the managers know where the focus is and what needs to be addressed. In these education session all the relevant functions generative AI can provide should come to light. Another large focus should be on the risks and how to avoid them. Also the issue of responsibility when it comes to AI generated content is to be discussed. Furthermore the laws and regulations can be discussed. On a final note the tool should be easy to use.

Co-design notes:

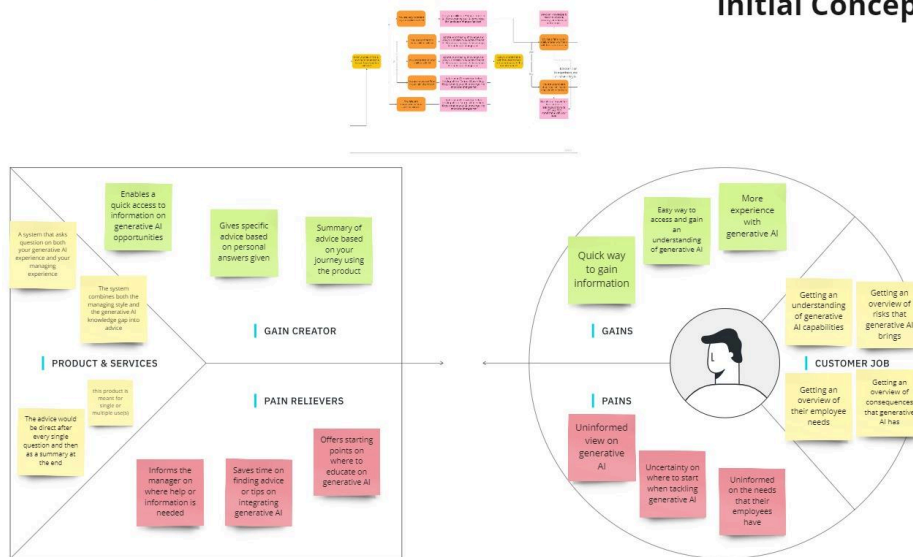
There is room for a more specific tool, some don't believe in a tool that can prove so much information without it being overwhelming.
Very different views on what is important, yet there are points that are just sort of common sense like security.
Ethical is not being brought up at all at the moment.
A lot of talk about it being not just a standard tool so it can be more fun.
It should incorporate AI
Have trouble with the definition of a manager, too broad.

miro

Appendix N : Co-design filled in value proposition canvas

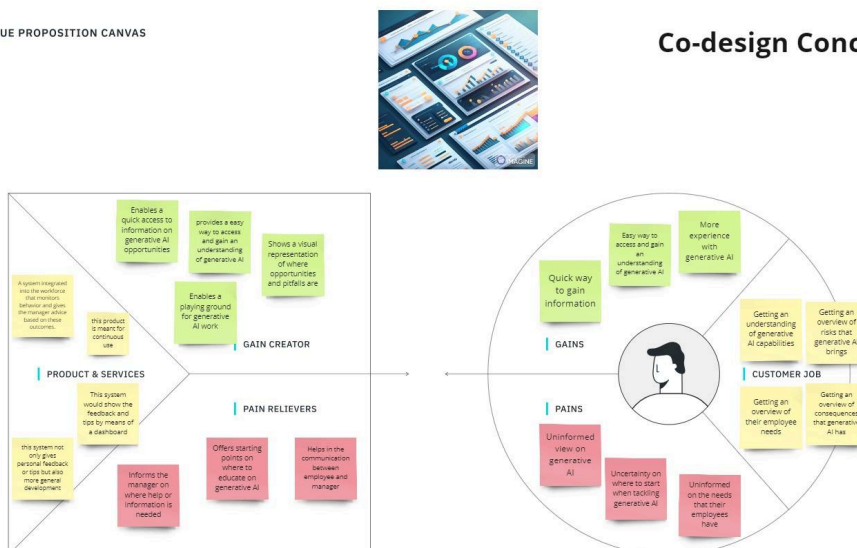
TOOLS | VALUE PROPOSITION CANVAS

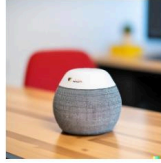
initial Concept



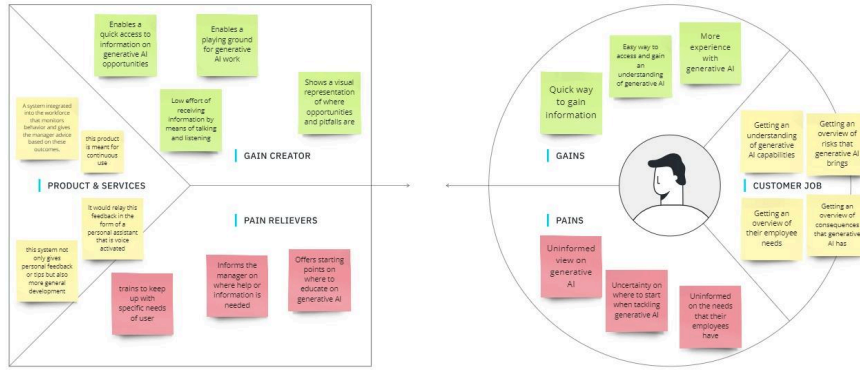
TOOLS | VALUE PROPOSITION CANVAS

Co-design Concept 1





Co-design Concept 2



Generative AI toolkit

Hello and thank you for taking part in this survey. The survey is part of the master Thesis of Joep van Veen at the TU Delft. Your personal information and responses will only be reviewed by the people attached to this project. The survey consists of 25 questions and should take about 10 minutes to complete. On the next page, you'll find information about the topic of the survey.

Next →

Context of the project

This survey is all about a new tool we're creating to help managers navigate the world of generative AI. This tool will help you as a manager be aware and advised in dealing with generative AI movement in the team that you are managing. We want to make sure this tool meets your needs, so we'd love to hear from you, as a manager, about which features you think are most important.

Have you read this carefully? *

☐ Yes

☐ No

Next →

Education and training

These questions will focus on where the tool should help you in education and training.
Please rate the following statements on how much you agree on them.

The tool should keep me updated on current generative AI updates. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should train me with AI text and image generation. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should explain the risks and shortcomings generative AI has. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should show options to work more efficiently with generative AI. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should inform me of use cases that generative AI can bring. *

1	2	3	4	5
Strongly disagree			Strongly agree	

Next →

Education and training

Please rank the following statements from most important to least important. Number 1 being the most important and number 5 being the least important.

◇ The tool should keep me updated on current generative AI updates. *

◇ The tool should train me with AI text and image generation.

◇ The tool should explain the risks and shortcomings generative AI has.

◇ The tool should show options to work more efficiently with generative AI

◇ The tool should inform me of use cases that generative AI can bring.

Next →

Updating and informing

These questions will focus on where the tool should help you in updating and informing. Please rate the following statements on how much you agree on them.

The tool should inform me about important topics (security, sustainability etc.) in generative AI. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should inform me about popular generative AI tools. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should make me aware of the implications generative AI has on the world. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should offer me a summary of useful advice. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should keep me updated on my employees' activities with generative AI. *

1	2	3	4	5
Strongly disagree		Strongly agree		

Next →

Updating and informing

Please rank the following statements from most important to least important. Number 1 being the most important and number 5 being the least important.

◇ The tool should inform me about important topics (security, sustainability etc.) in generative AI. *

◇ The tool should inform me about popular generative AI tools.

◇ The tool should make me aware of the implications generative AI has on the world.

◇ The tool should offer me a summary of useful advice.

◇ The tool should keep me updated on my employees' activities with generative AI.

Next →

Integration and personalization

These questions will focus on where the tool should help you in integration and personalization. Please rate the following statements on how much you agree on them.

The tool should offer its advice specific to my domain of work. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should personalize its advice to me specifically as an individual. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should change its advice and offerings based on my personal progression. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should feel like a personal assistant. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool should have some interaction with my employees. *

1	2	3	4	5
Strongly disagree			Strongly agree	

Next →

Integration and personalization

Please rank the following statements from most important to least important. Number 1 being the most important and number 5 being the least important.

◇ The tool should offer its advice specific to my domain of work. *

◇ The tool should personalize its advice to me specifically as an individual.

◇ The tool should change its advice and offerings based on my personal progression.

◇ The tool should feel like a personal assistant.

◇ The tool should have some interaction with my employees.

Next →

Format and accessibility

These questions will focus on where the tool should help you in format and accessibility. Please rate the following statements on how much you agree on them.

The tool should be easy to use and access for different types of people. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should be usable for less than 5 minutes per use. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should be a digitally accessible tool. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool should have generative AI incorporated in itself to interact with. *

1 2 3 4 5

Strongly disagree Strongly agree

The tool should be a long term tool with continuous use (multiple uses over a long time). *

1 2 3 4 5

Strongly disagree Strongly agree

Next →

Format and accessibility

Please rank the following statements from most important to least important. Number 1 being the most important and number 5 being the least important.

◇ The tool should be easy to use and access for different types of people. *

◇ The tool should be usable for less than 5 minutes per use.

◇ The tool should be a digitally accessible tool.

◇ The tool should have generative AI incorporated in itself to interact with.

◇ The tool should be a long term tool with continuous use (multiple uses over a long time).

Next →

Extra insights

Please leave a comment if you have any comments about this project or survey

Next →

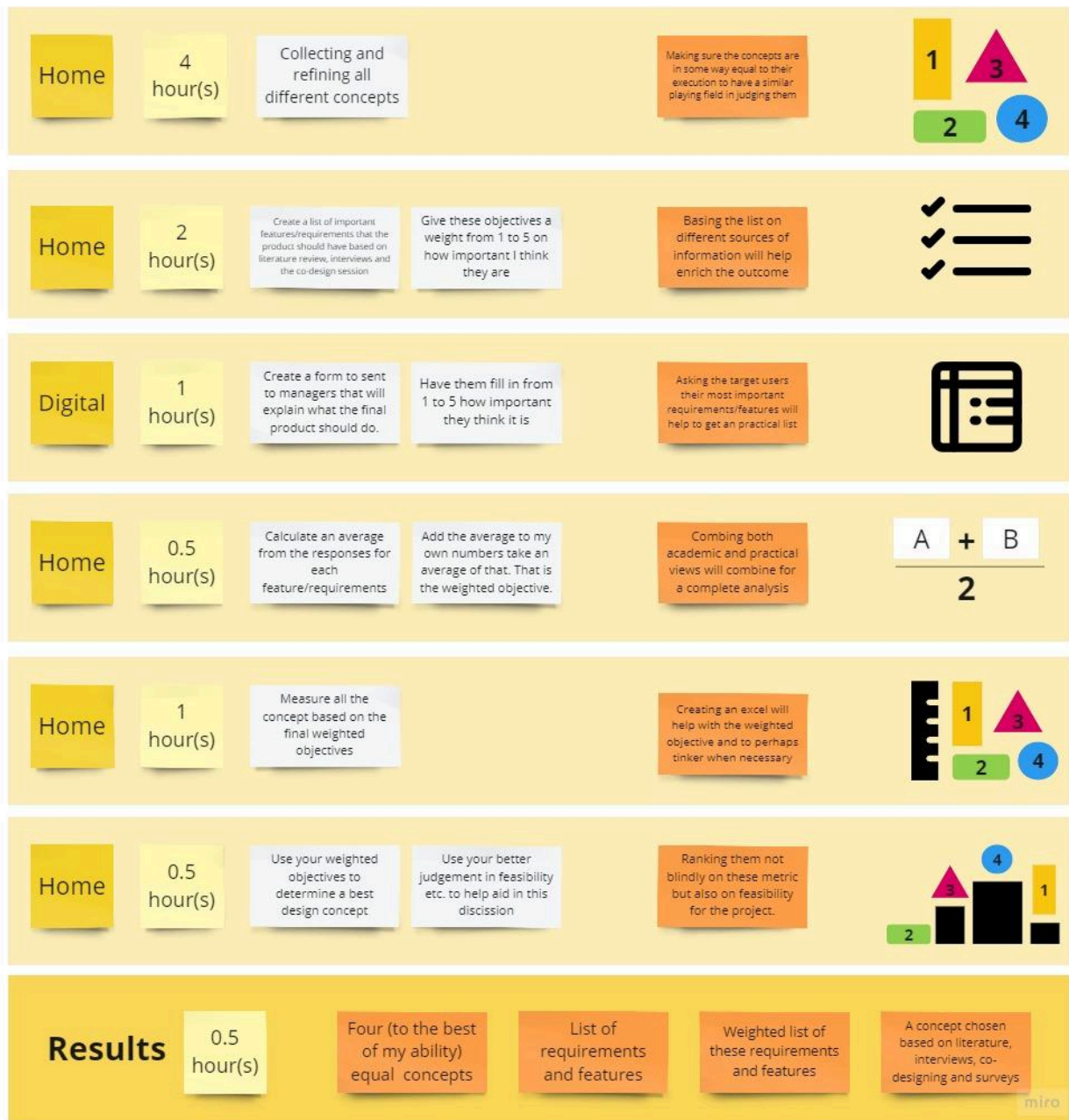
Thank you!

Your opinion is extremely valuable for the success and outcome of this project. Your contribution is very much appreciated.

Would you like to be considered for future involvement (evaluating and testing concepts) endeavors.

Submit →

Appendix P: Weighted objective protocol



Appendix Q: Value survey rating statement responses

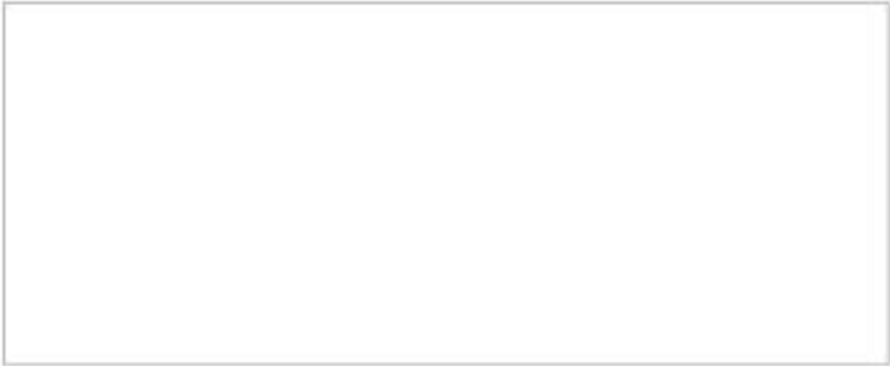
Qu.	The tool should...	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Avg. Qx
Q1	keep me updated on current generative AI updates	5	5	2	3	4	3	4	3	3	4	3.6
Q2	train me with AI text and image generation	5	4	2	4	4	2	4	4	4	4	3.7
Q3	explain the risks and shortcomings generative AI has	4	4	4	4	4	5	4	4	5	3	4.1
Q4	show options to work more efficiently with generative AI	4	4	5	5	5	4	4	4	5	4	4.4
Q5	inform me of use cases that generative AI can bring	5	3	4	4	4	4	4	4	4	3	3.9
Q6	inform me about important topics in generative AI	3	5	4	4	3	5	4	4	4	4	4
Q7	inform me about popular generative AI tools	4	3	4	3	4	4	3	4	3	2	3.4
Q8	make me aware of the implications generative AI has on the world	3	4	3	4	3	3	3	4	3	4	3.4
Q9	offer me a summary of useful advice	5	5	5	5	5	5	4	5	4	4	4.7
Q10	keep me updated on my employees activities with generative AI	4	4	1	4	4	2	2	4	3	3	3.1
Q11	offer its advice specific to my domain of work	4	5	3	4	5	4	4	3	3	4	3.9
Q12	personalise its advice to me specifically as an individual	5	5	2	5	5	4	3	3	4	4	4
Q13	change its advice and offerings based on my personal progression	5	5	4	5	5	2	2	4	4	4	4
Q14	feel like a personal assistant	5	5	5	5	5	3	2	4	4	3	4.1
Q15	have some interactions with my employees	4	4	3	2	5	2	3	4	4	4	3.5
Q16	be easy to use and access for different types of people	5	5	2	3	5	4	5	5	5	5	4.4
Q17	asuable for less than 5 minutes per use	4	2	4	5	5	4	5	5	3	3	4
Q18	be a digital accessible tool	5	5	5	5	5	5	5	5	5	4	4.9
Q19	have generative AI incorporated in itself to interact with	5	5	4	4	4	3	3	4	5	4	4.1
Q20	be a long term tool with continuous use (multiple uses over a long time)	5	5	5	5	4	4	4	4	5	5	4.6
	Average totaal	4.45	4.35	3.55	4.15	4.4	3.6	3.6	4.05	4	3.75	4.0
	Average education and training	4.6	4	3.4	4	4.2	3.6	4	3.8	4.2	3.6	3.9
	Average updating and informing	3.8	4.2	3.4	4	3.8	3.8	3.2	4.2	3.4	3.4	3.7
	Average integration and personalization	4.6	4.8	3.4	4.2	5	3	2.8	3.6	3.8	3.8	3.9
	Average format and accessibility.	4.8	4.4	4	4.4	4.6	4	4.4	4.6	4.6	4.2	4.4

Appendix R: Value survey ranking statement responses

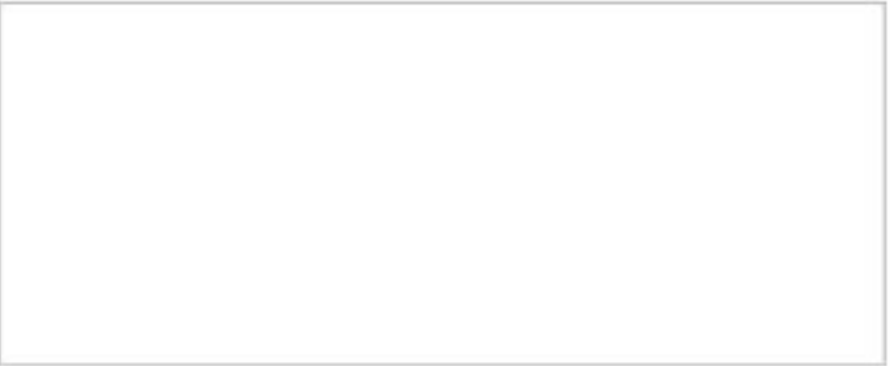
Q1	4.2	keep me updated on current generative AI updates
Q2	3	train me with AI text and image generation
Q3	2.9	explain the risks and shortcomings generative AI has
Q4	1.7	show options to work more efficiently with generative AI
Q5	3.2	inform me of use cases that generative AI can bring
Q6	1.8	inform me about important topics in generative AI
Q7	2.9	inform me about popular generative AI tools
Q8	3.8	make me aware of the implications generative AI has on the world
Q9	1.7	offer me a summary of useful advice
Q10	4.8	keep me updated on my employees activities with generative AI
Q11	2.3	offer its advice specific to my domain of work
Q12	3.1	personalise its advice to me specifically as an individual
Q13	2.7	change its advice and offerings based on my personal progression
Q14	2.7	feel like a personal assistant
Q15	4.2	have some interactions with my employees
Q16	2.3	be easy to use and access for different types of people
Q17	3.4	usable for less than 5 minutes per use
Q18	2	be a digital accessible tool
Q19	3.3	have generative AI incorporated in itself to interact with
Q20	4	be a long term tool with continuous use (multiple uses over a long time)

Appendix S: The final concept

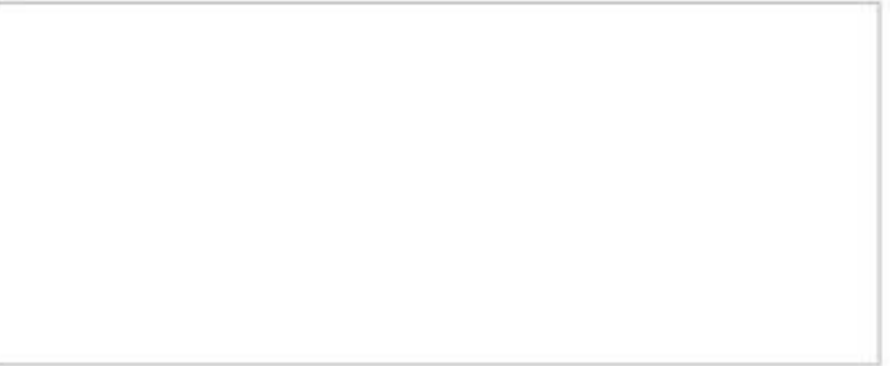
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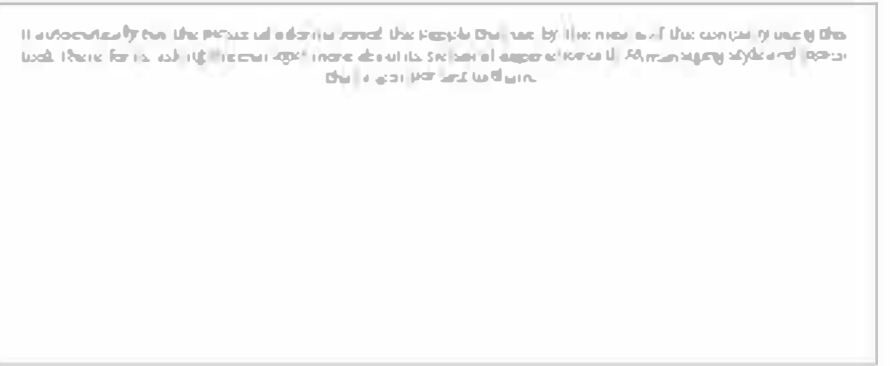
Introducing WOW MA



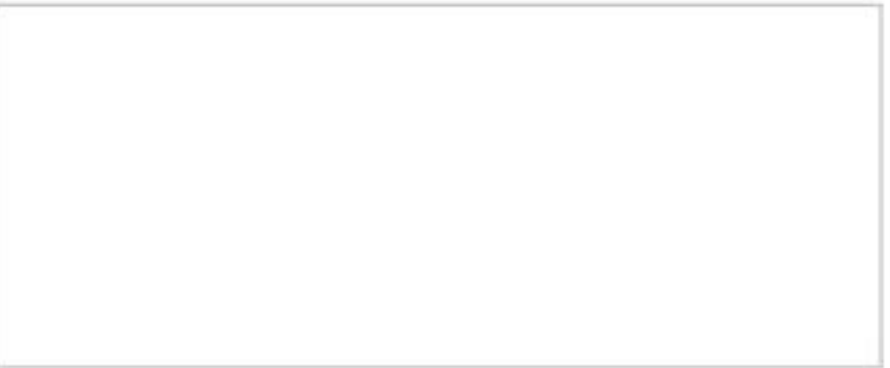
Field of work MA



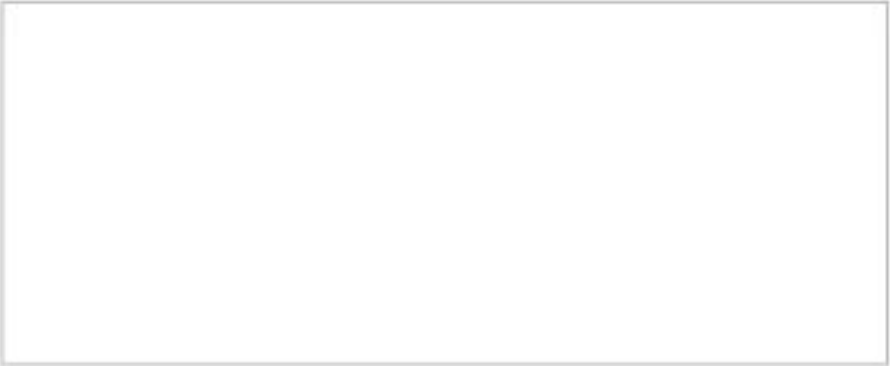
Creating profile MA



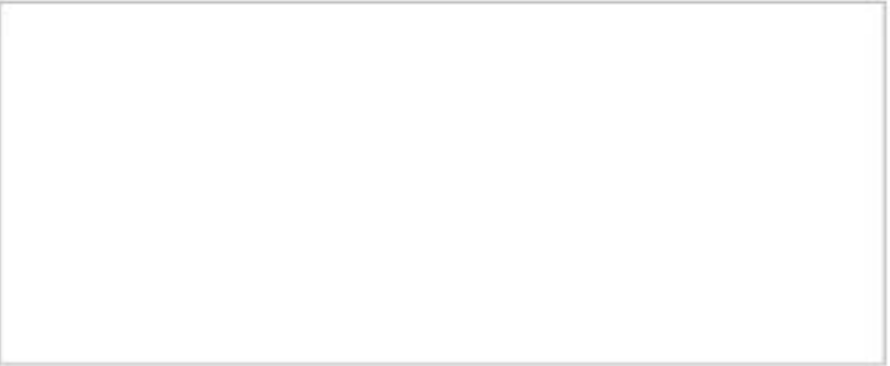
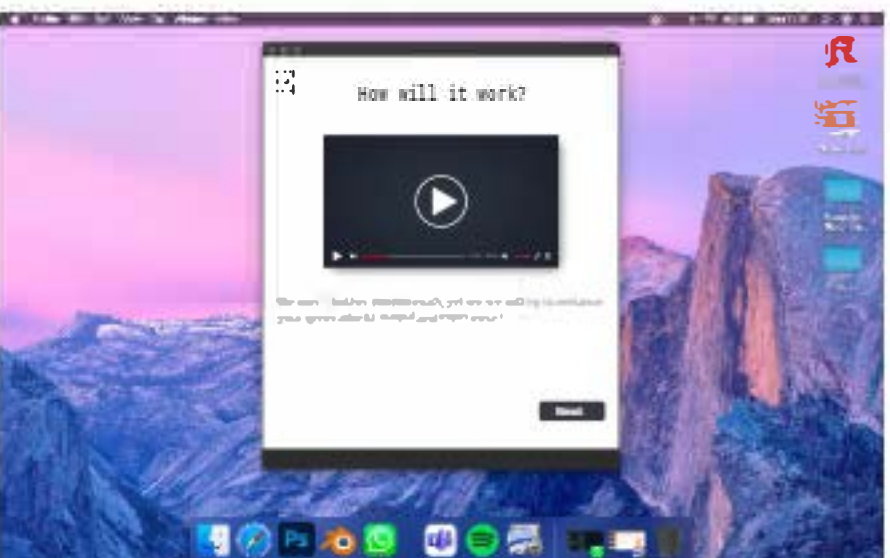
Thanking MA



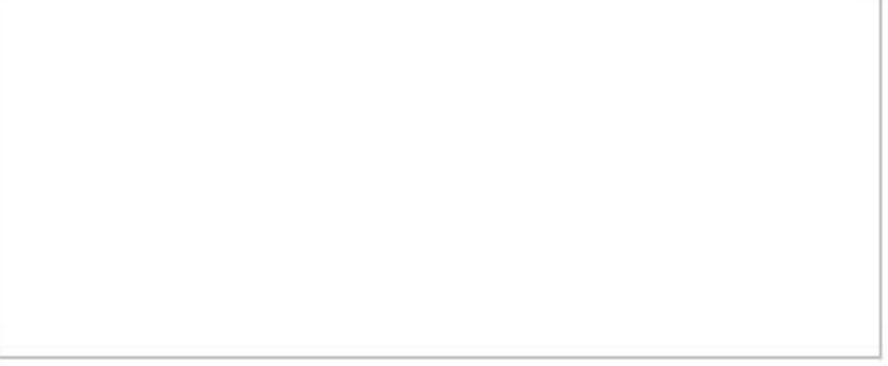
First time start screen EM



Introducing WOW EM



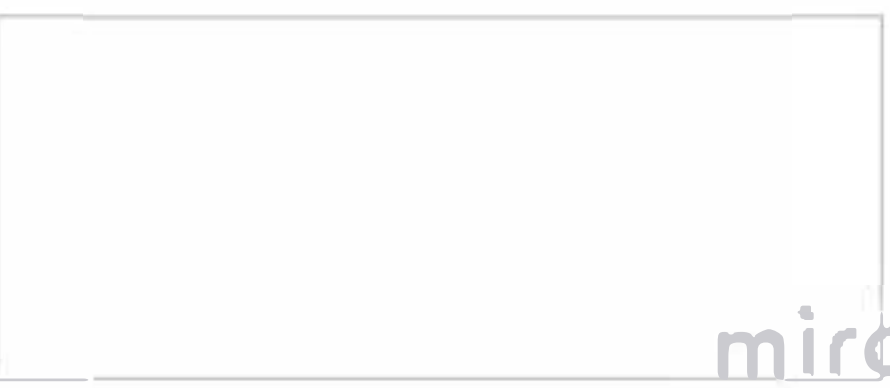
Field of work EM



Creating profile EM



Thanking EM



Welcome Standard MA

Recommending advice MA

Recommend actions MA

Showing insights MA

Recommend training MA

Thanking MA



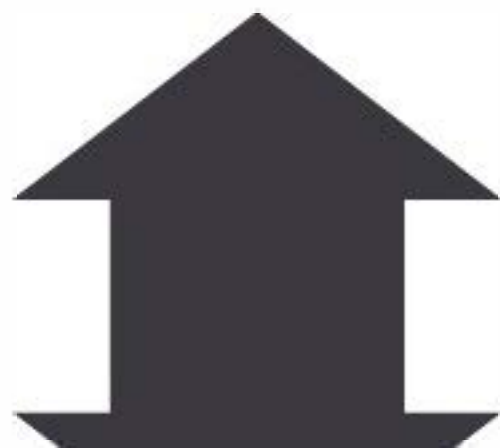
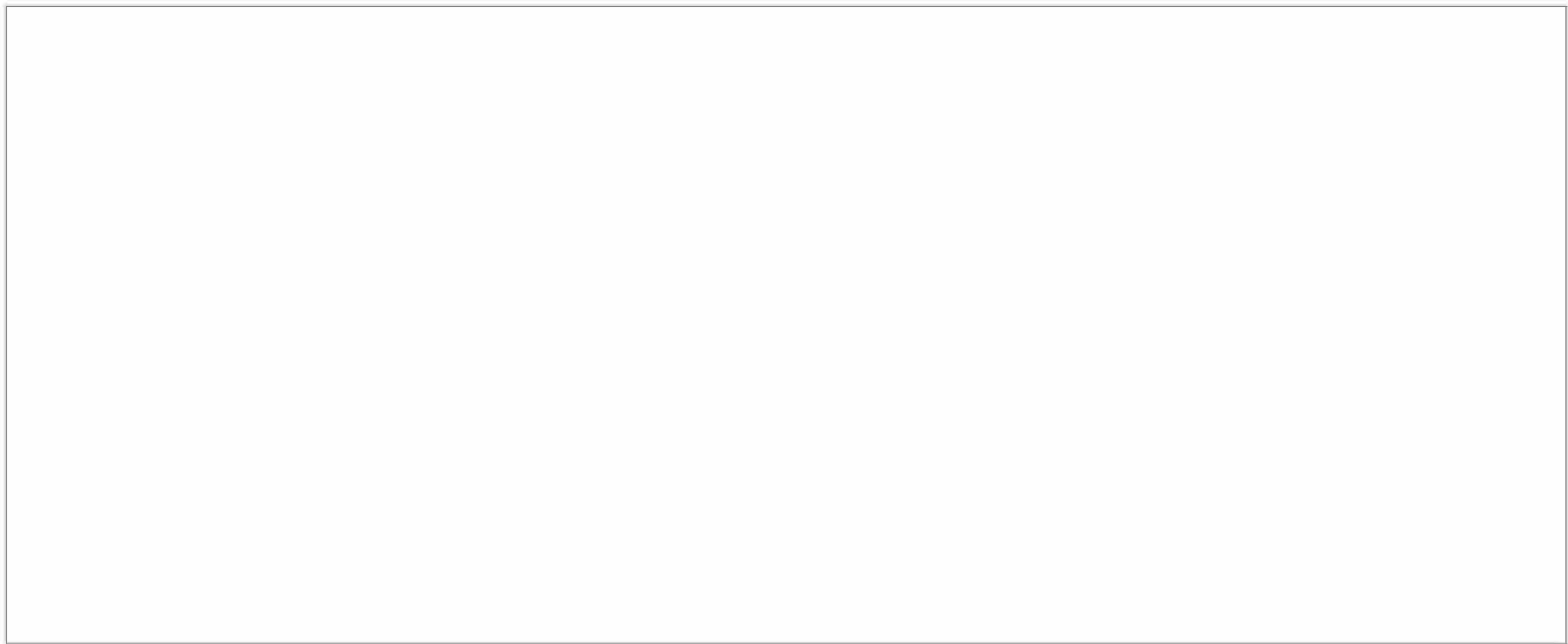
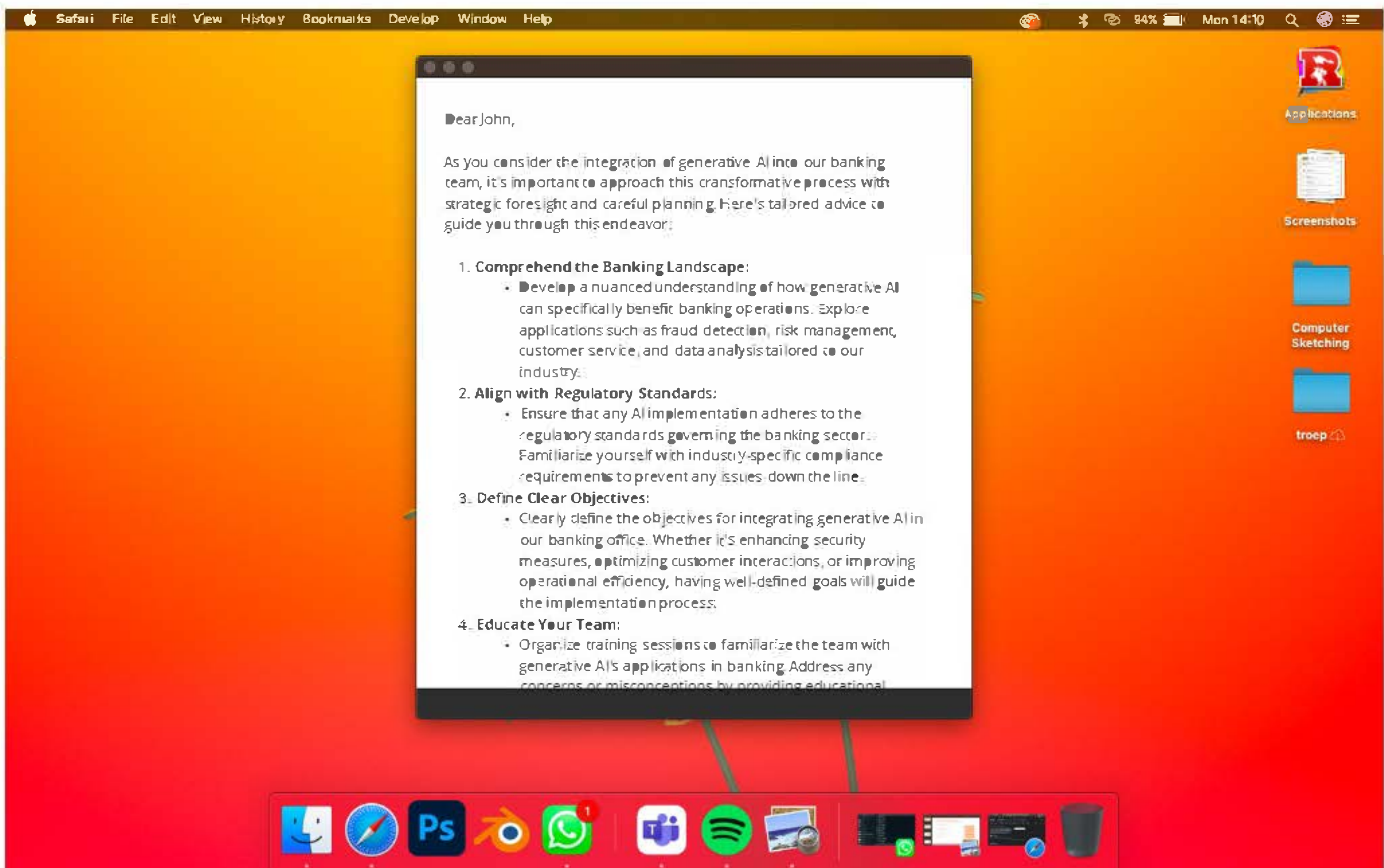
Welcome Standard EM

Recommend training EM

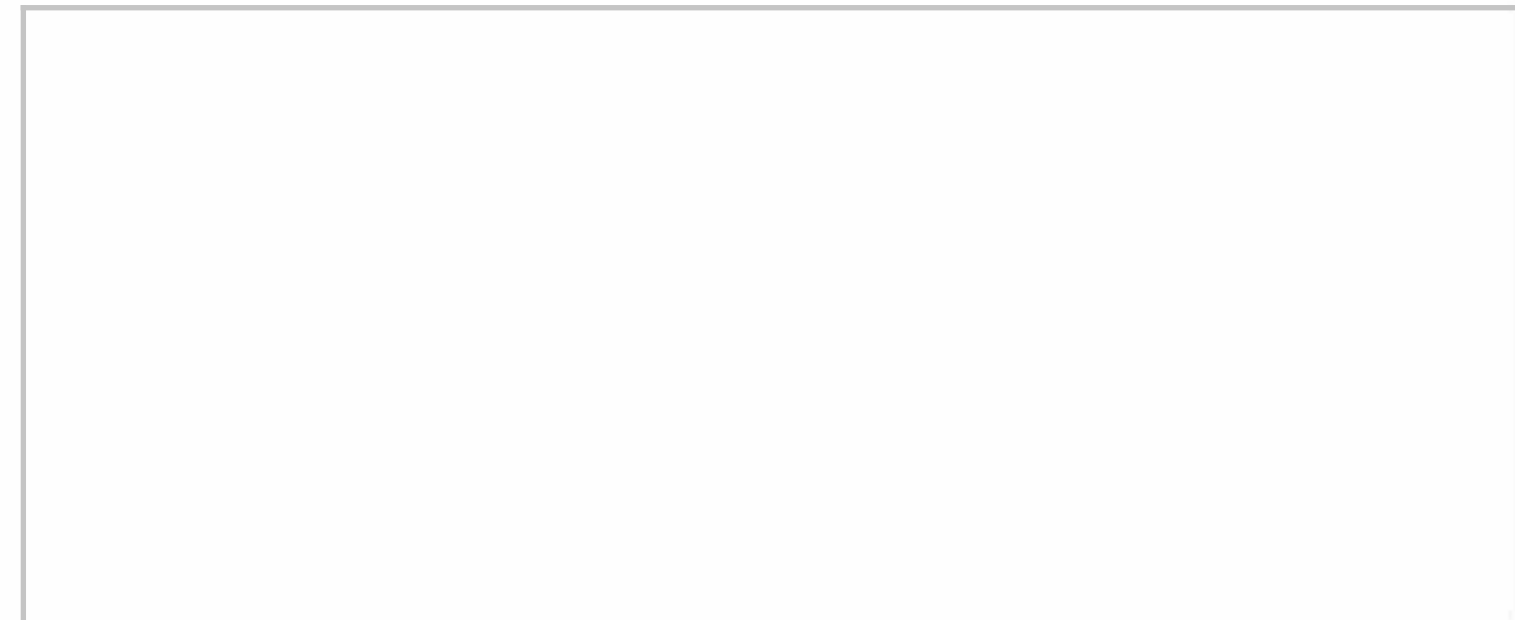
Thanking EM



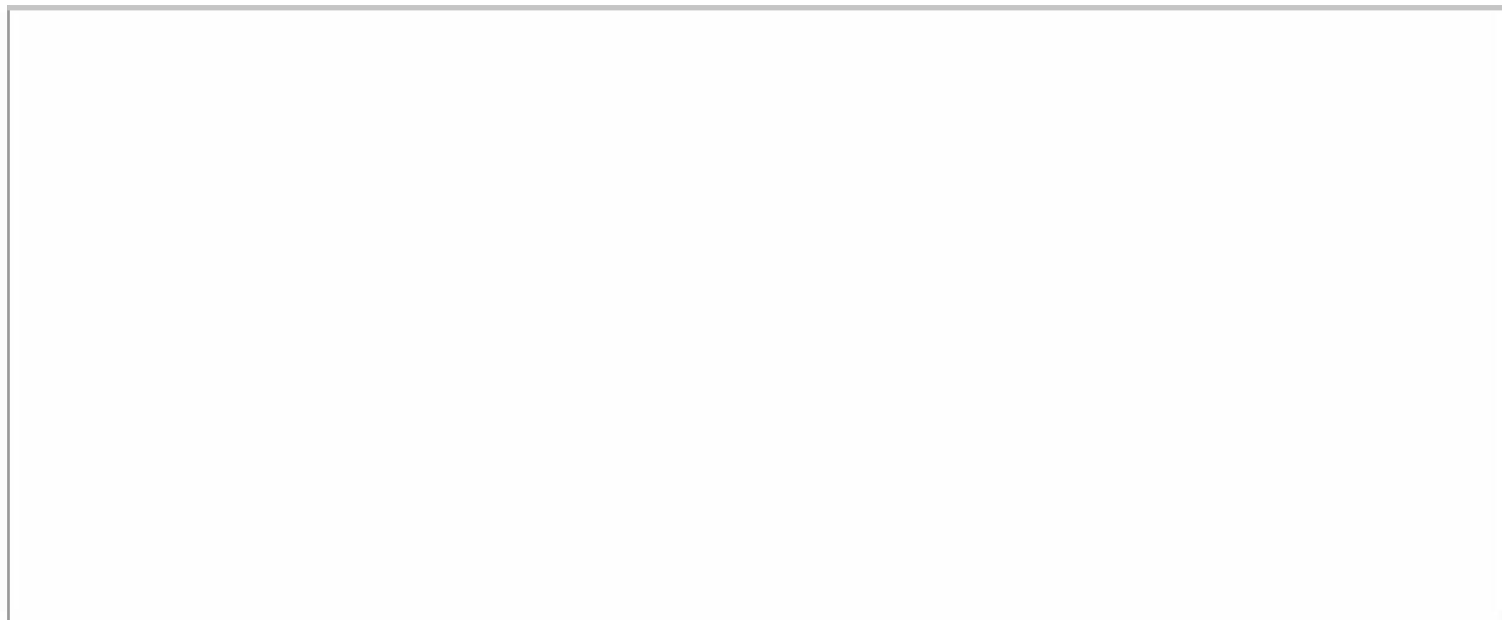
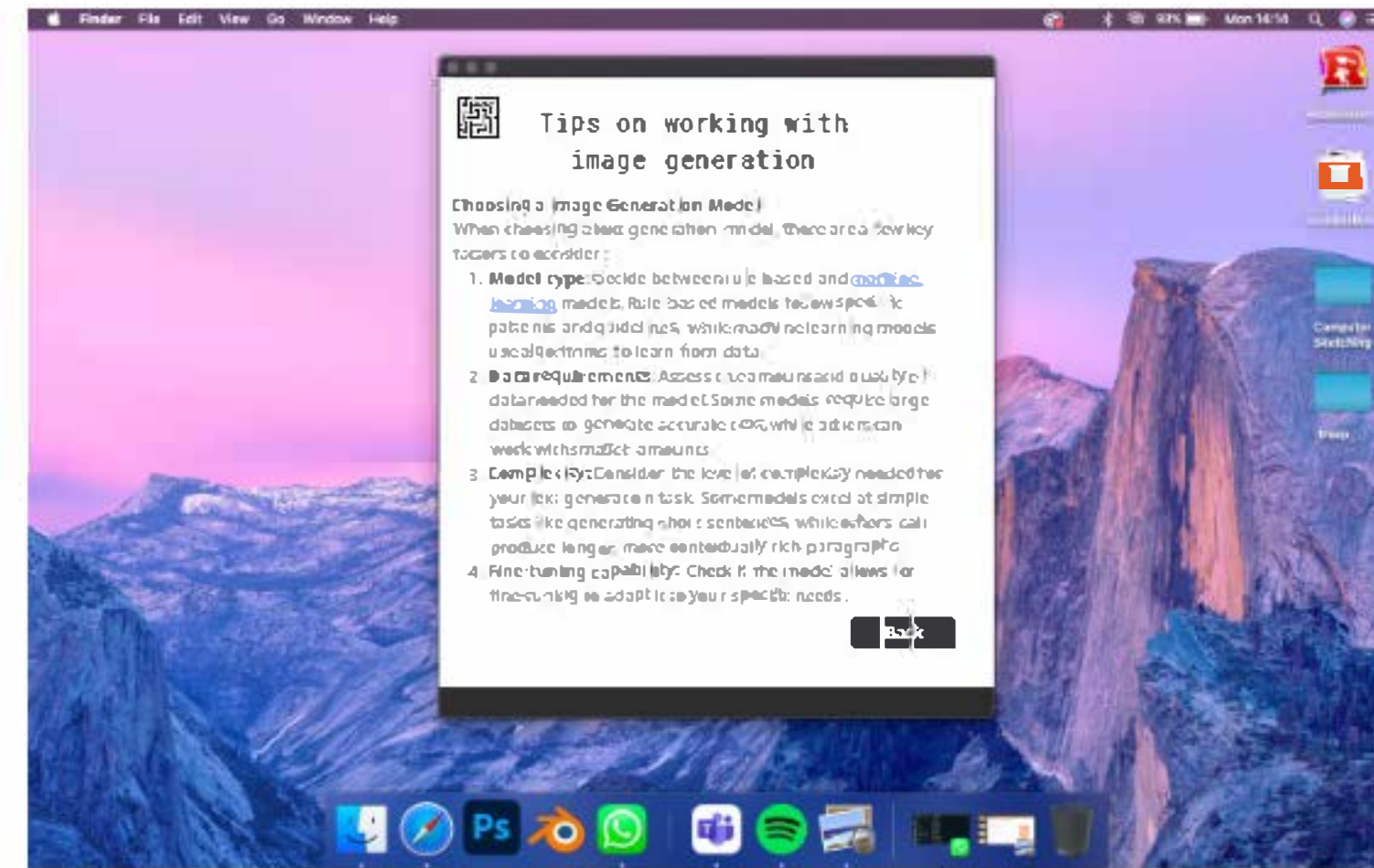
Advice day 1 MA Download



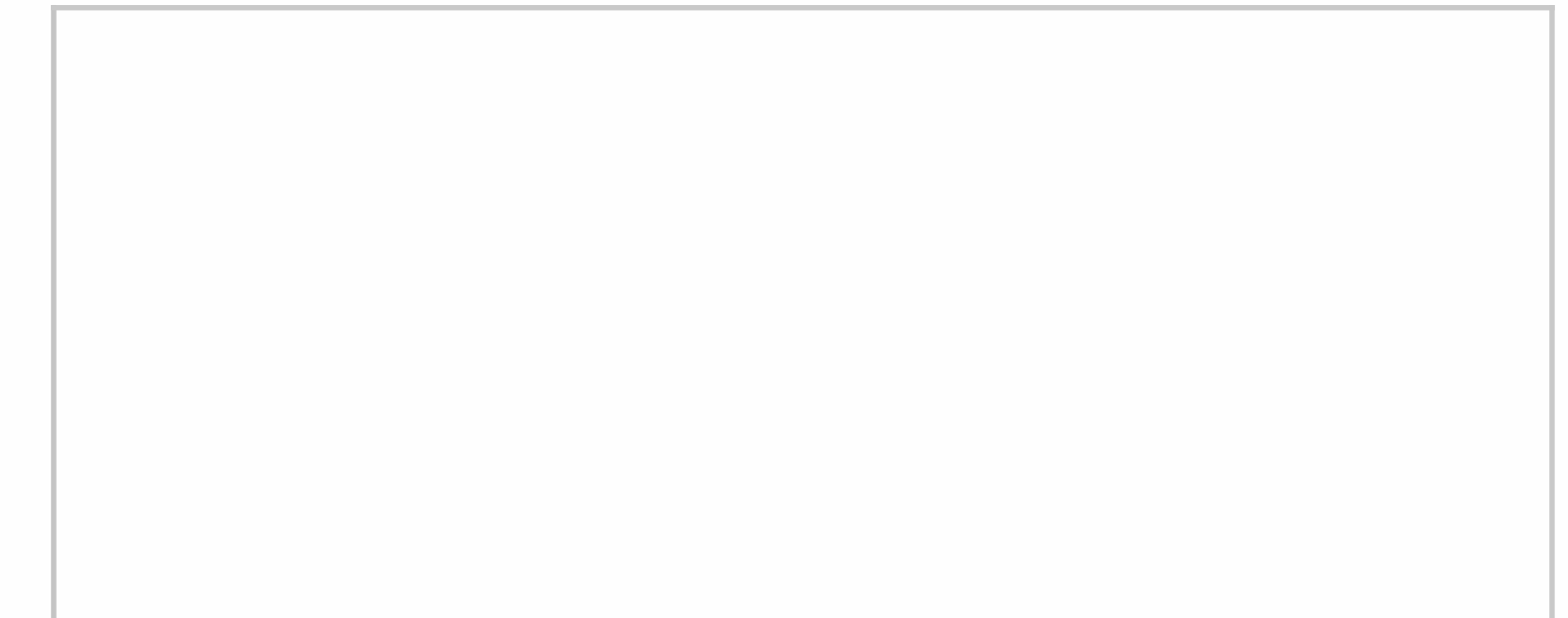
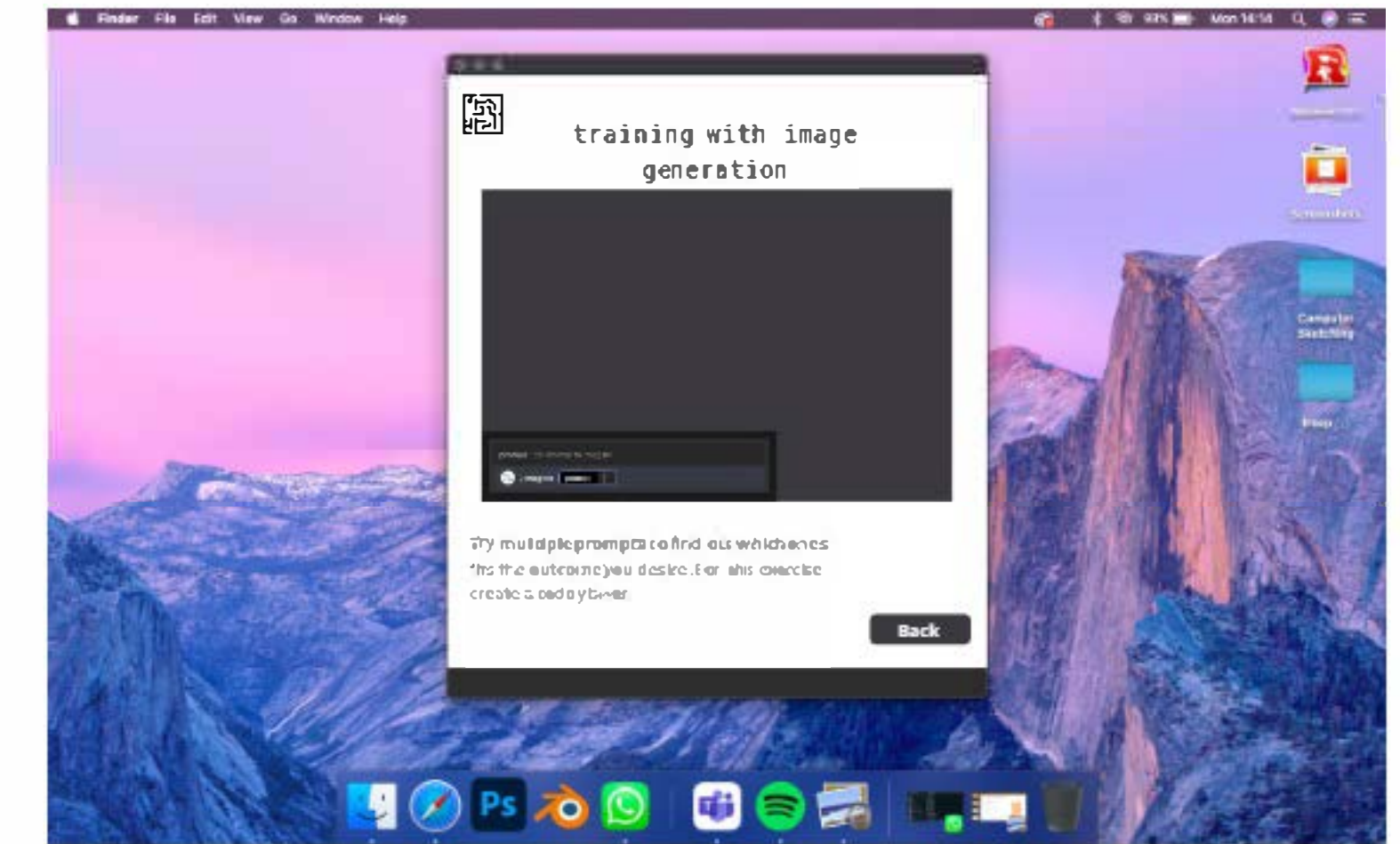
Retrieving information EM



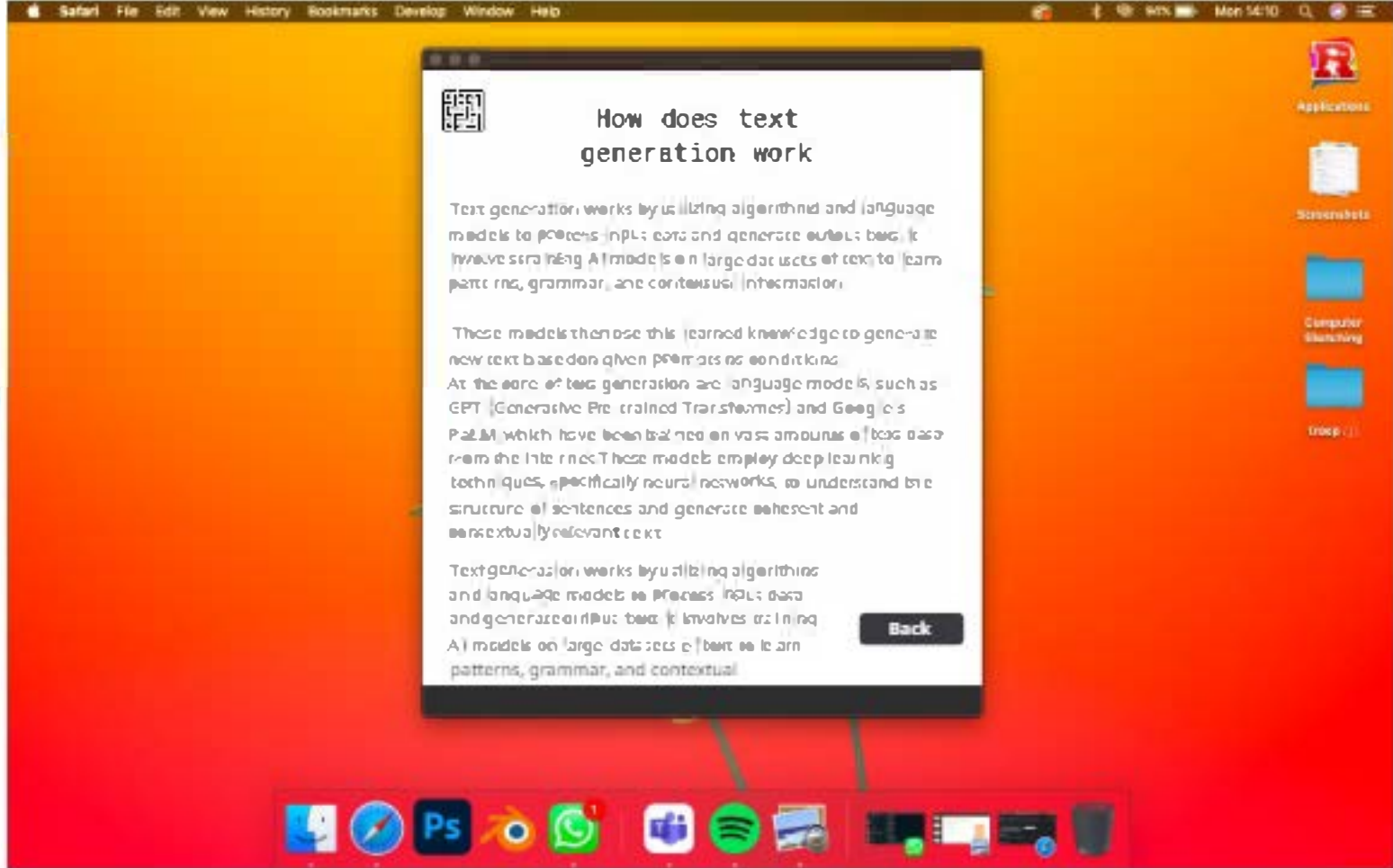
Tips and tricks EM



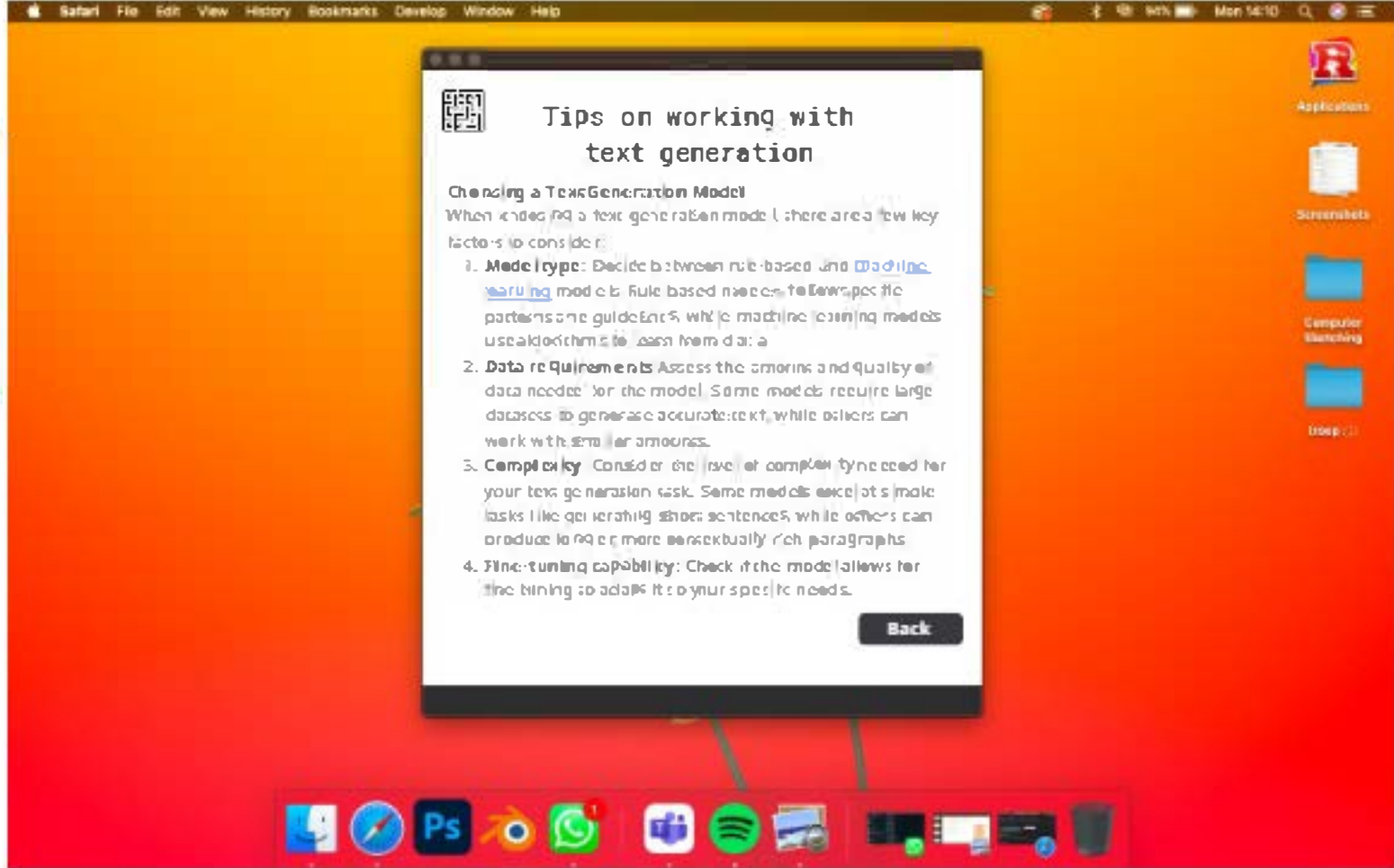
Training image generation EM



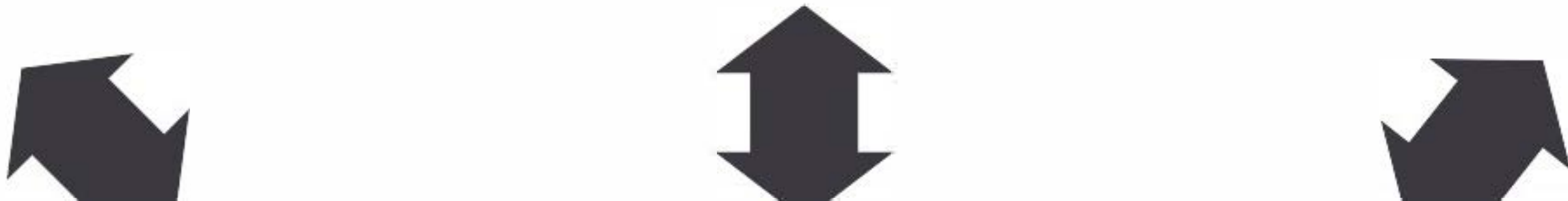
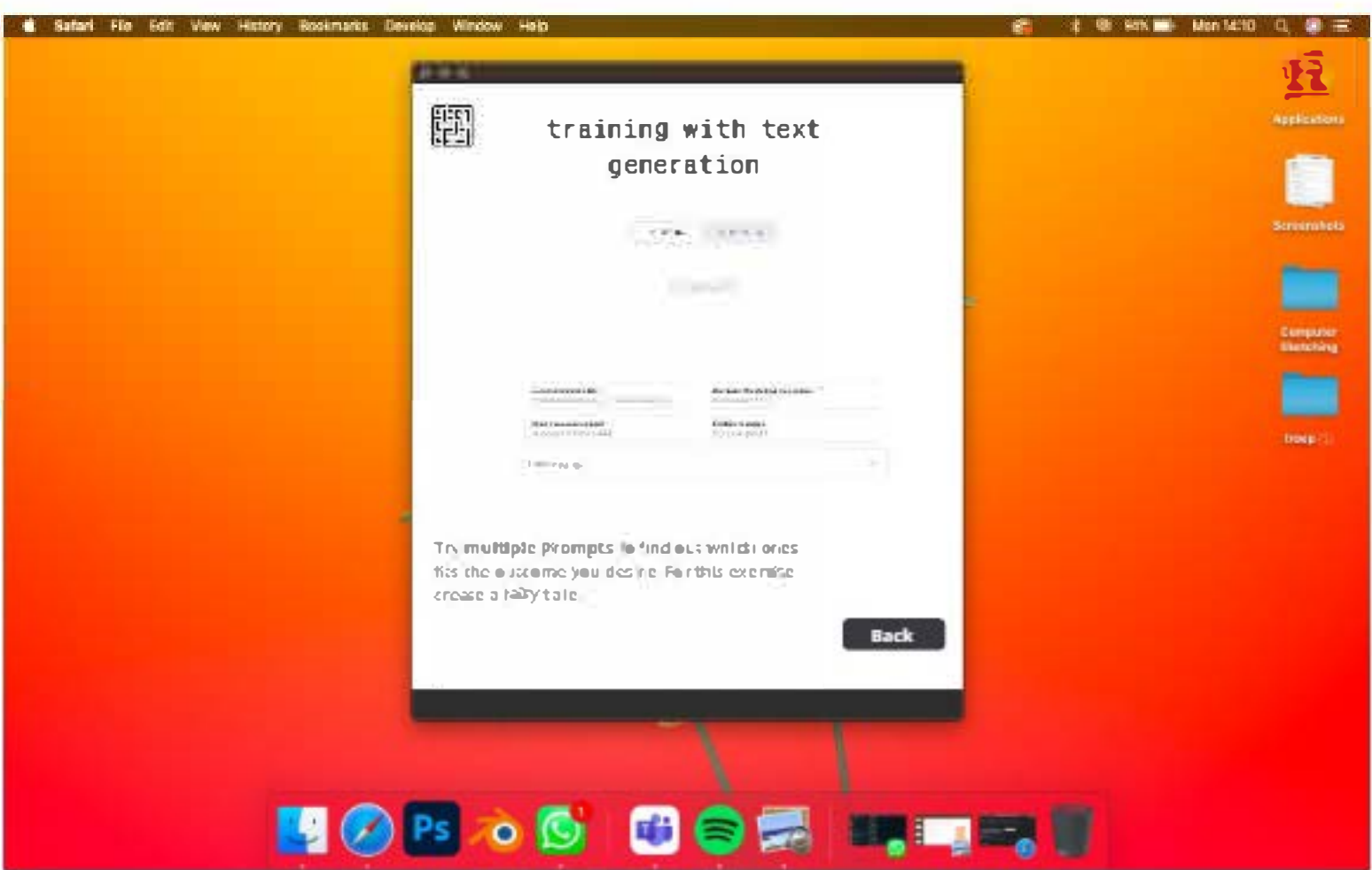
Retrieving information MA



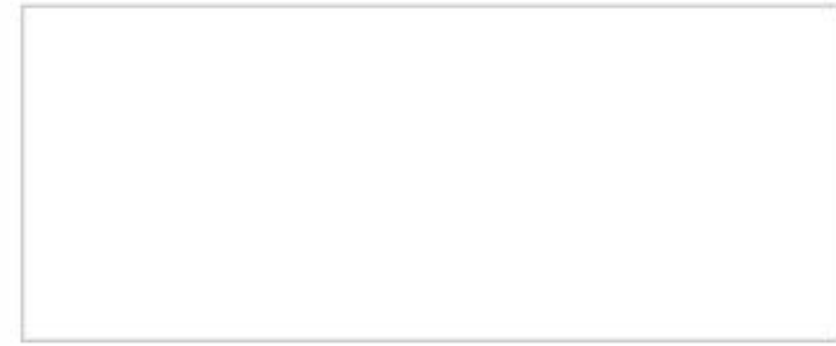
Tips and tricks MA



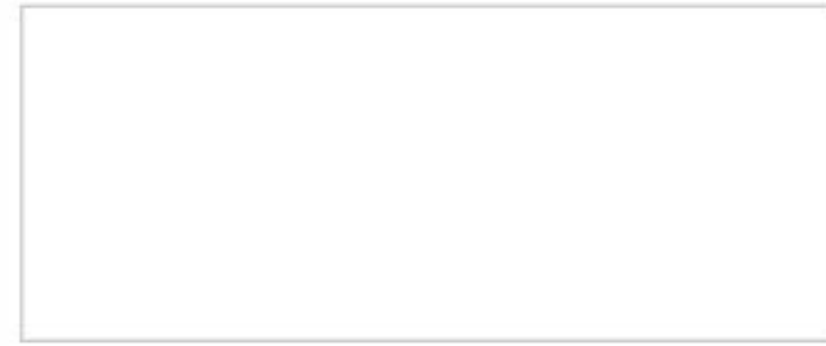
Recommend actions MA



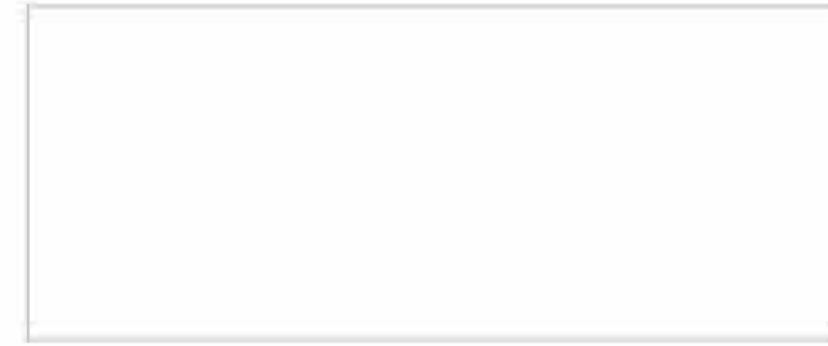
Welcome Standard MA



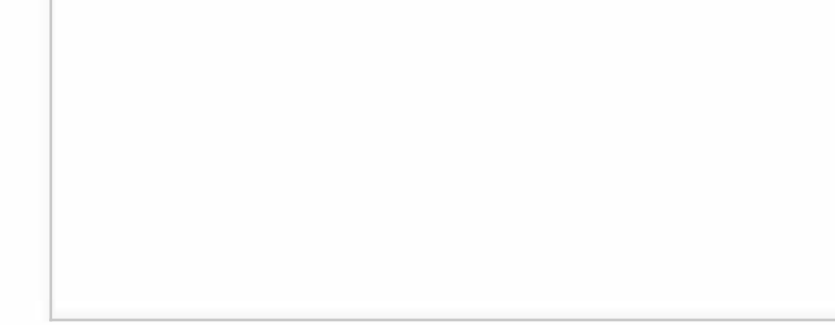
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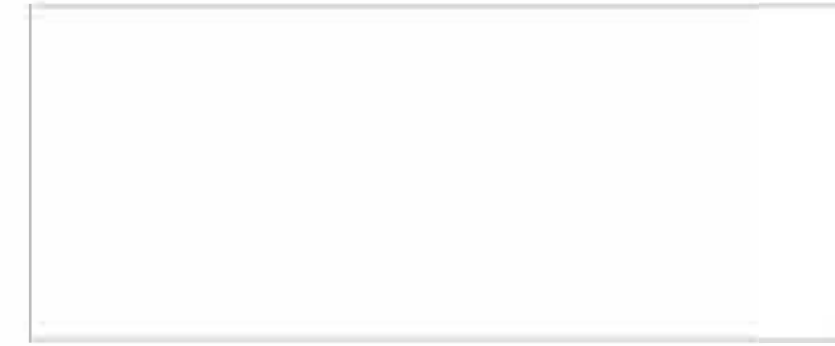
Lack of engagement



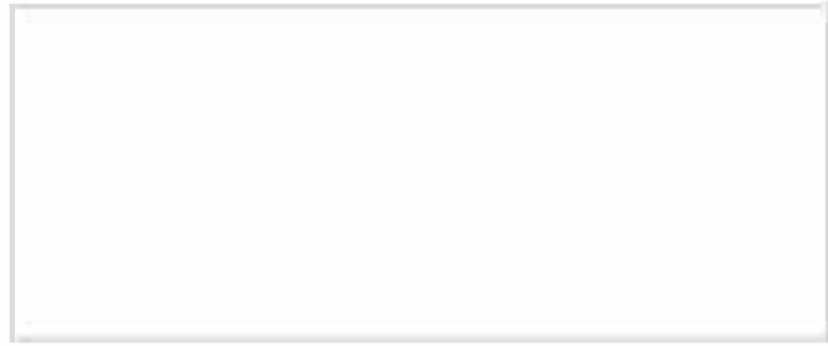
Showing insights MA



Recommend training MA



Thanking MA



Welcome Standard EM



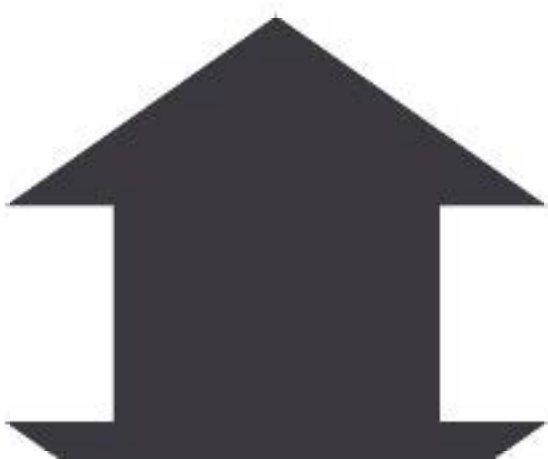
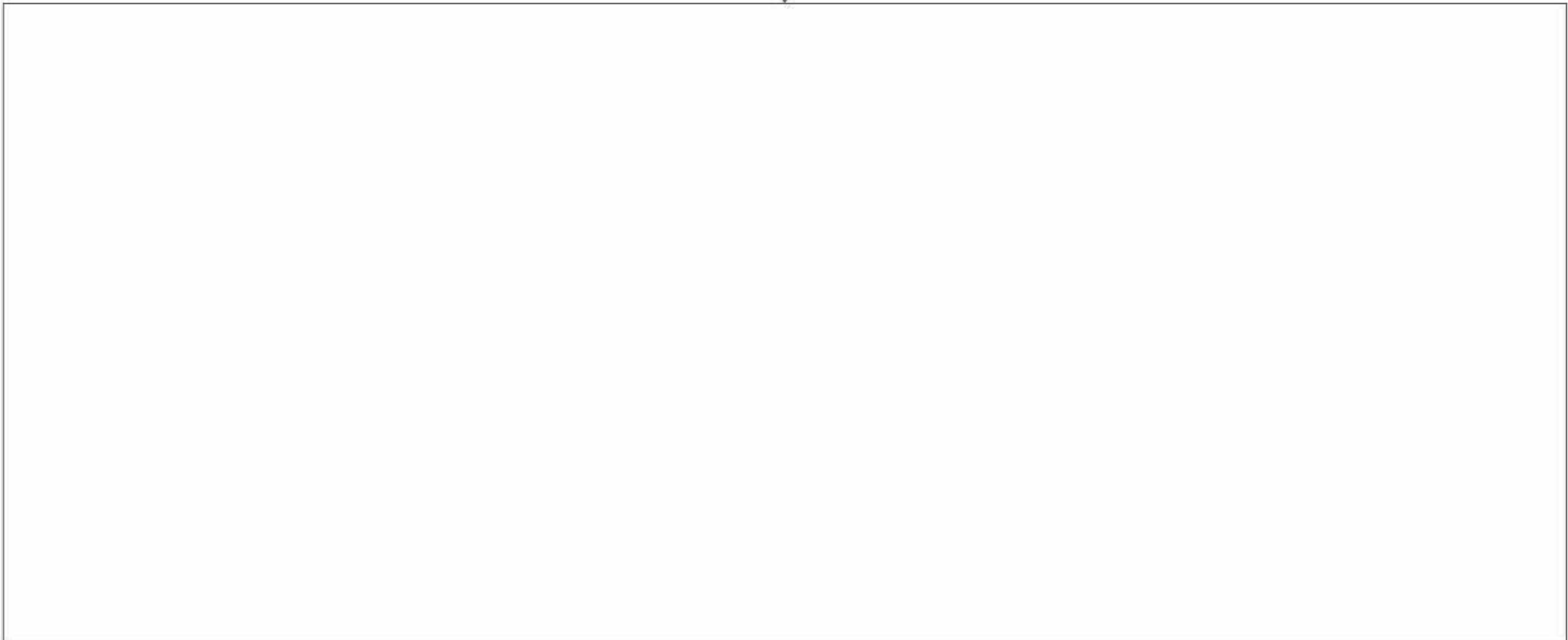
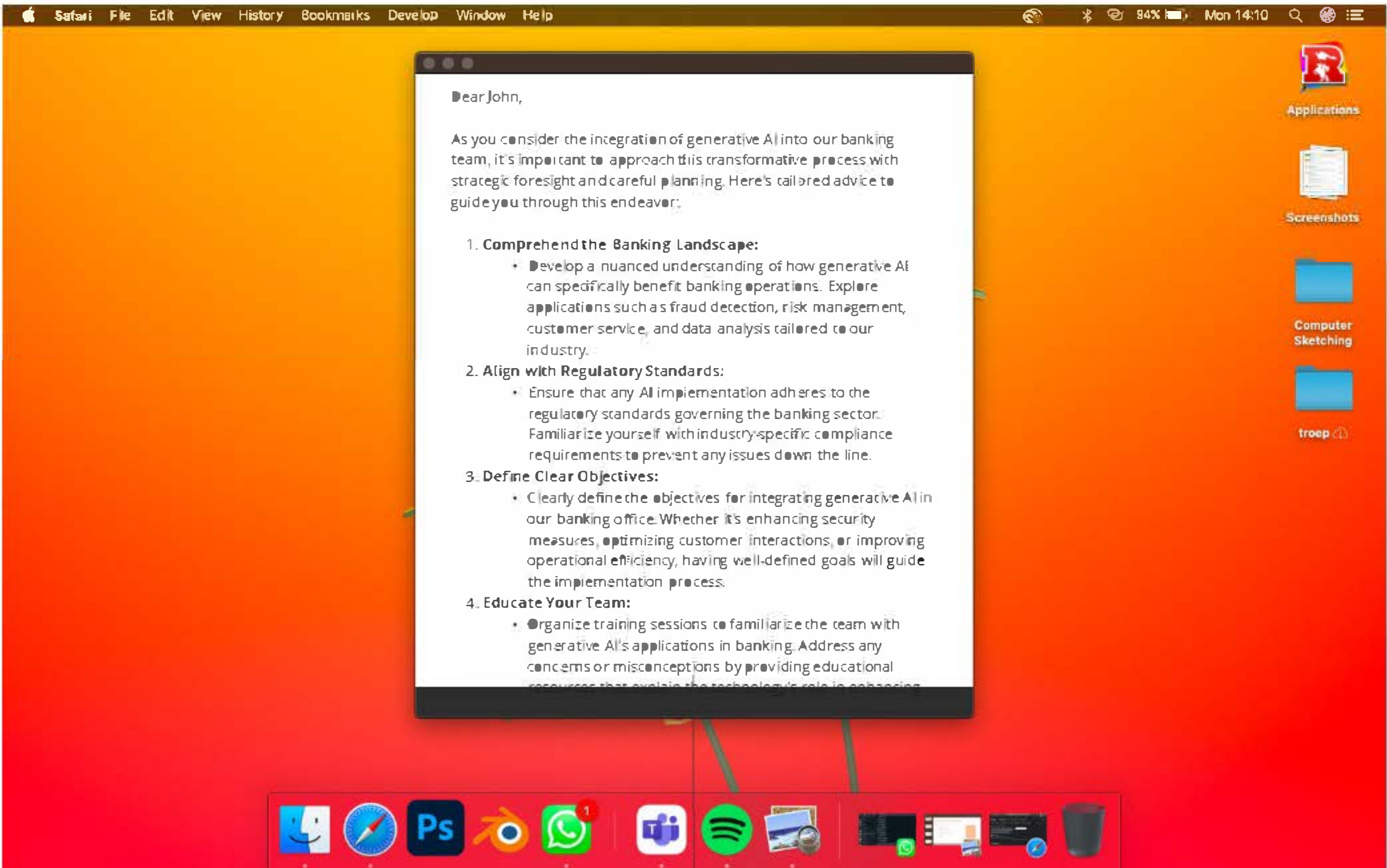
Recommend training EM



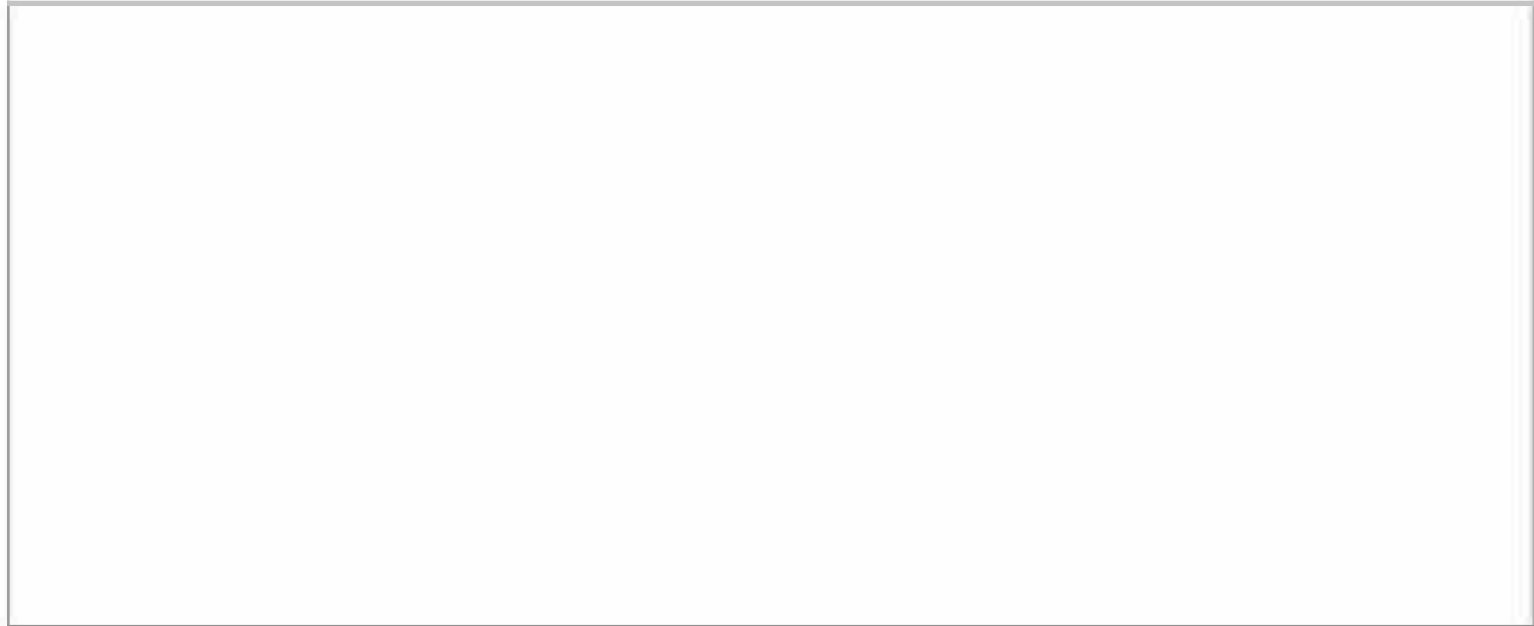
Thanking EM



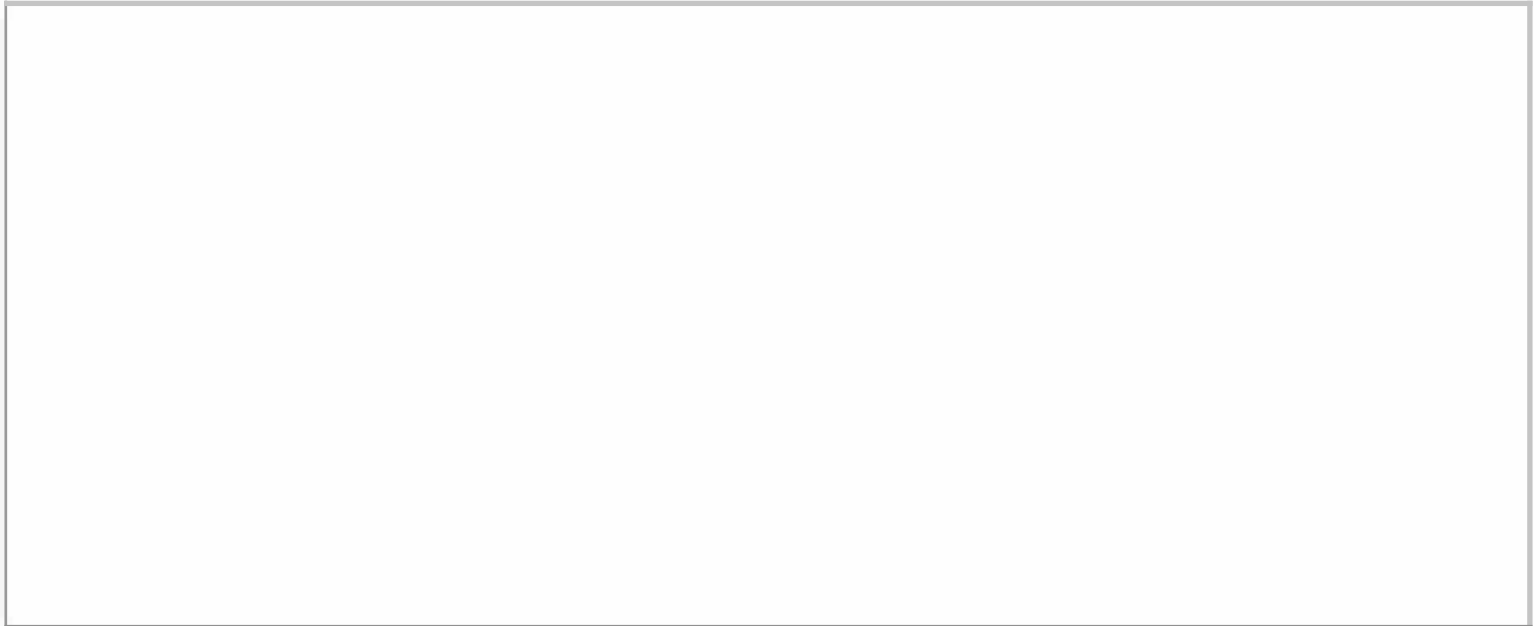
Advice day X MA Download



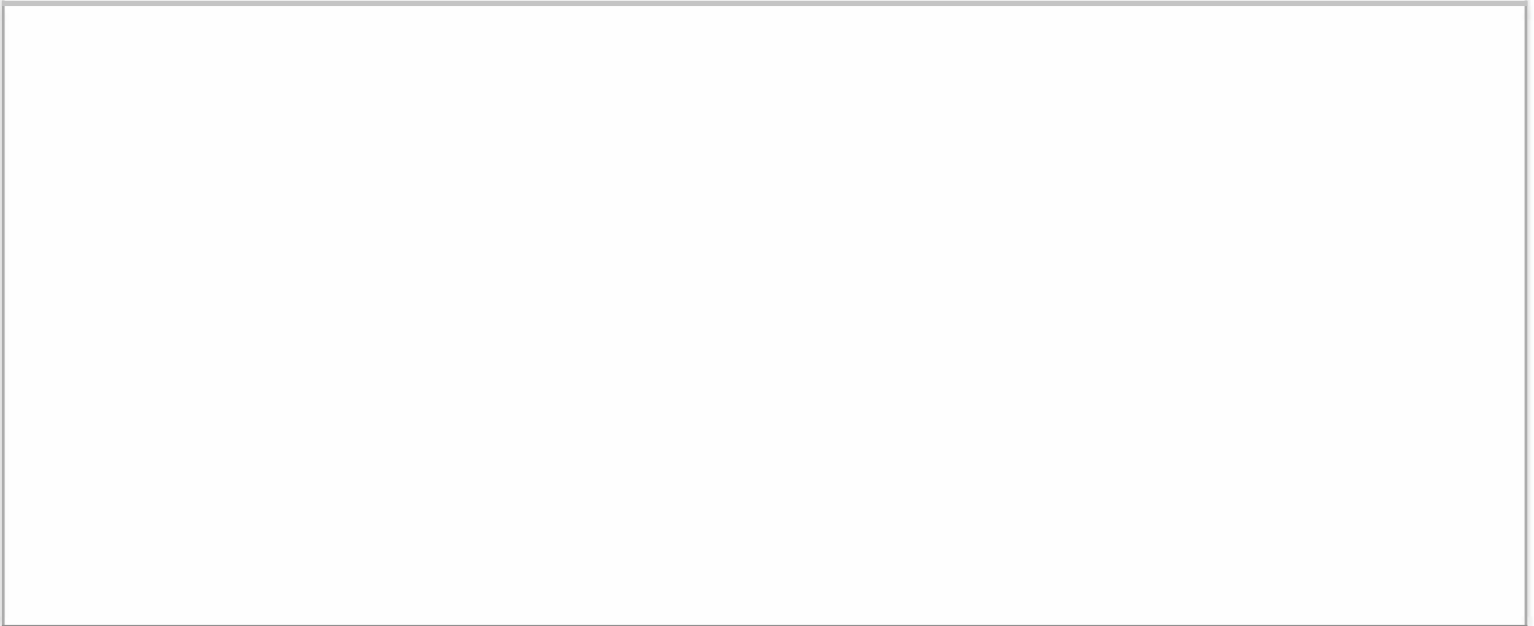
MA is done with THESEUS



MA is too busy THESEUS

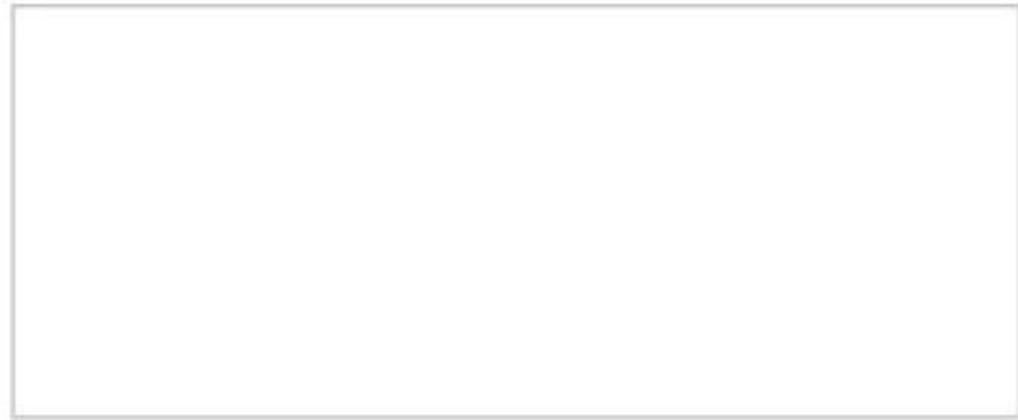


MA isn't done with THESEUS

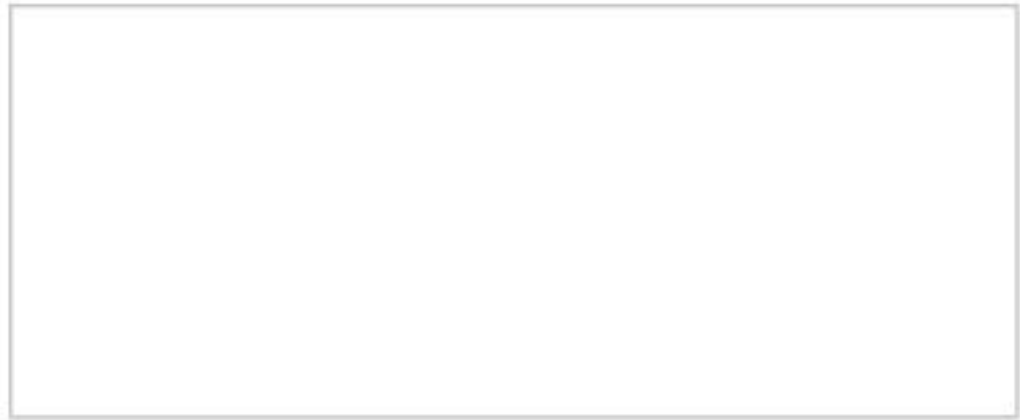


Appendix T: The co-design concept

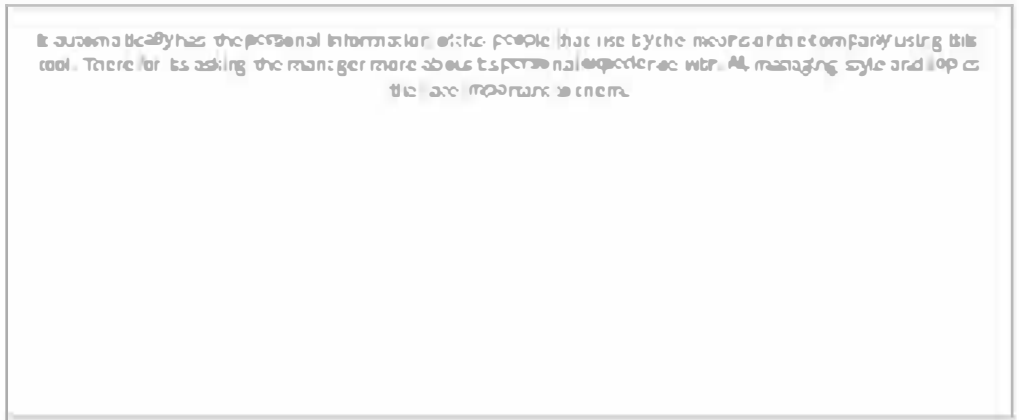
First time start screen MA



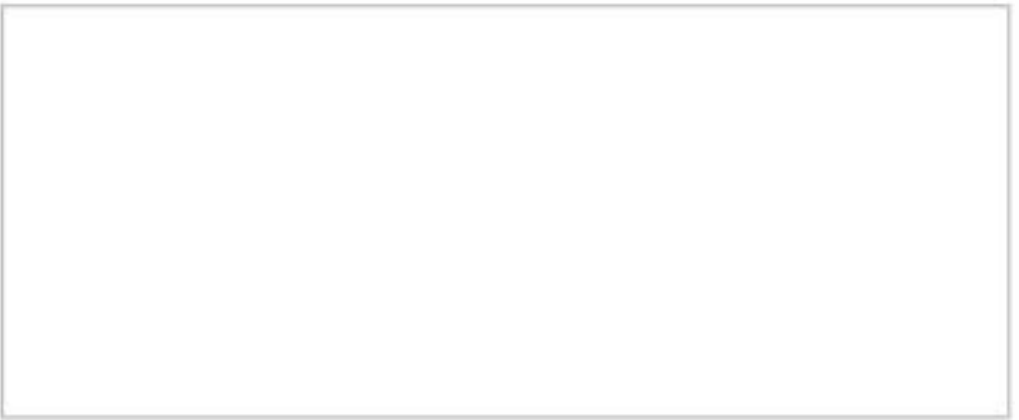
Introducing WOW MA



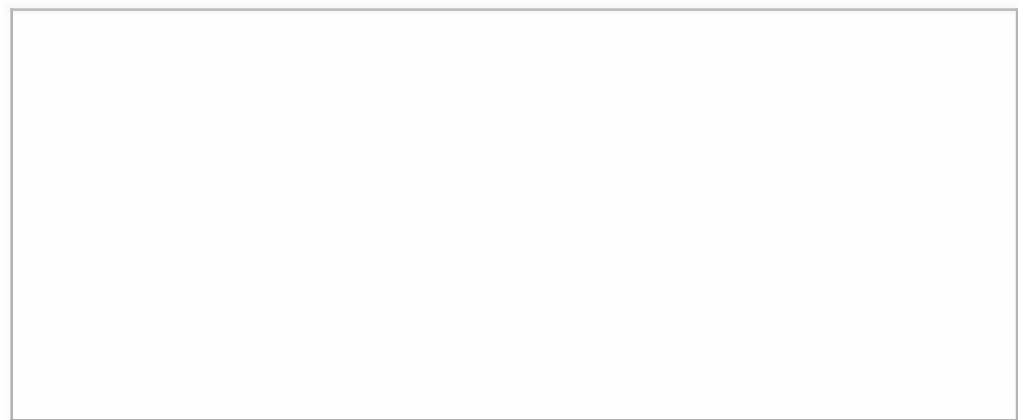
Creating profile MA



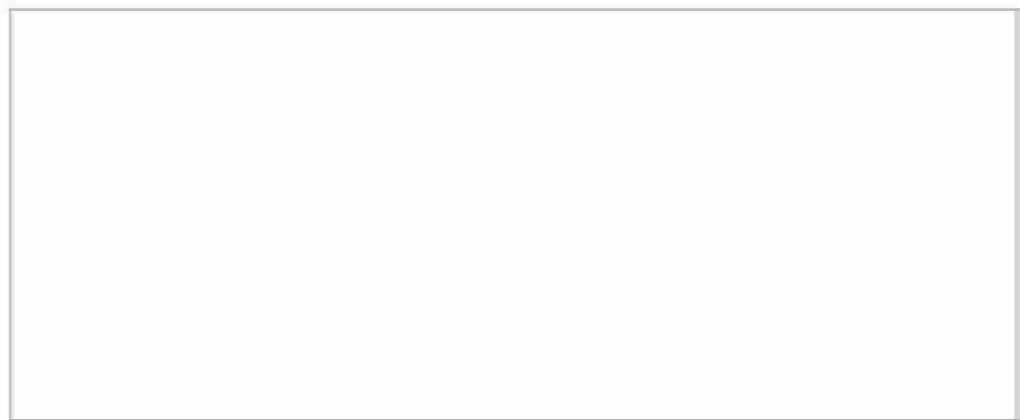
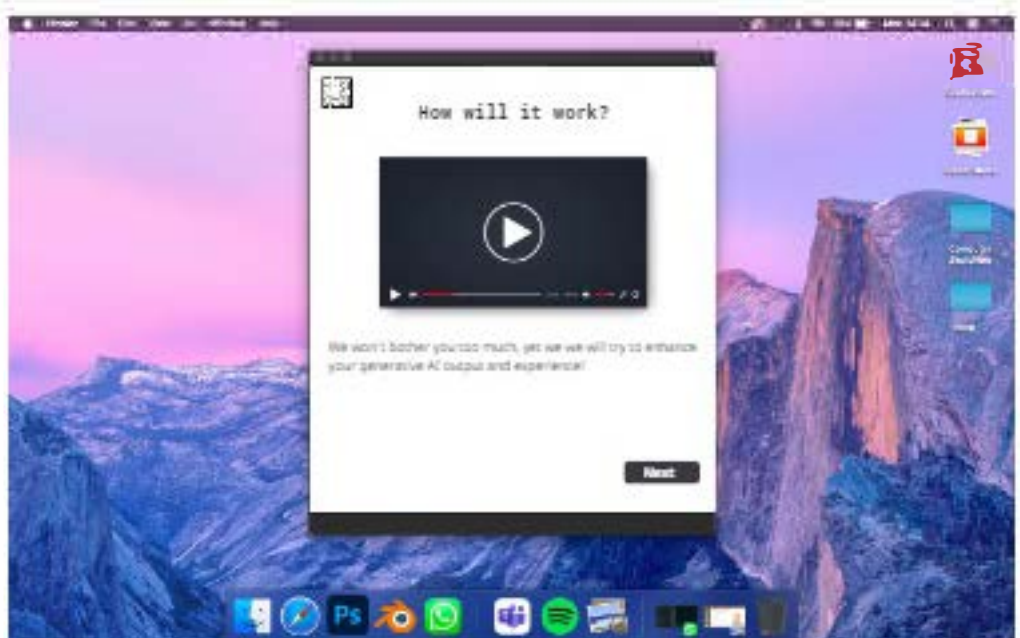
Thanking MA



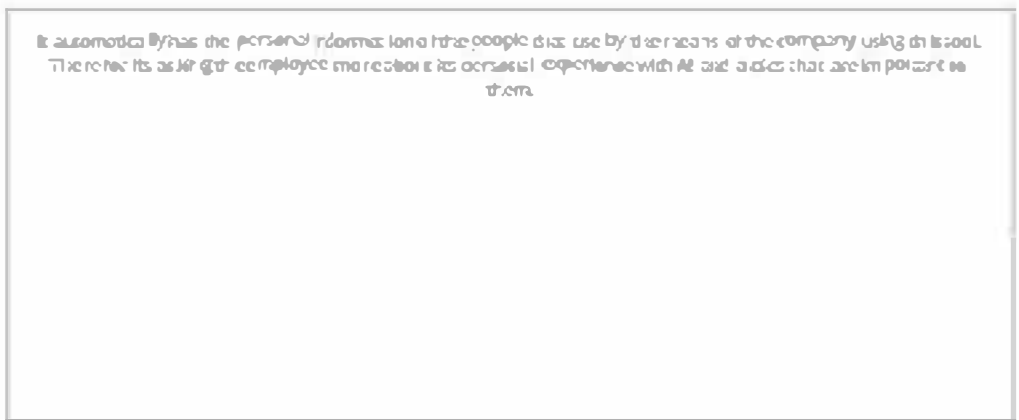
First time start screen EM



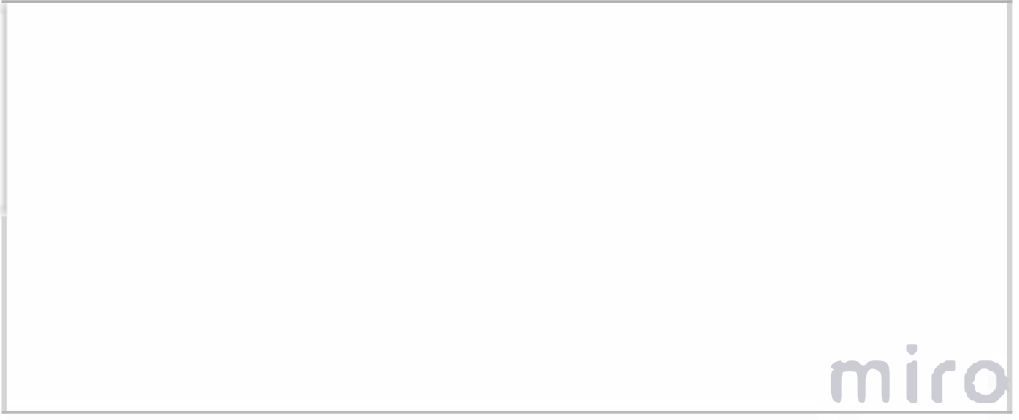
Introducing WOW EM



Creating profile EM



Thanking EM



Welcome Standard MA



Showing insights team MA



Recommend actions MA



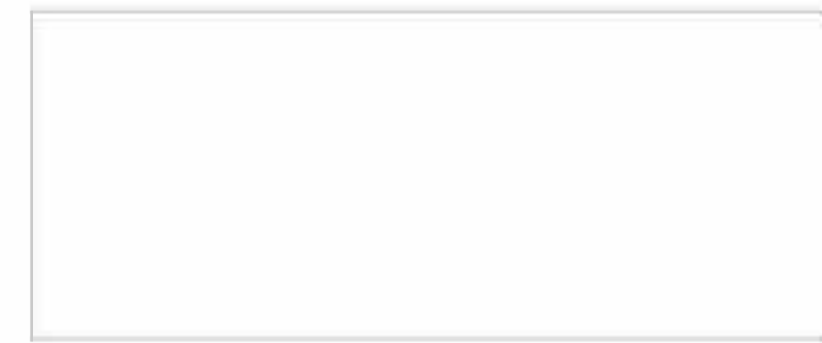
Showing insights MA



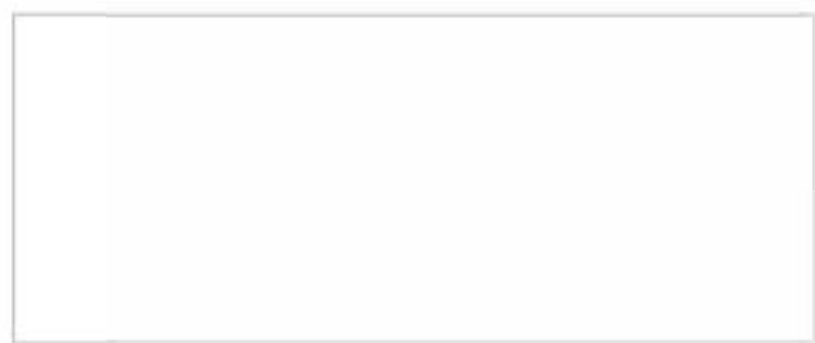
Recommend training MA



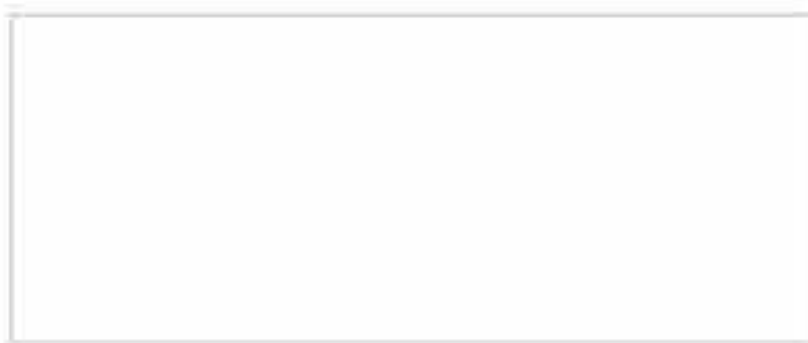
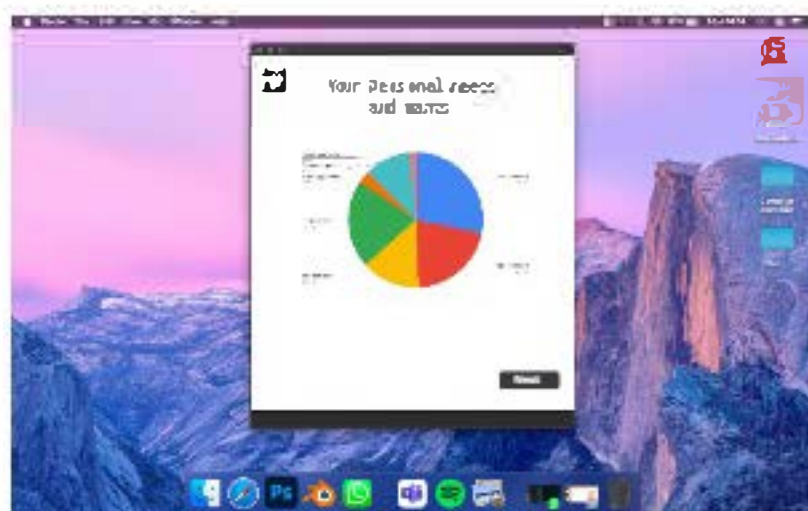
Thanking MA



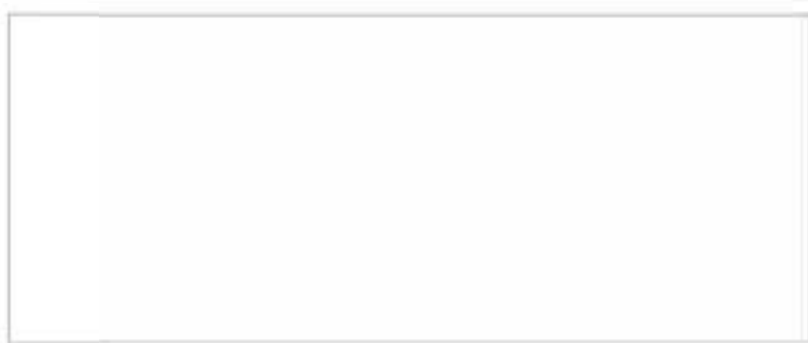
Welcome Standard EM



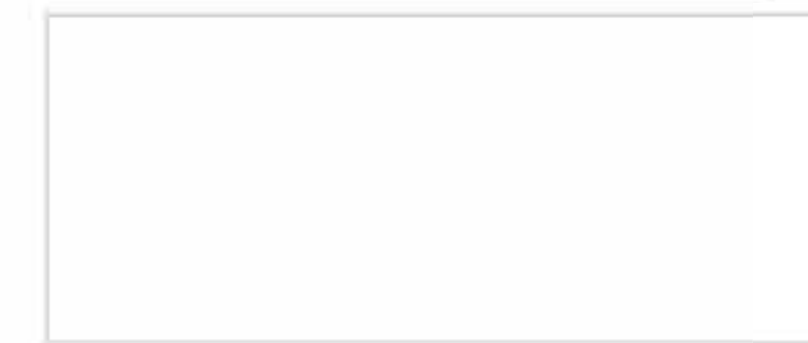
Showing insights EM



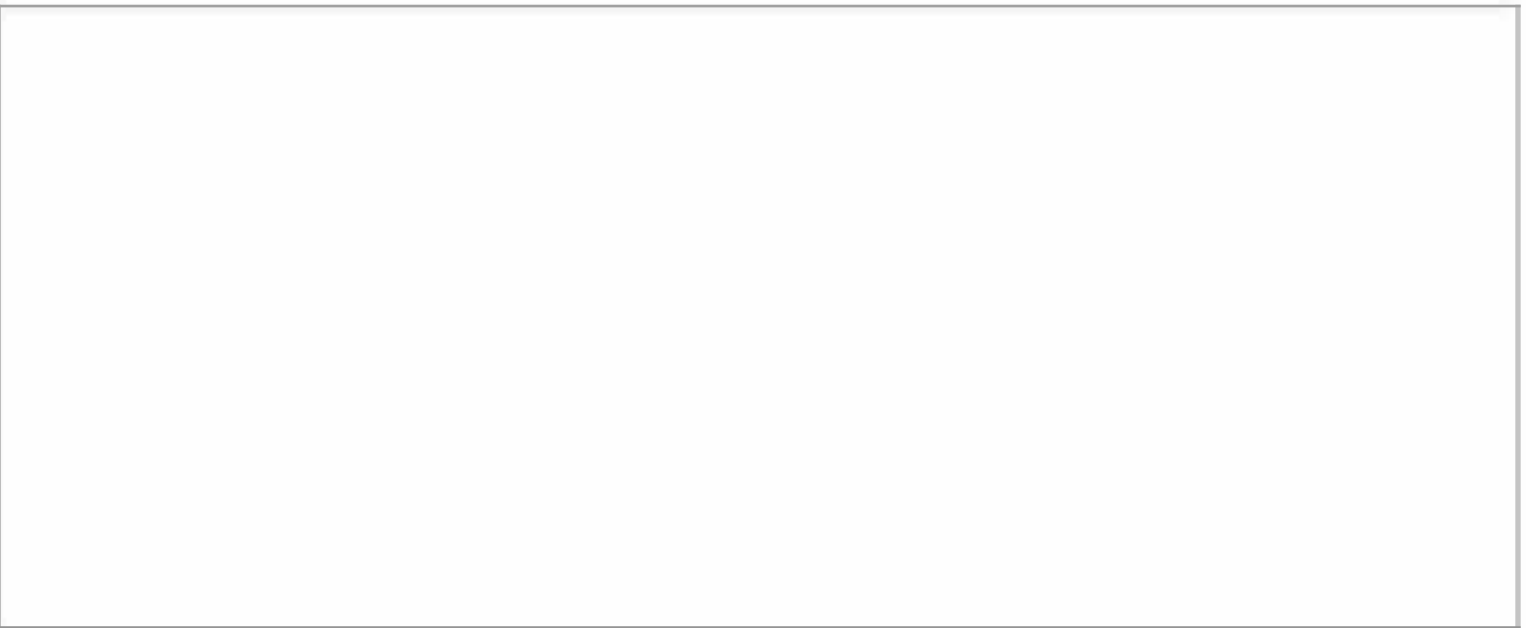
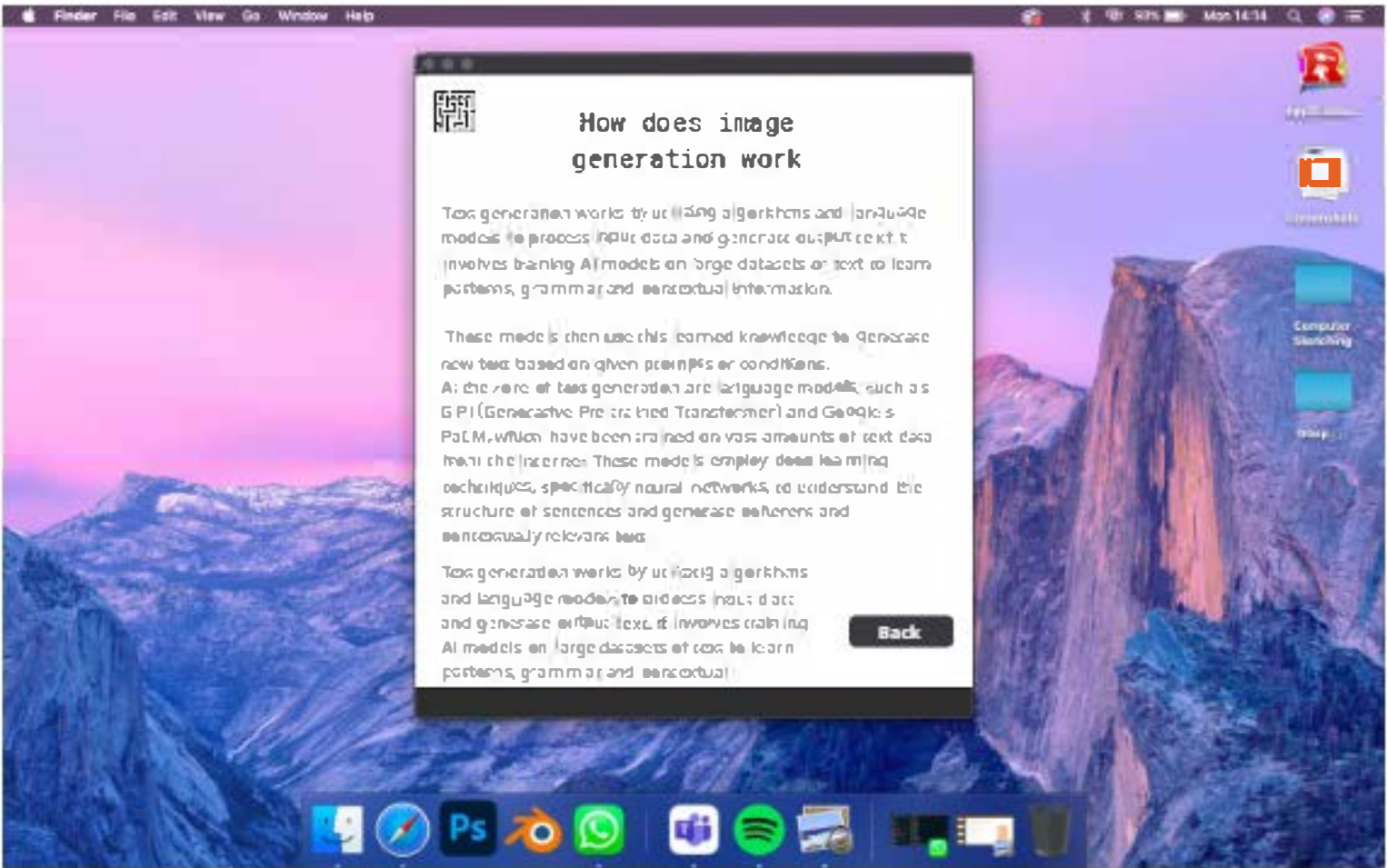
Recommend training EM



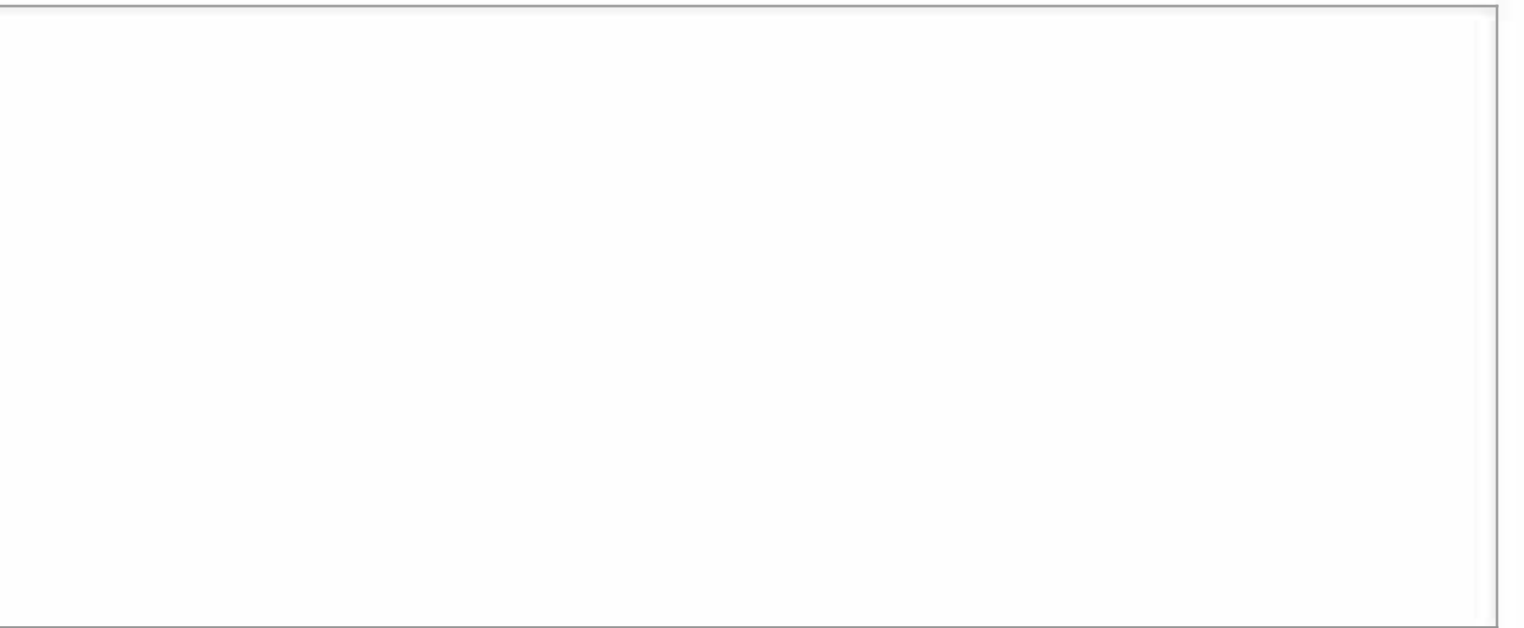
Thanking EM



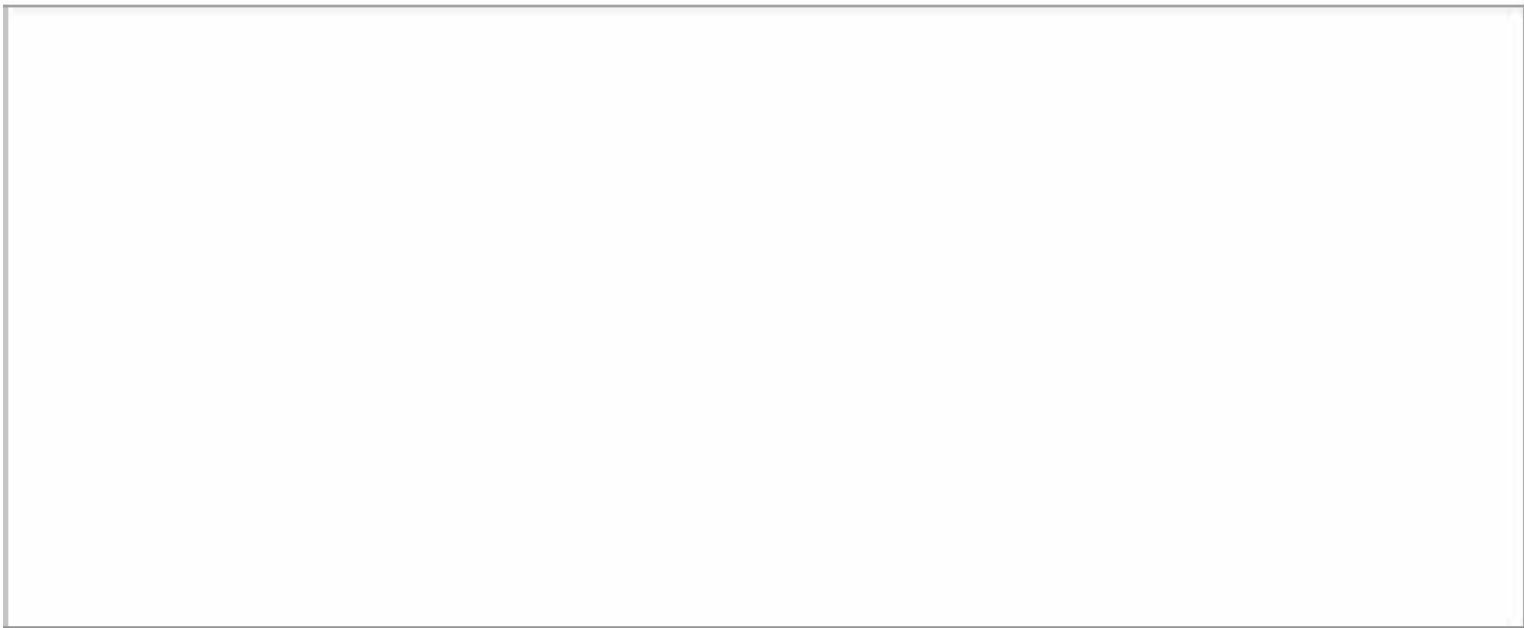
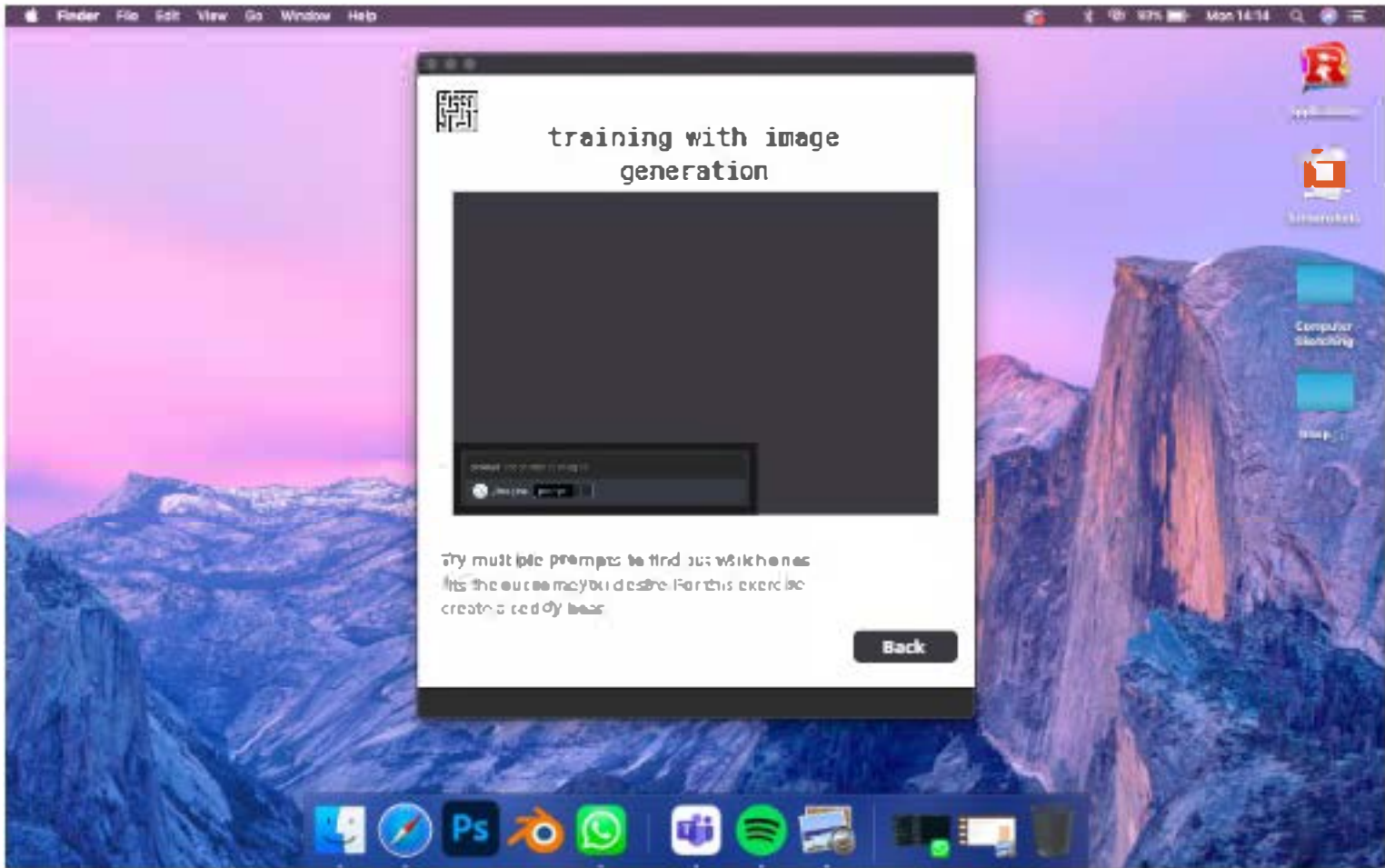
Retrieving information EM



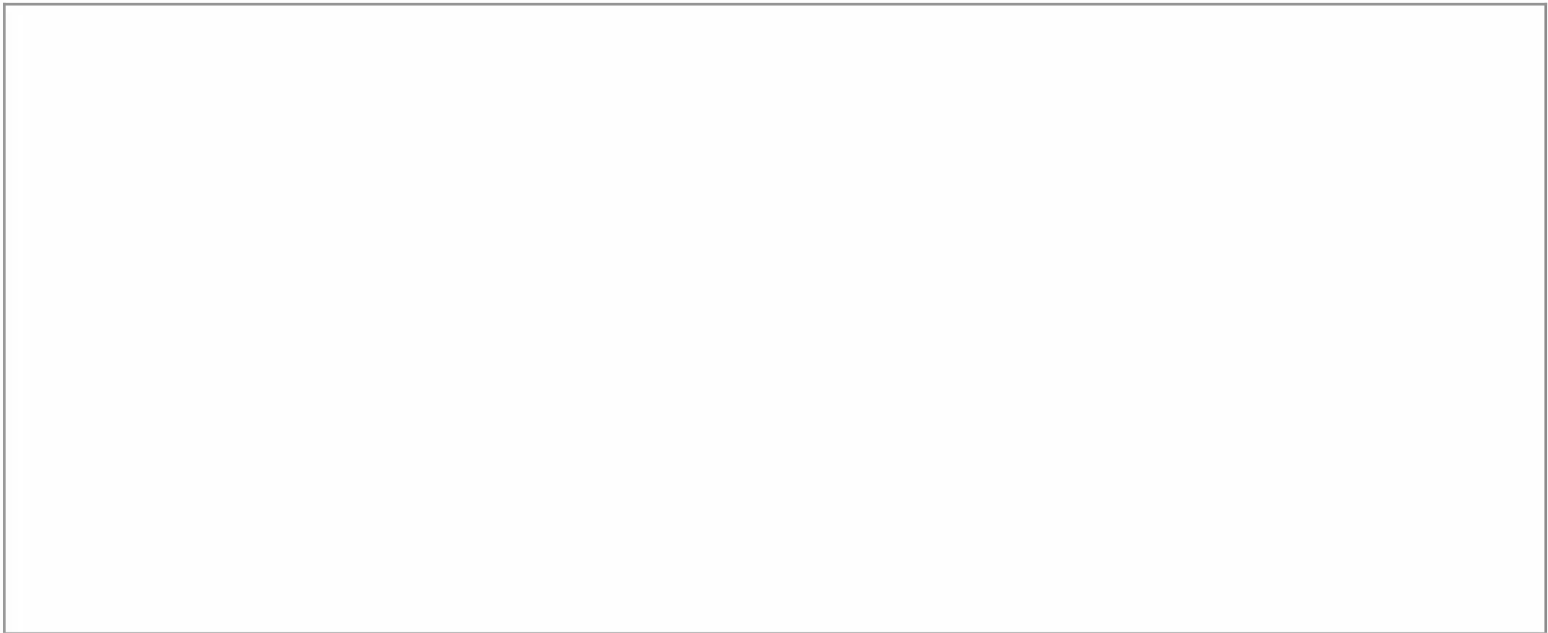
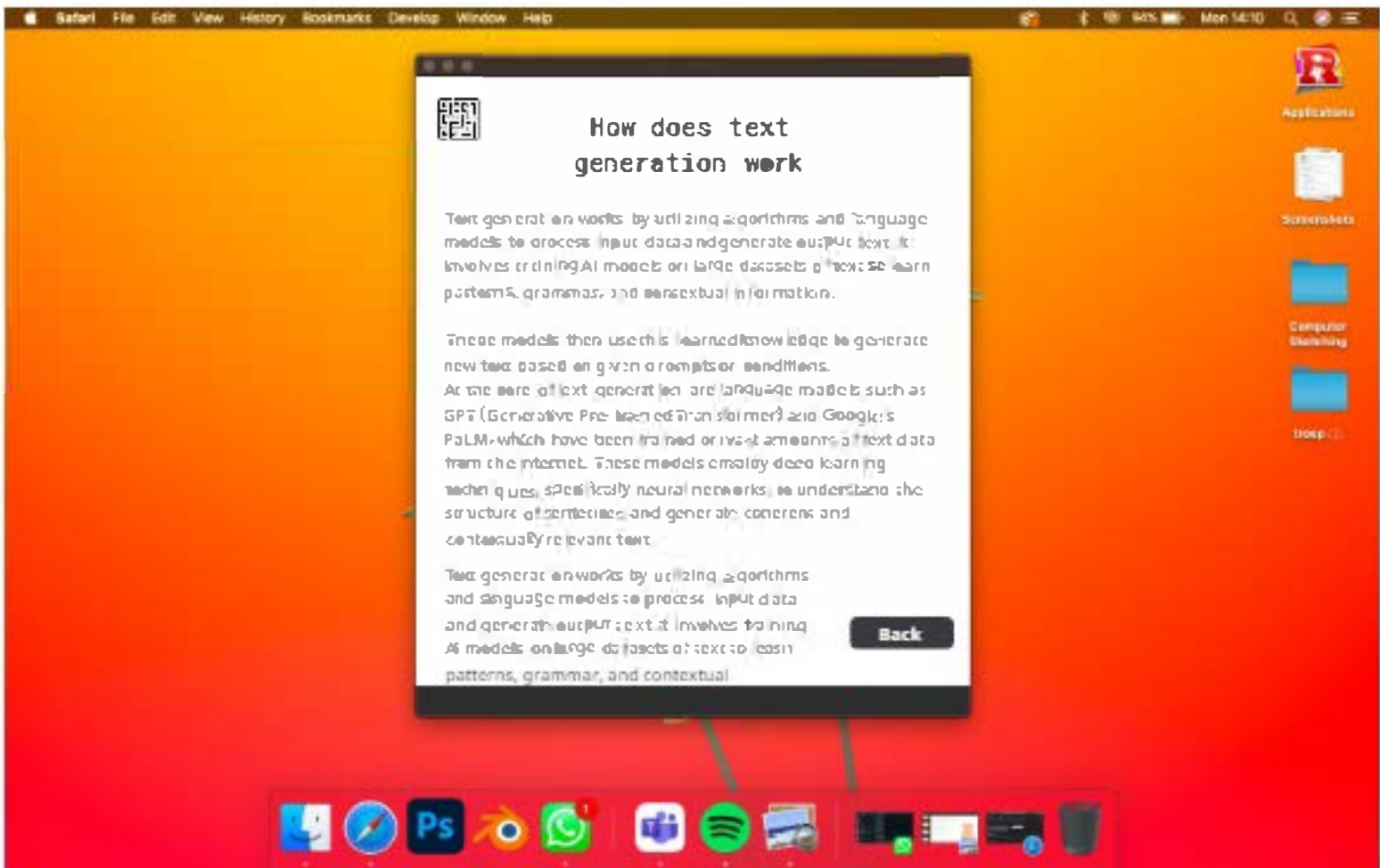
Tips and tricks EM



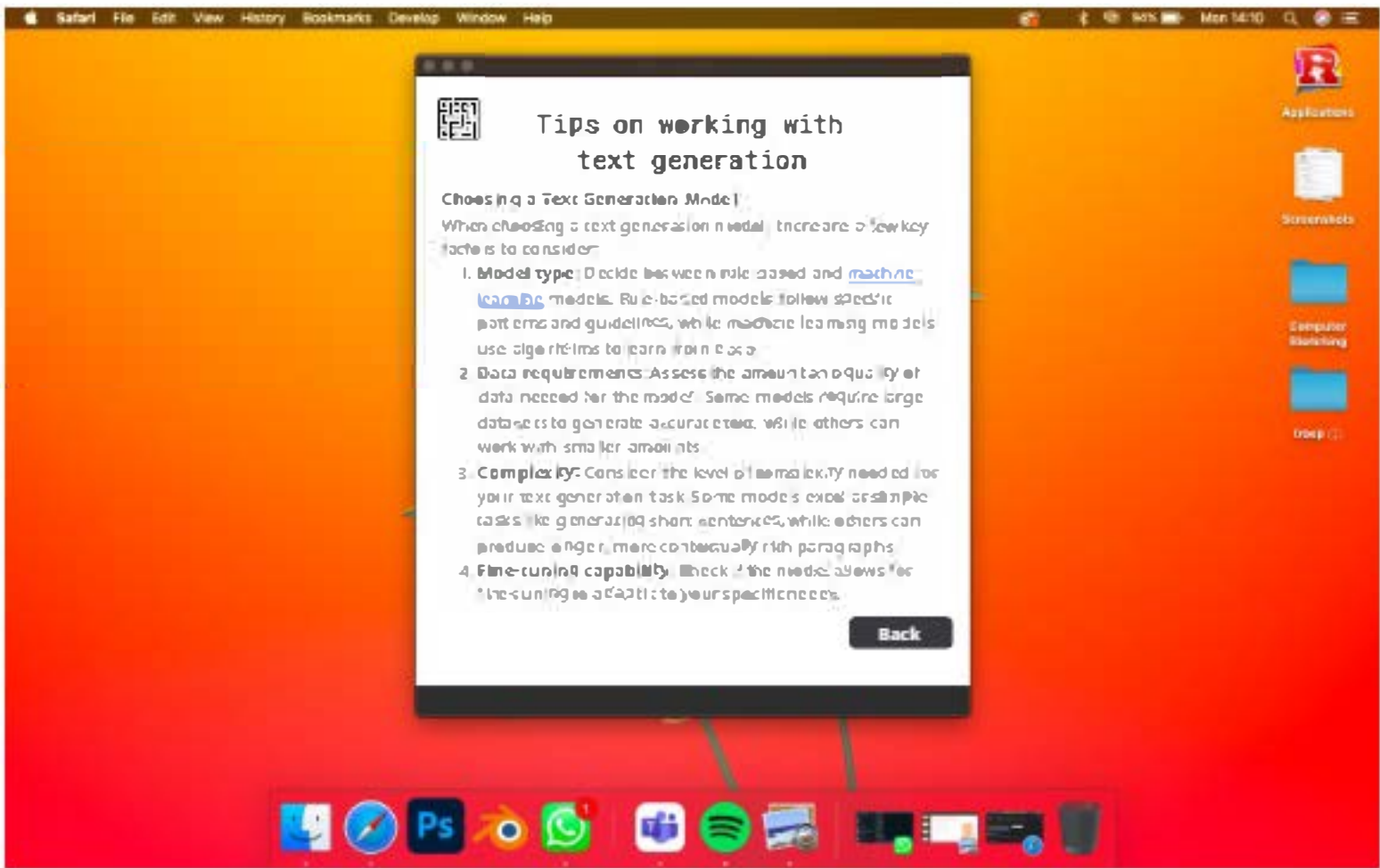
Training image generation EM



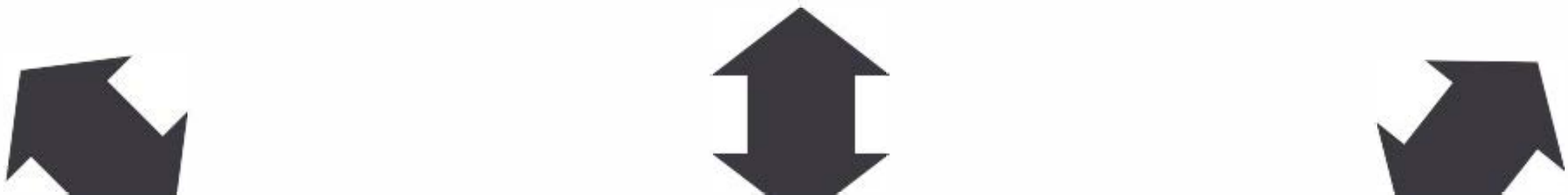
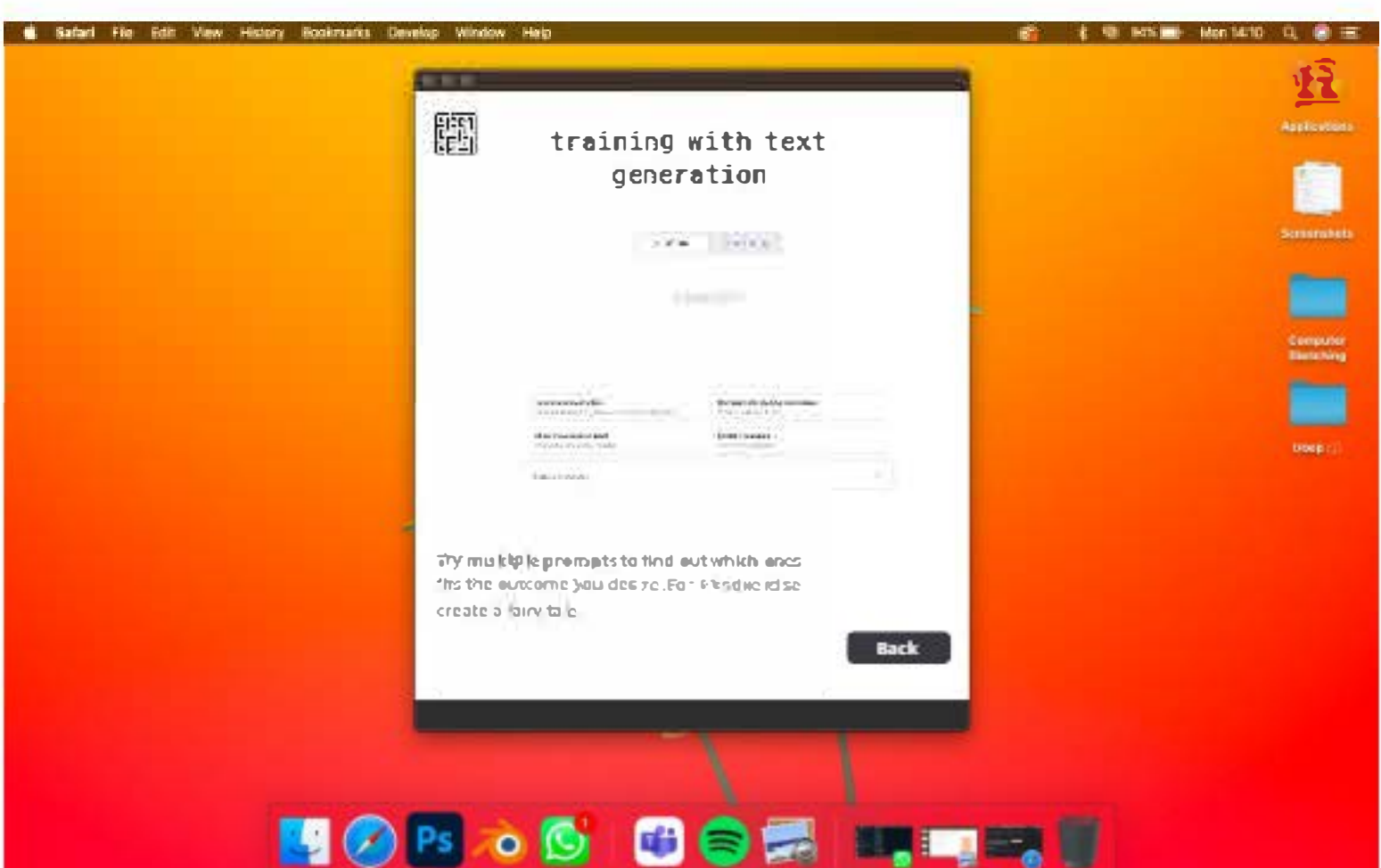
Retrieving information MA



Tips and tricks MA



Recommend actions MA



Welcome Standard MA



Showing insights team MA



Lack of engagment MA



Showing insights MA



Recommend training MA



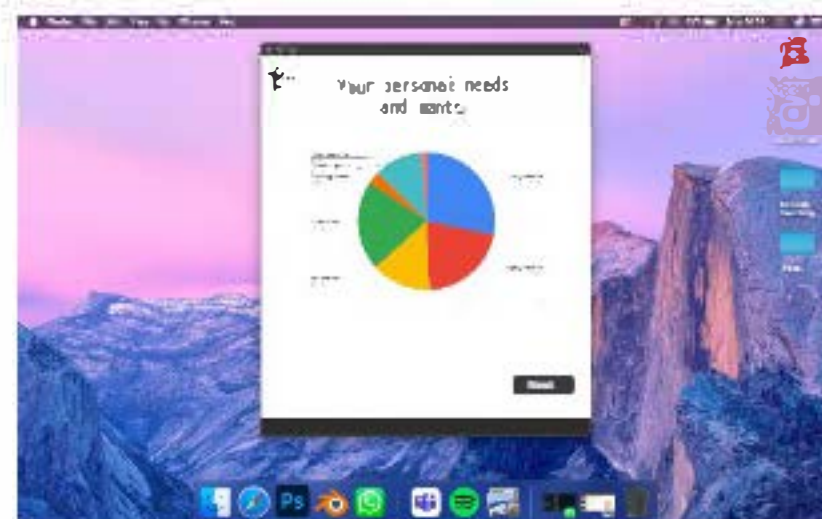
Thanking MA



Welcome Standard EM



Showing insights EM



Recommend training EM



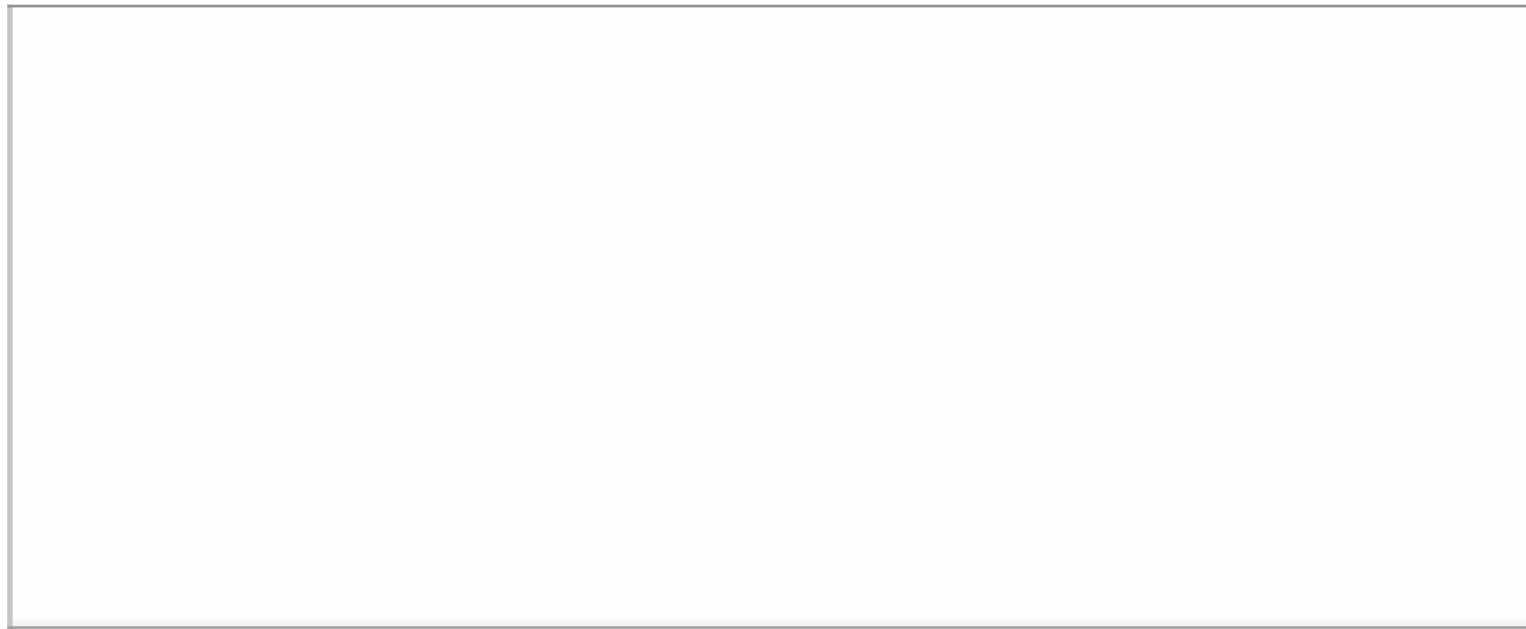
Thanking EM



MA is done with THESEUS



MA is too busy THESEUS



MA isn't done with THESEUS

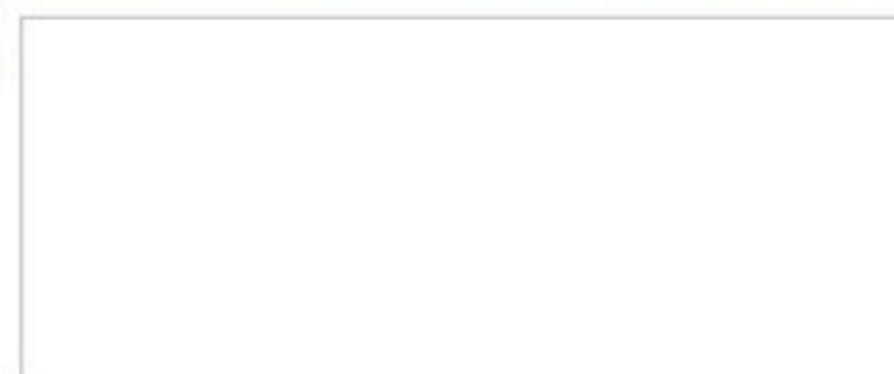


Appendix U: The co-design concept with change notes

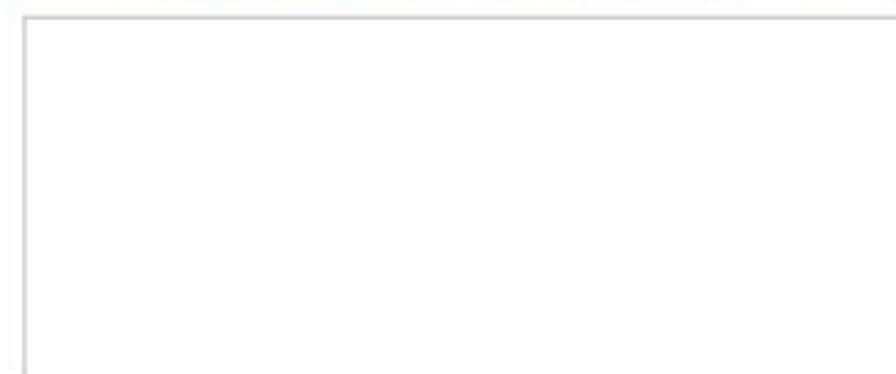
Easy
access
(16)

Digital
(18)

First time start screen MA



Introducing WOW MA



Integrate
domain
work
section (11)

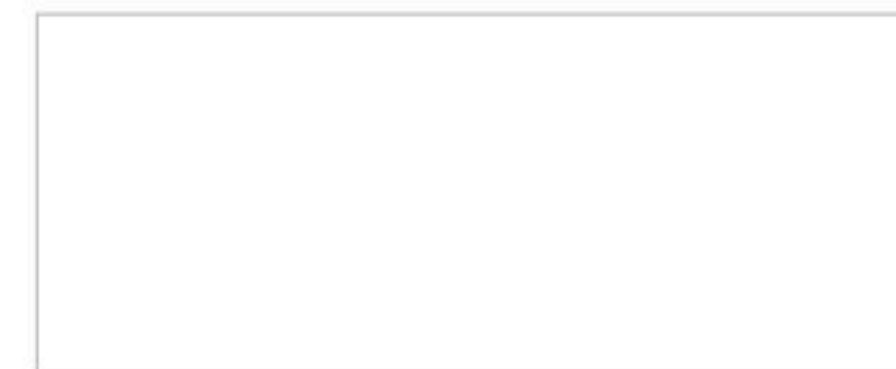
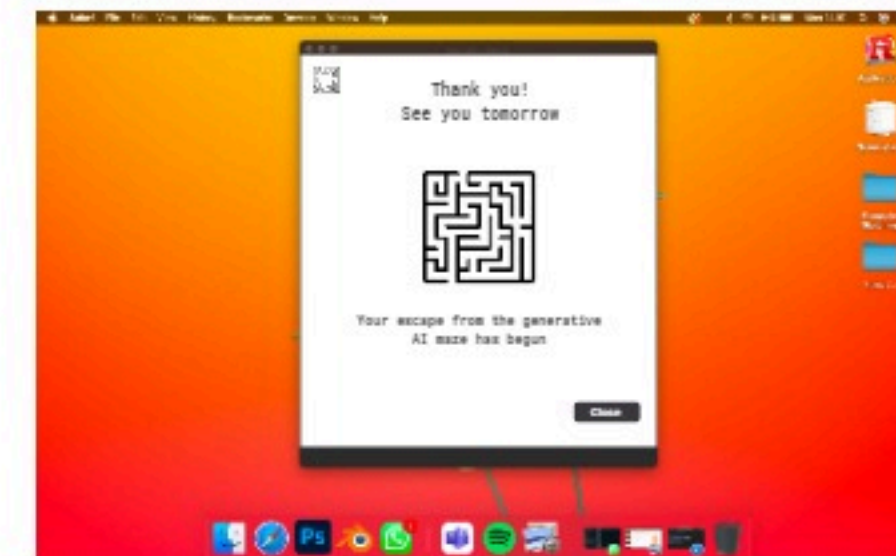
Add
Domain
of work

Creating profile MA



It automatically has the personal information of the people that use by the means of the company using this tool. There for its asking the manager more about its personal experience with AI, managing style and topics that are important to them.

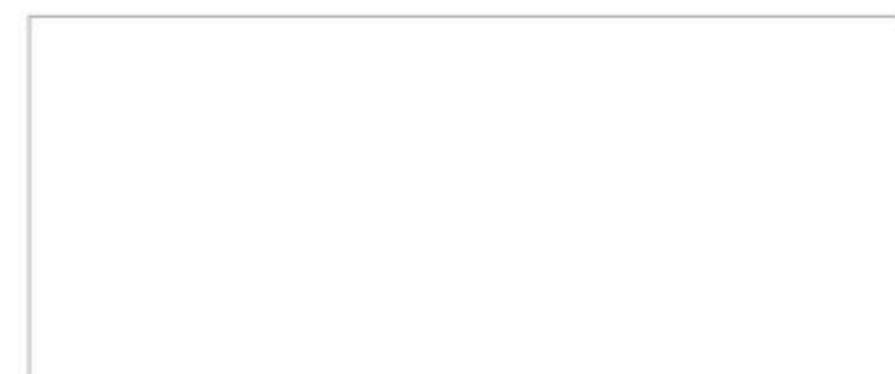
Thanking MA



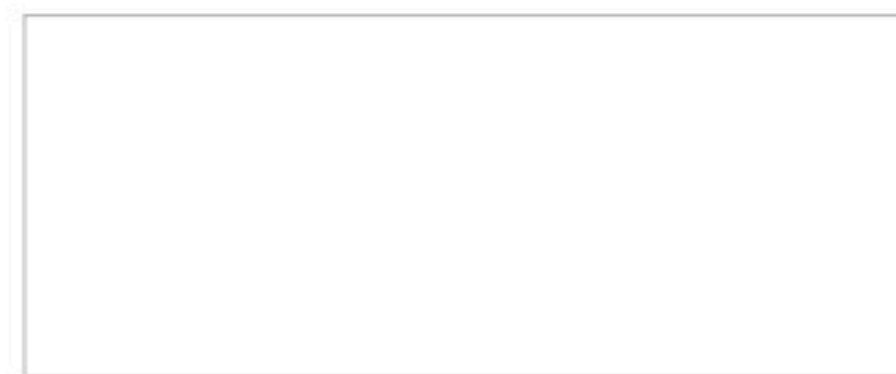
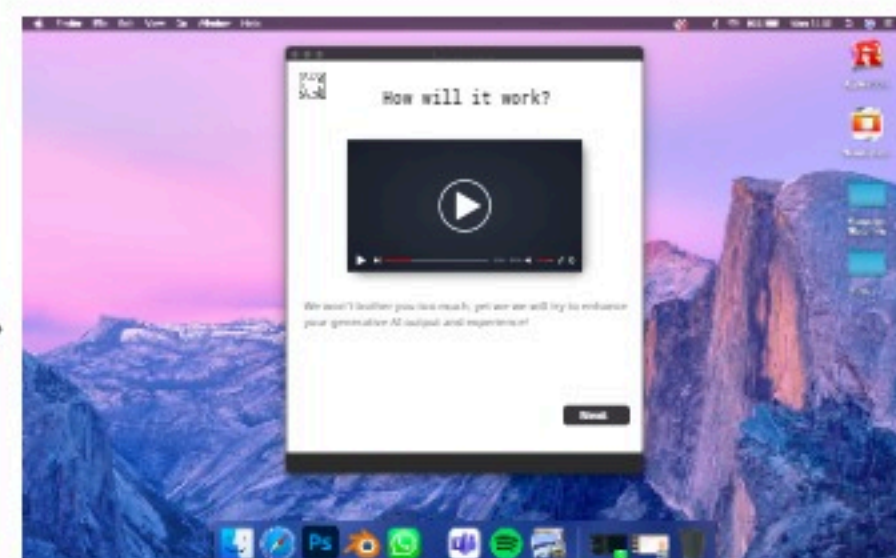
Keep me
aware of
current
generative AI
updates

Aware of
implications
(8)

First time start screen EM



Introducing WOW EM



Integrate
domain
work
section (11)

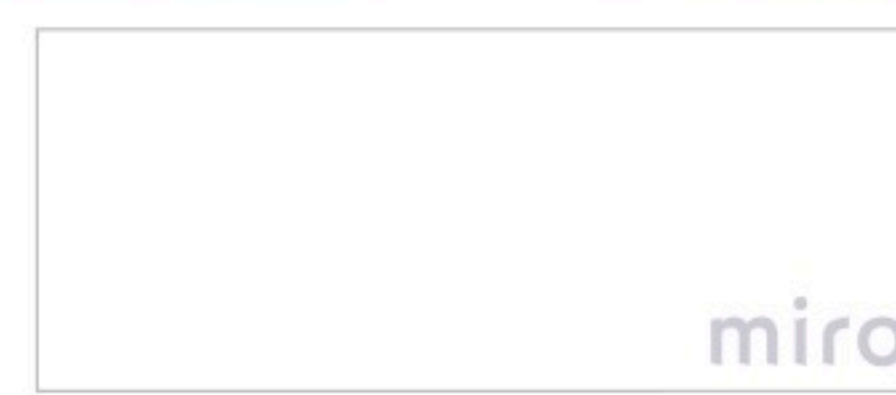
Add
Domain
of work

Creating profile EM



It automatically has the personal information of the people that use by the means of the company using this tool. There for its asking the employee more about its personal experience with AI and topics that are important to them.

Thanking EM



miro

Welcome Standard MA



Showing insights team MA



Give
summary
advice (9)

Remove too
much insights
employee (10)

Recommend actions MA



Showing insights MA



Recommend training MA

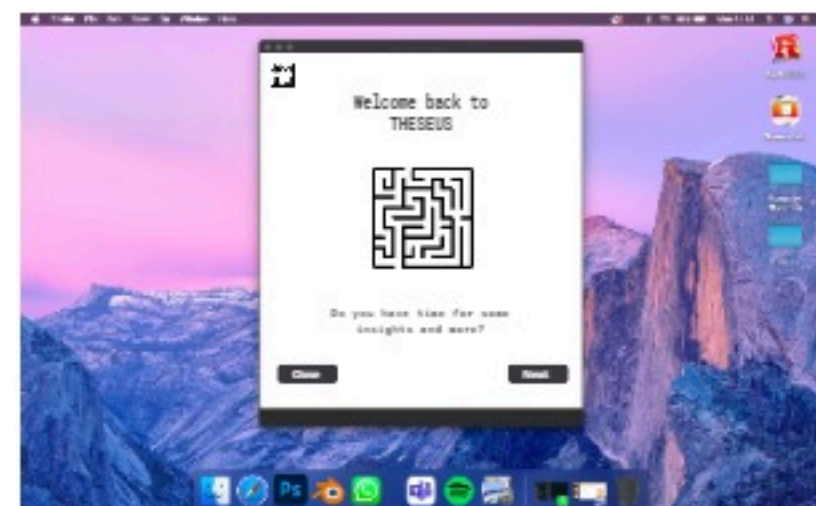


Show
options to
work more
efficiently (4)

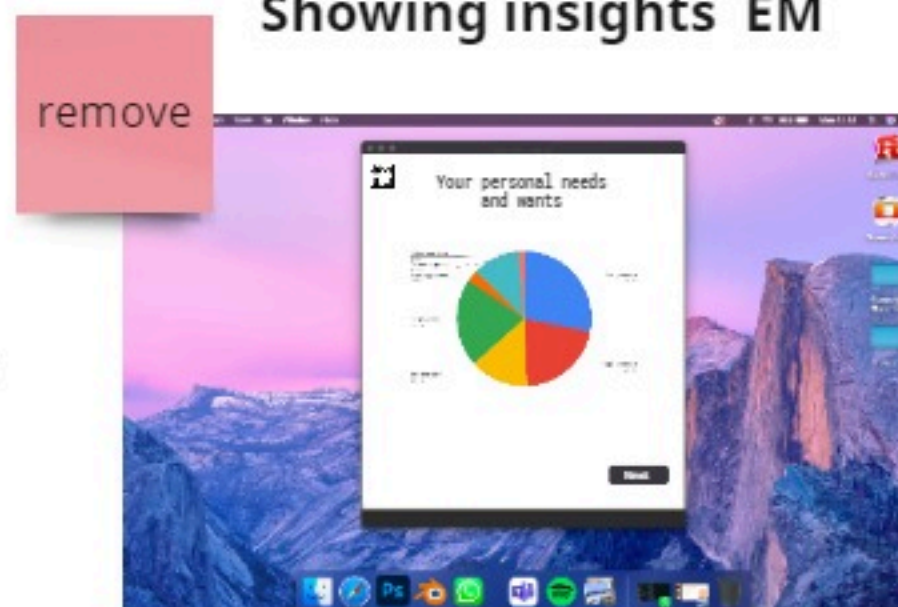
Thanking MA



Welcome Standard EM

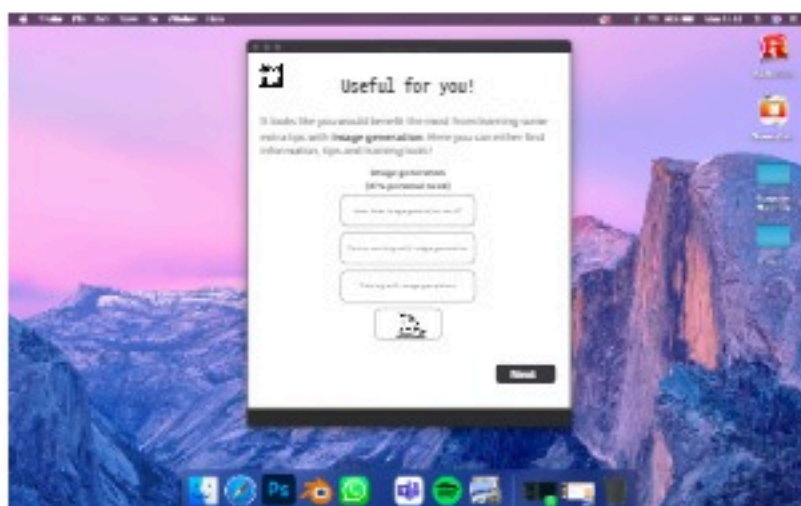


Showing insights EM



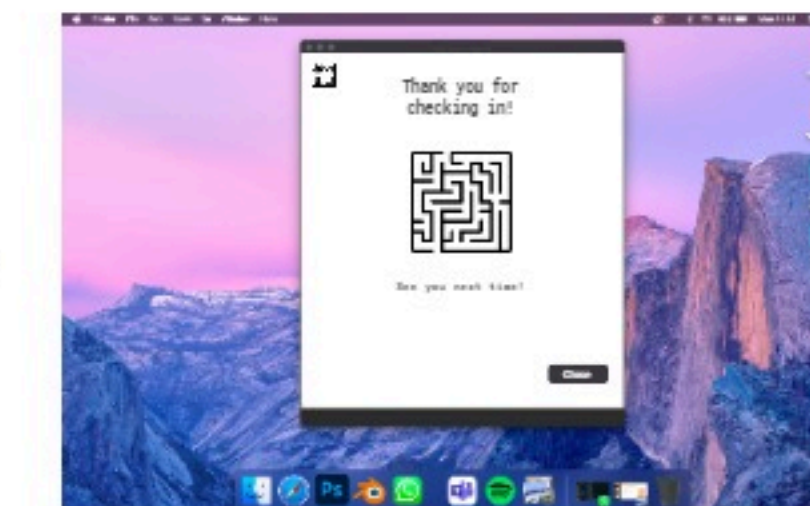
remove some
interactions
with my
employees
(15)

Recommend training EM

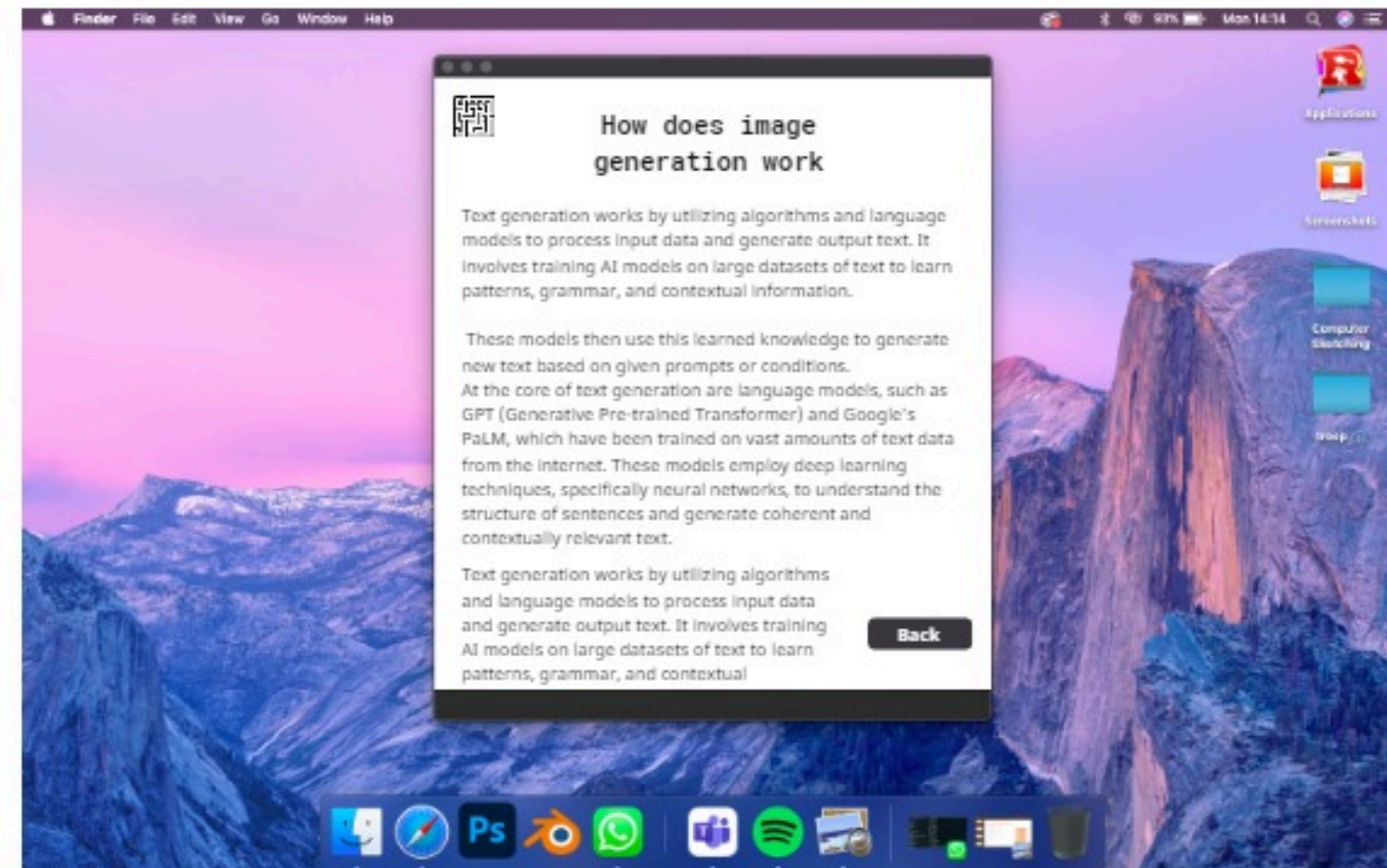


Show
options to
work more
efficiently (4)

Thanking EM

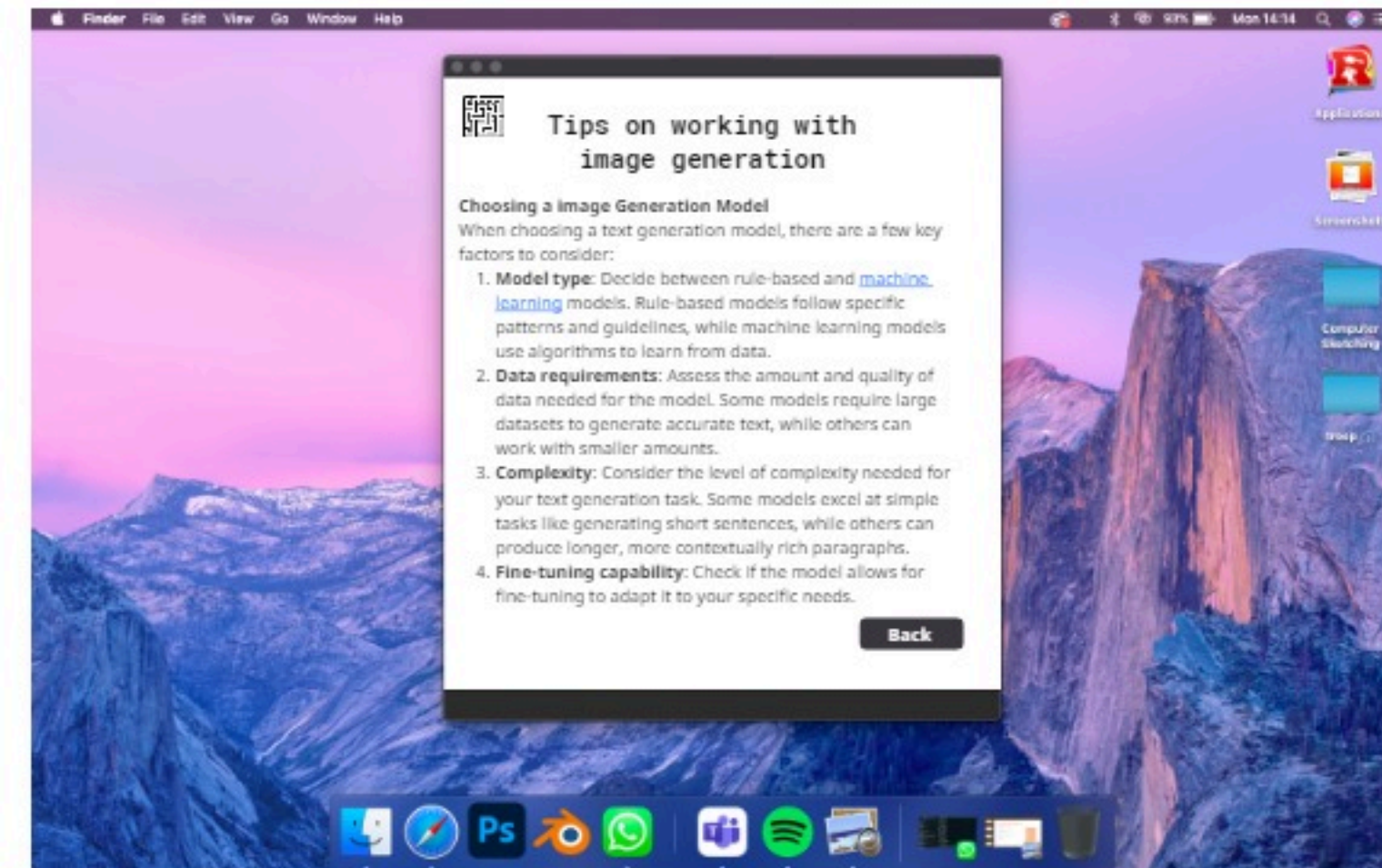


Retrieving information EM



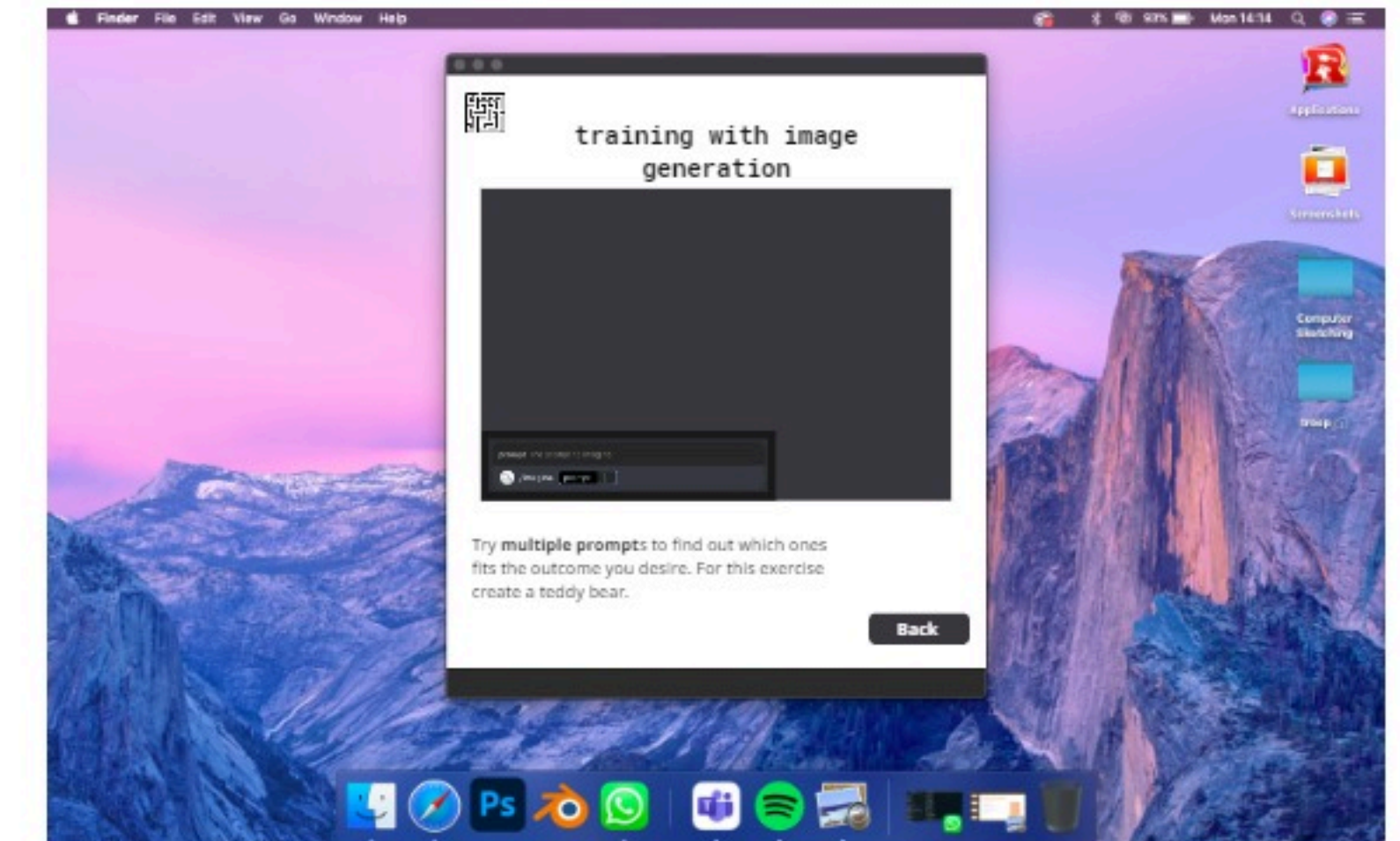
Show
options to
work more
efficiently (4)

Tips and tricks EM



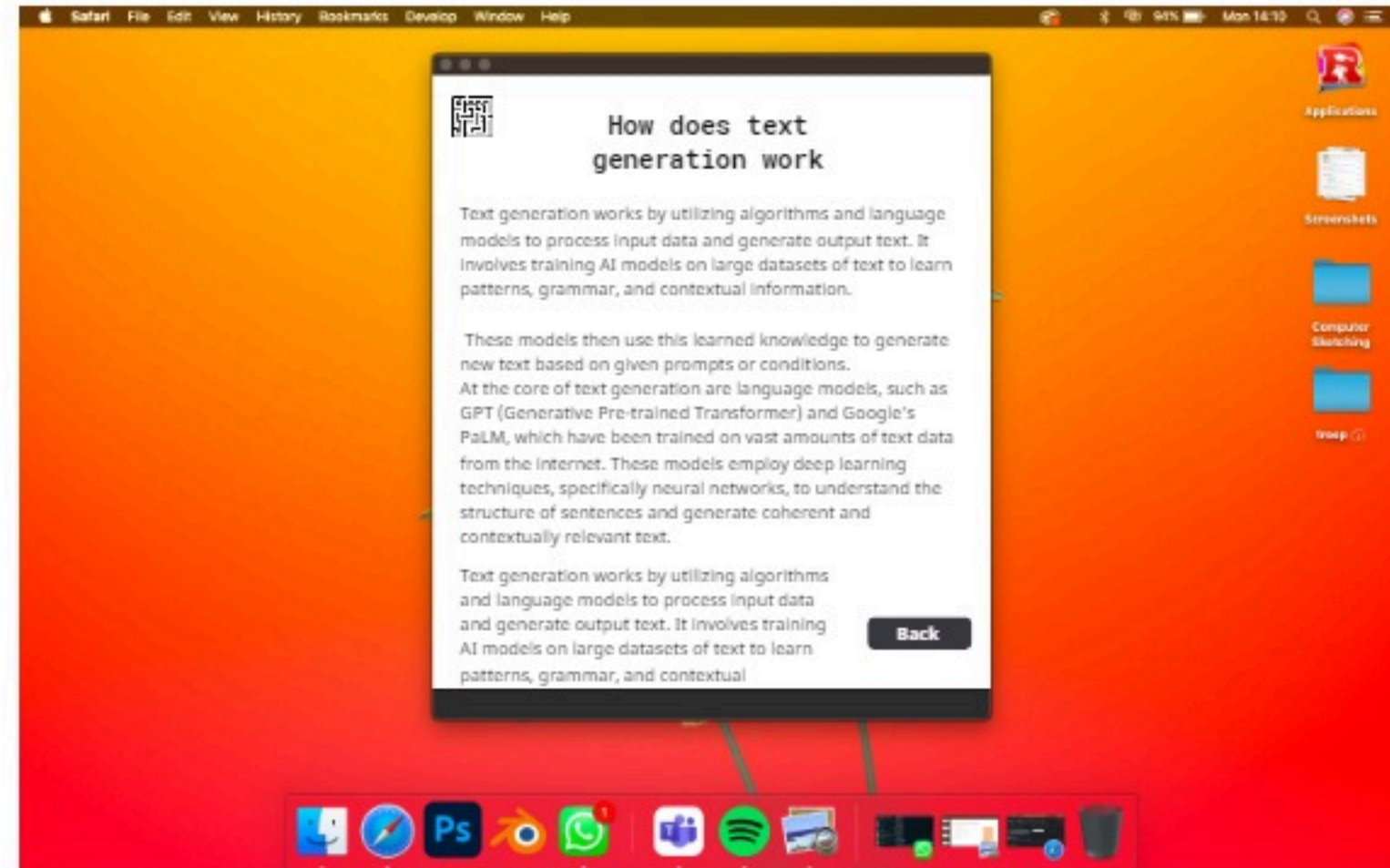
Show
options to
work more
efficiently (4)

Training image generation EM



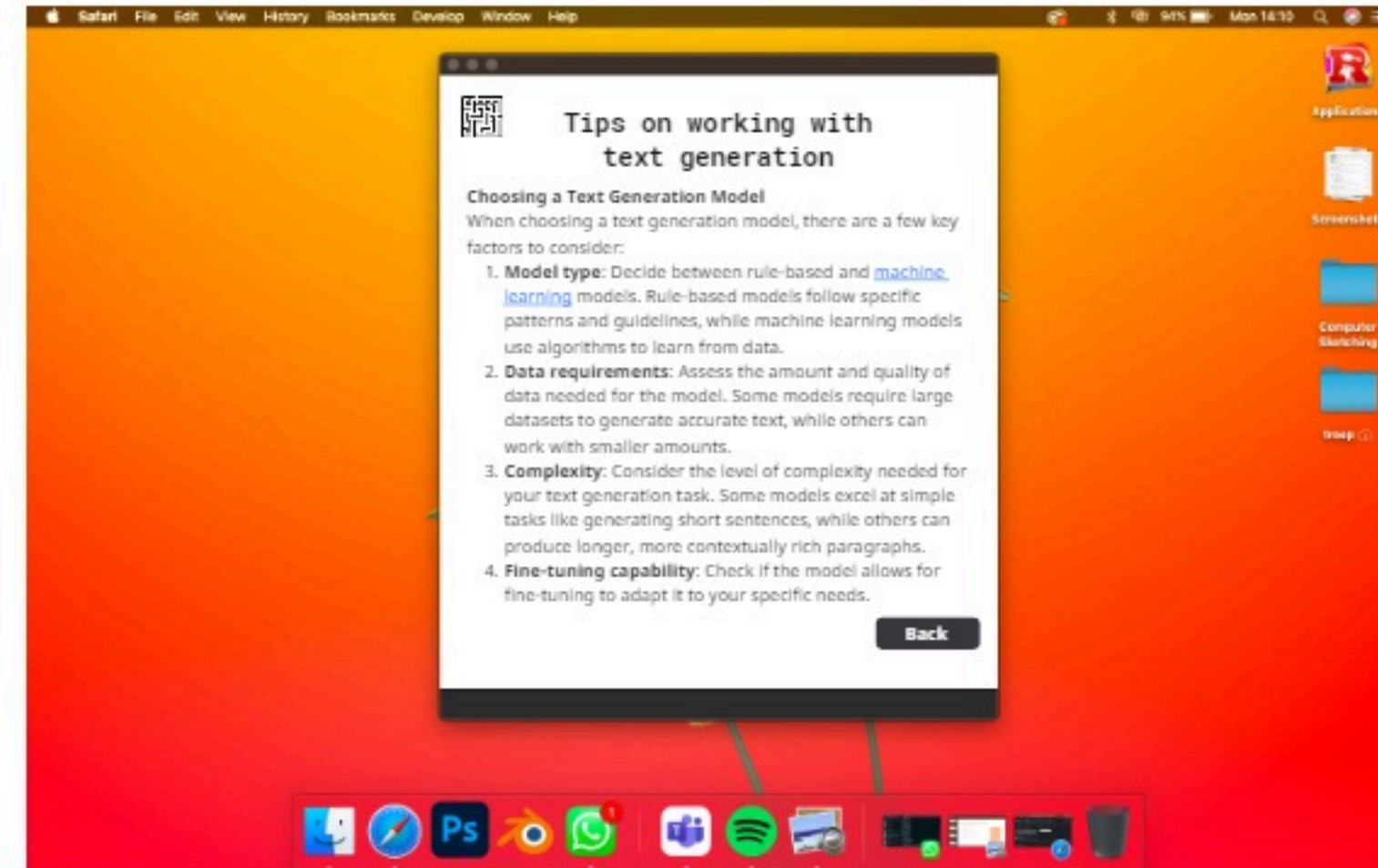
Show
options to
work more
efficiently (4)

Retrieving information MA



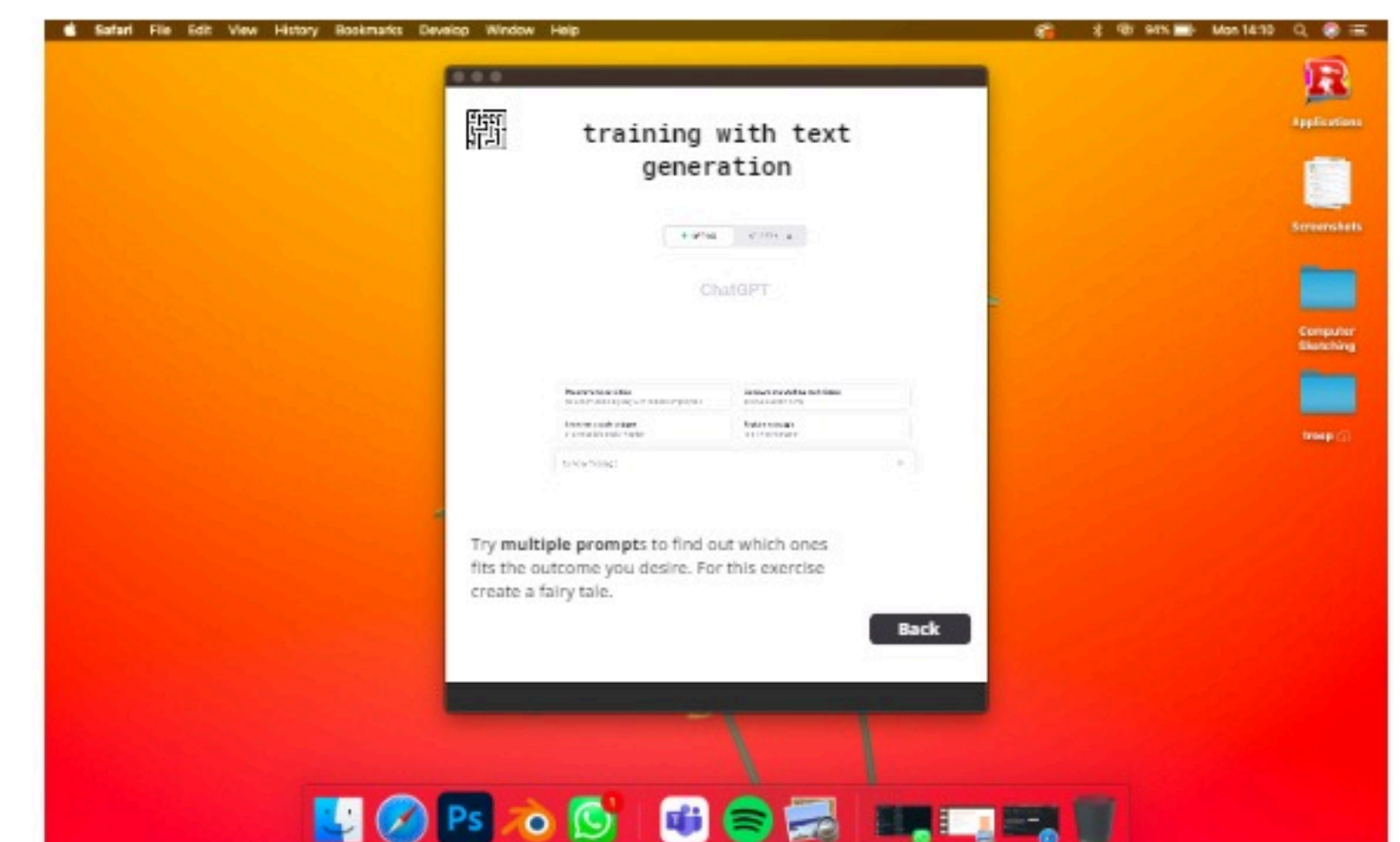
Show
options to
work more
efficiently (4)

Tips and tricks MA



Show
options to
work more
efficiently (4)

Recommend actions MA

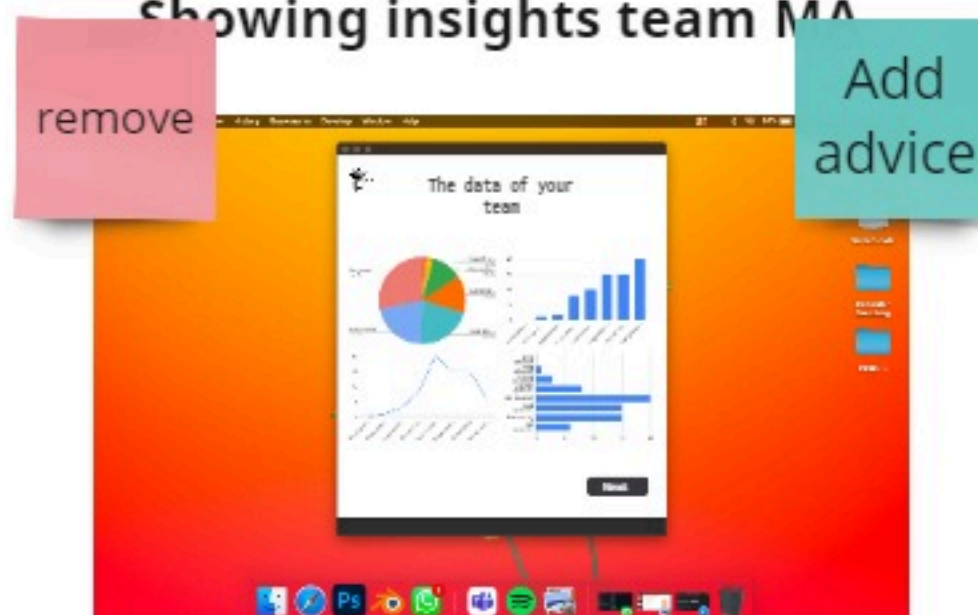


Show
options to
work more
efficiently (4)

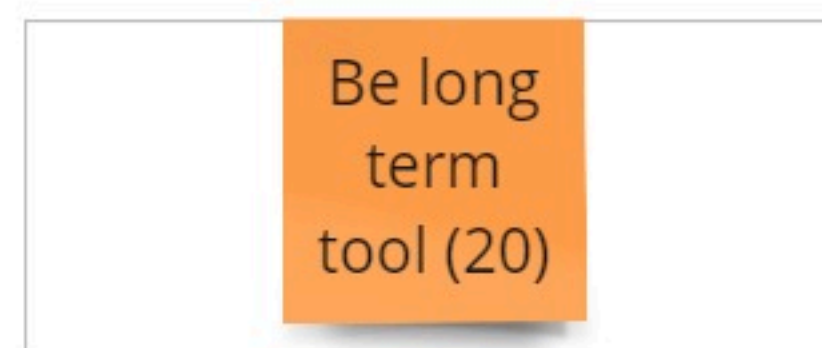
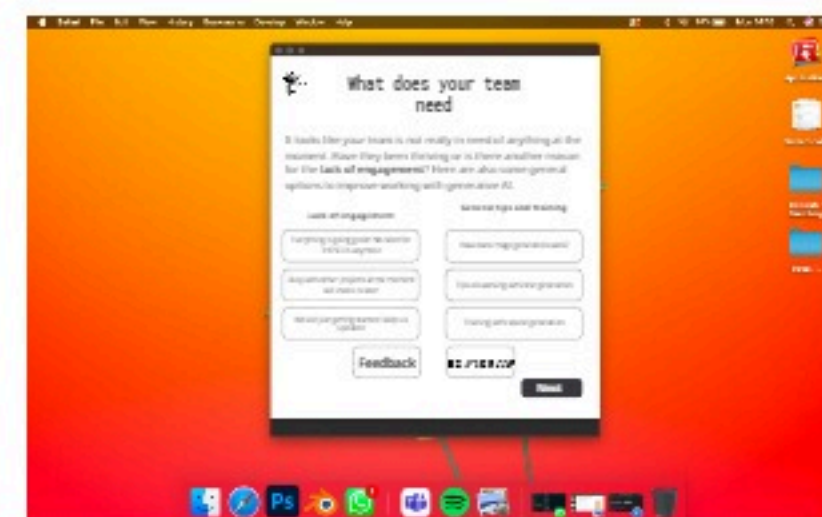
Welcome Standard MA



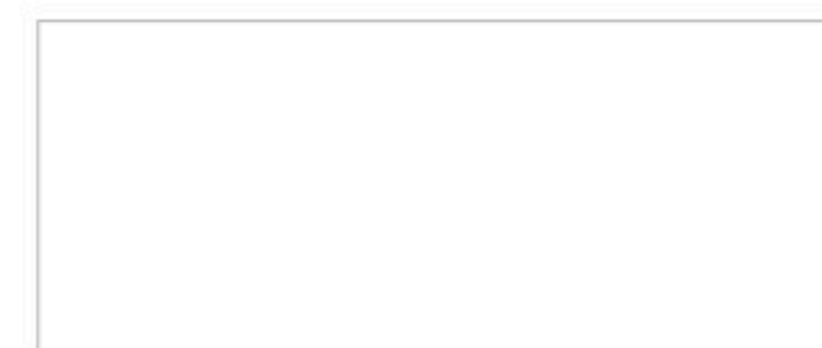
Showing insights team MA



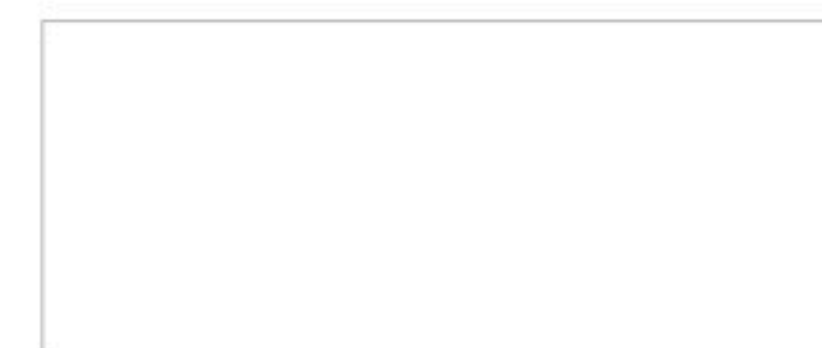
Lack of engagement MA



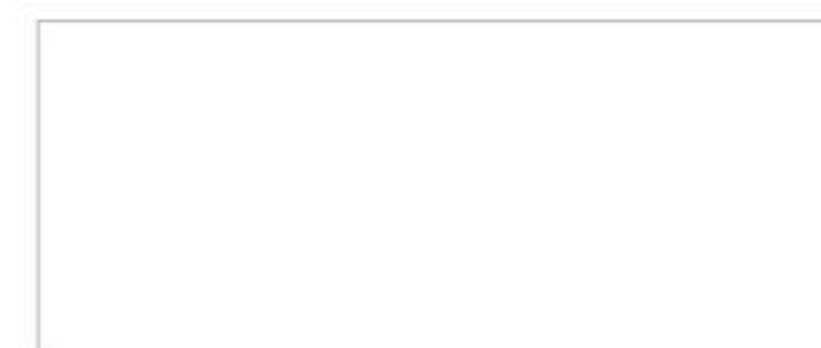
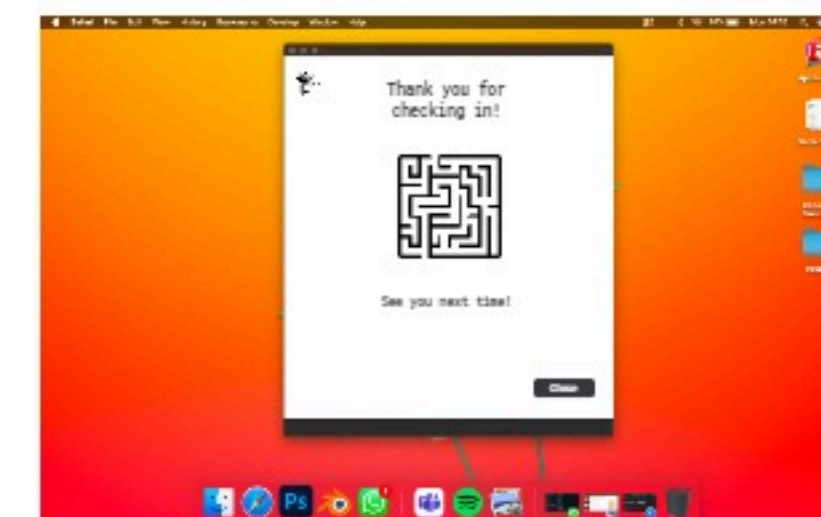
Showing insights MA



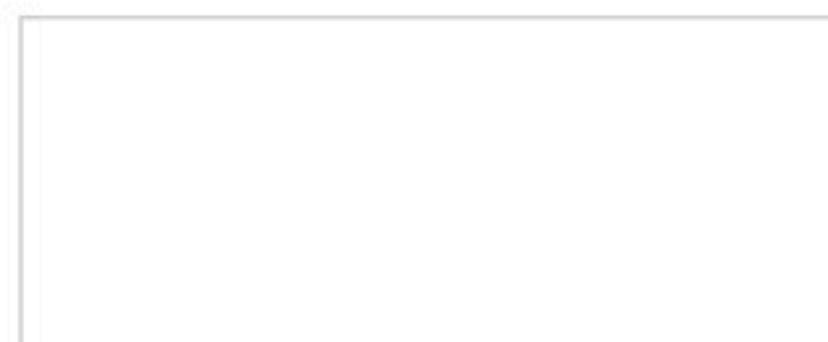
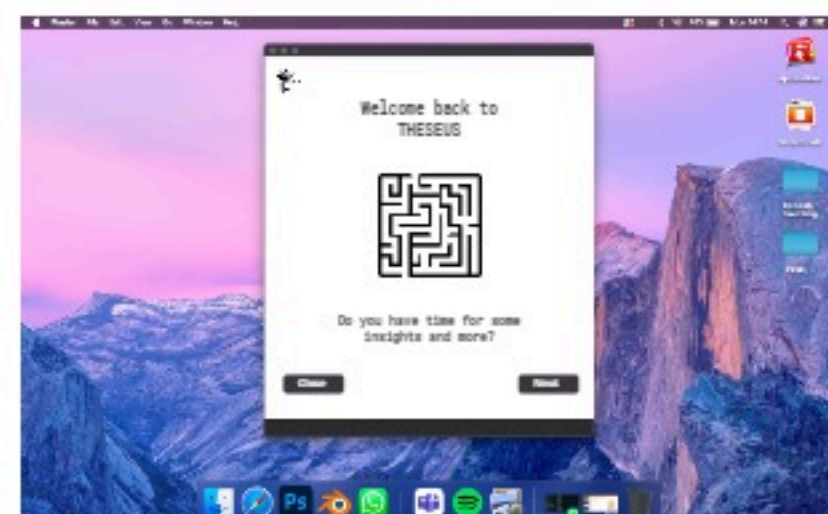
Recommend training MA



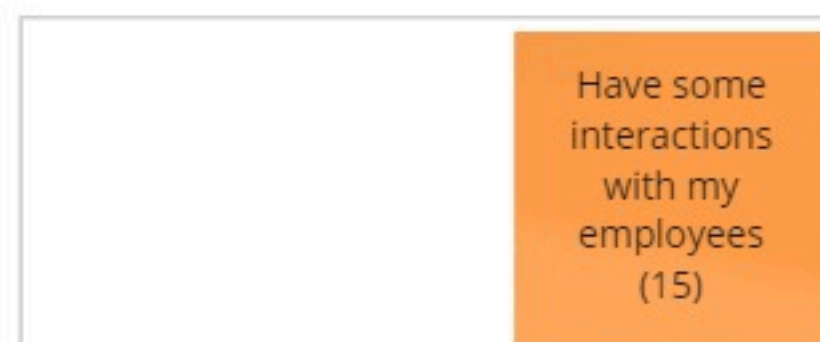
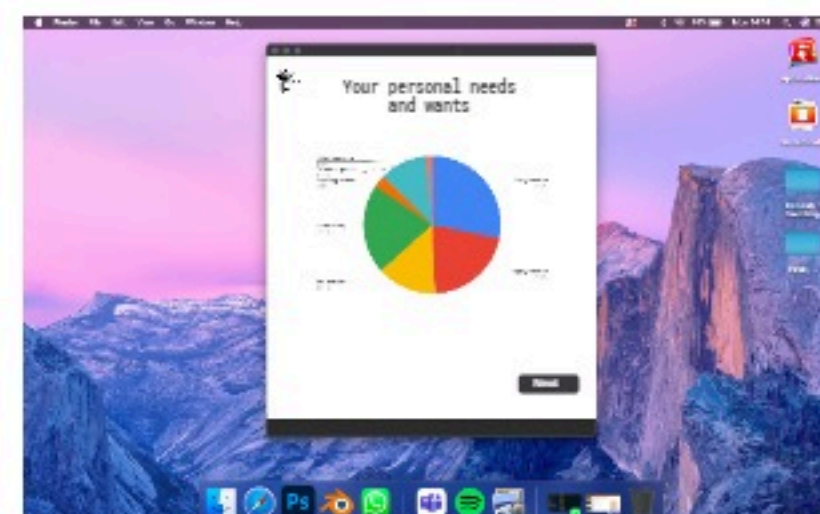
Thanking MA



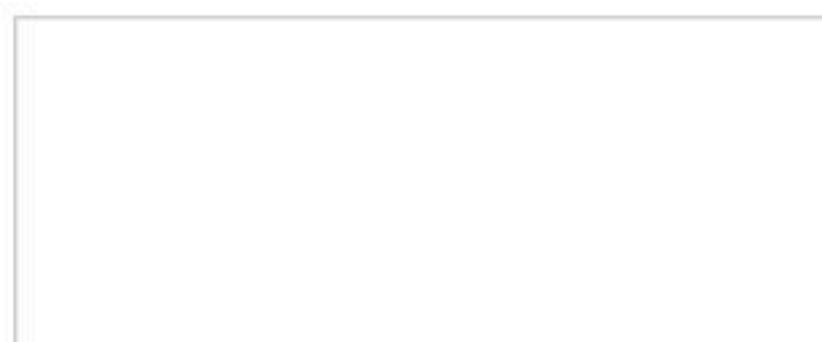
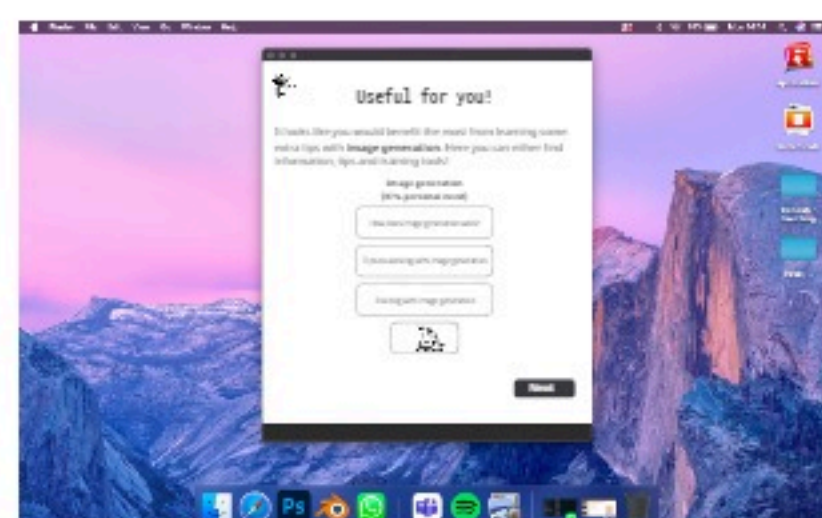
Welcome Standard EM



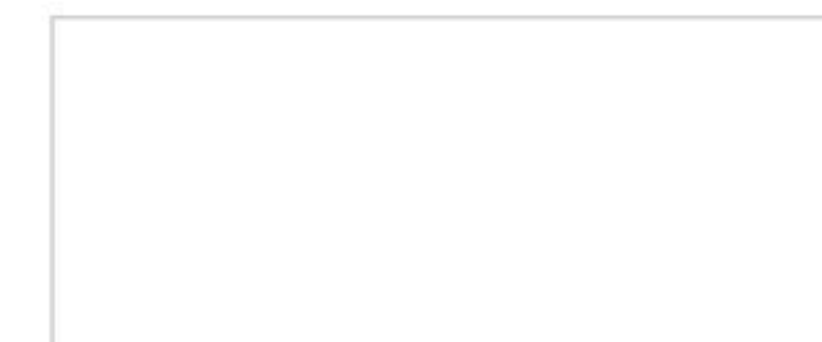
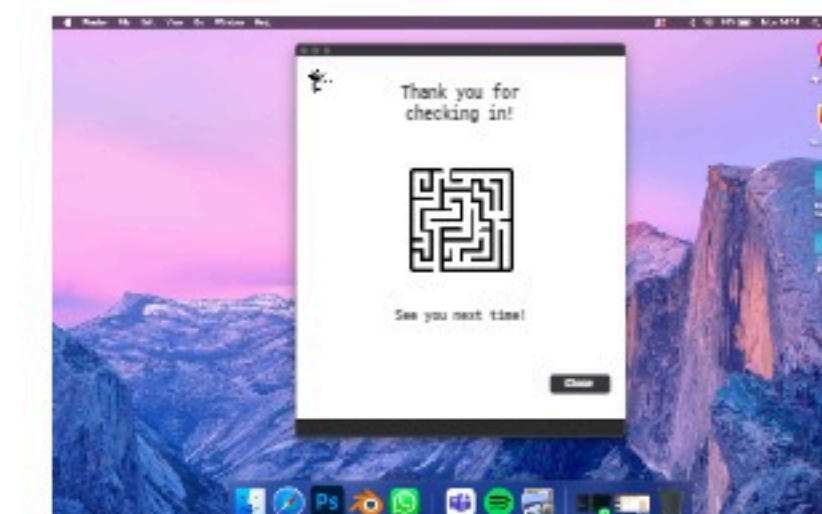
Showing insights EM



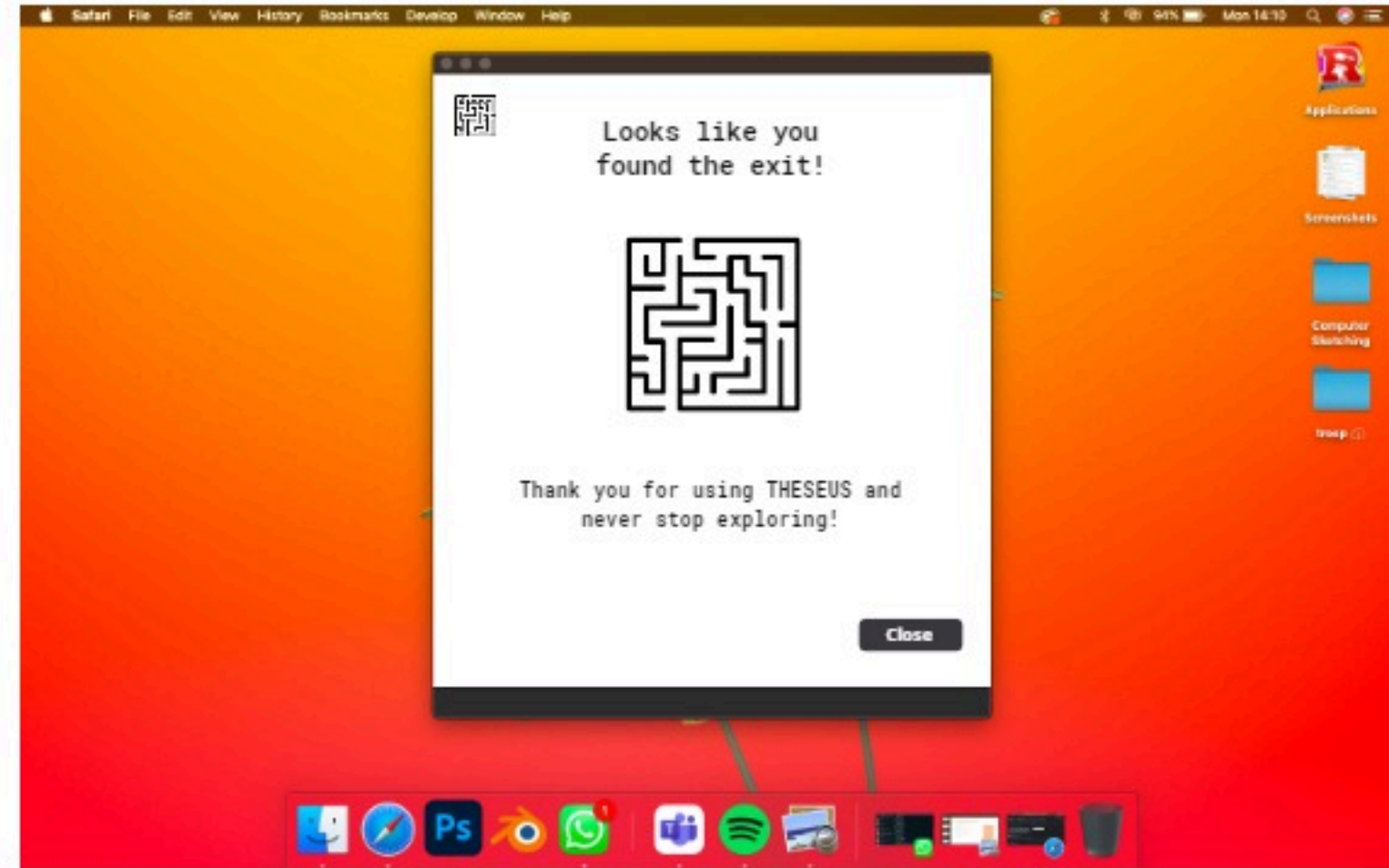
Recommend training EM



Thanking EM

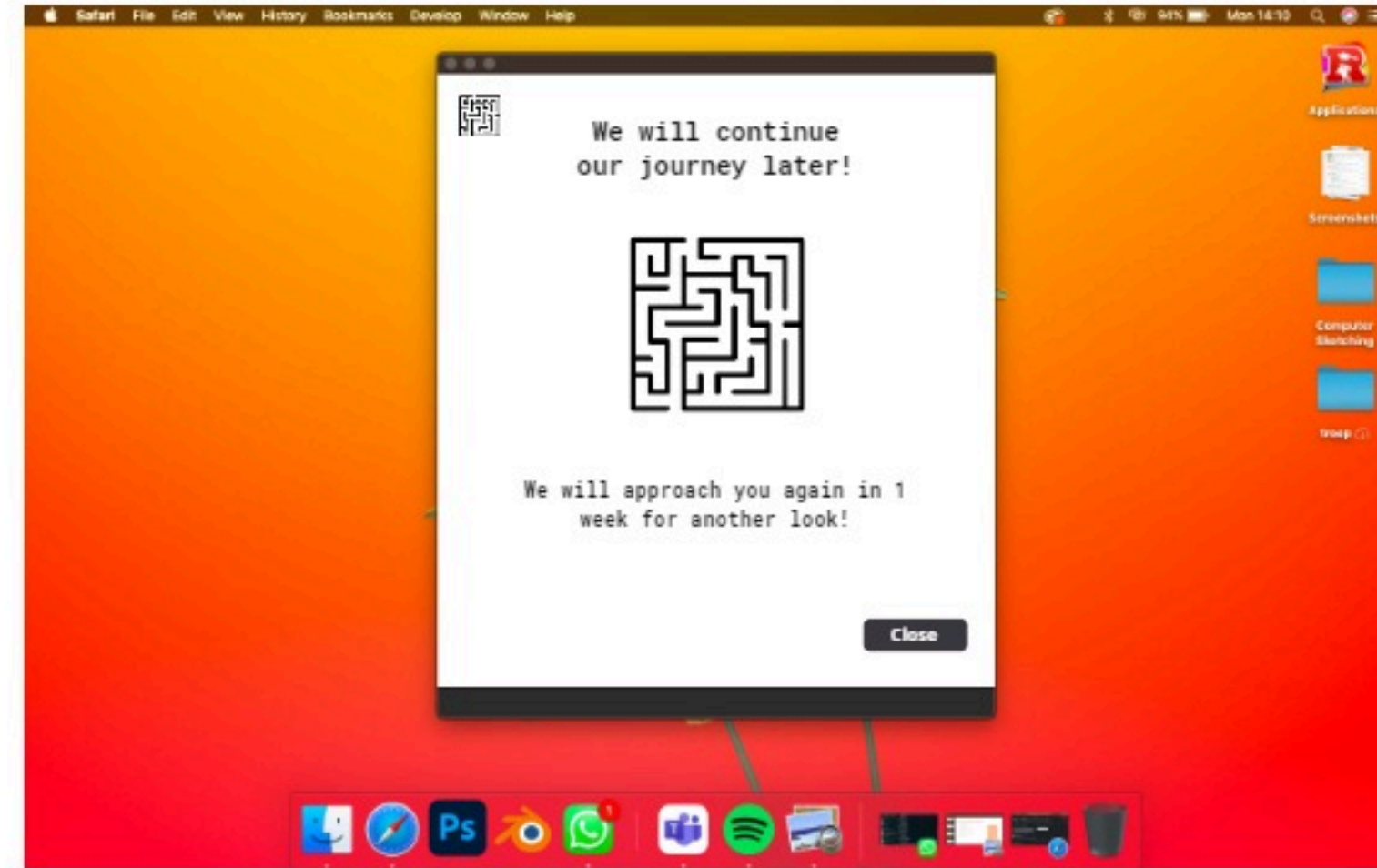


MA is done with THESEUS



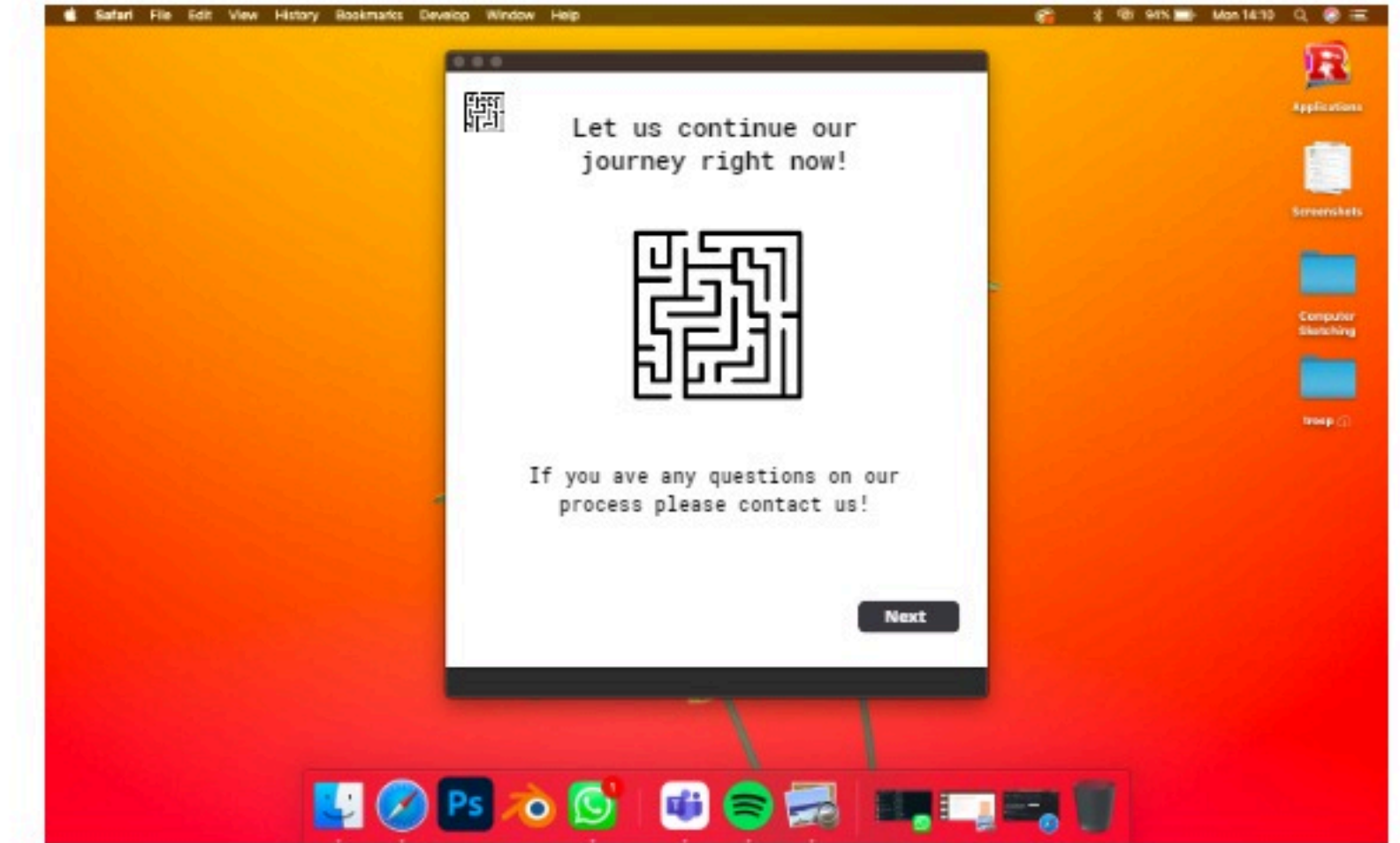
Be long
term
tool (20)

MA is too busy for THESEUS



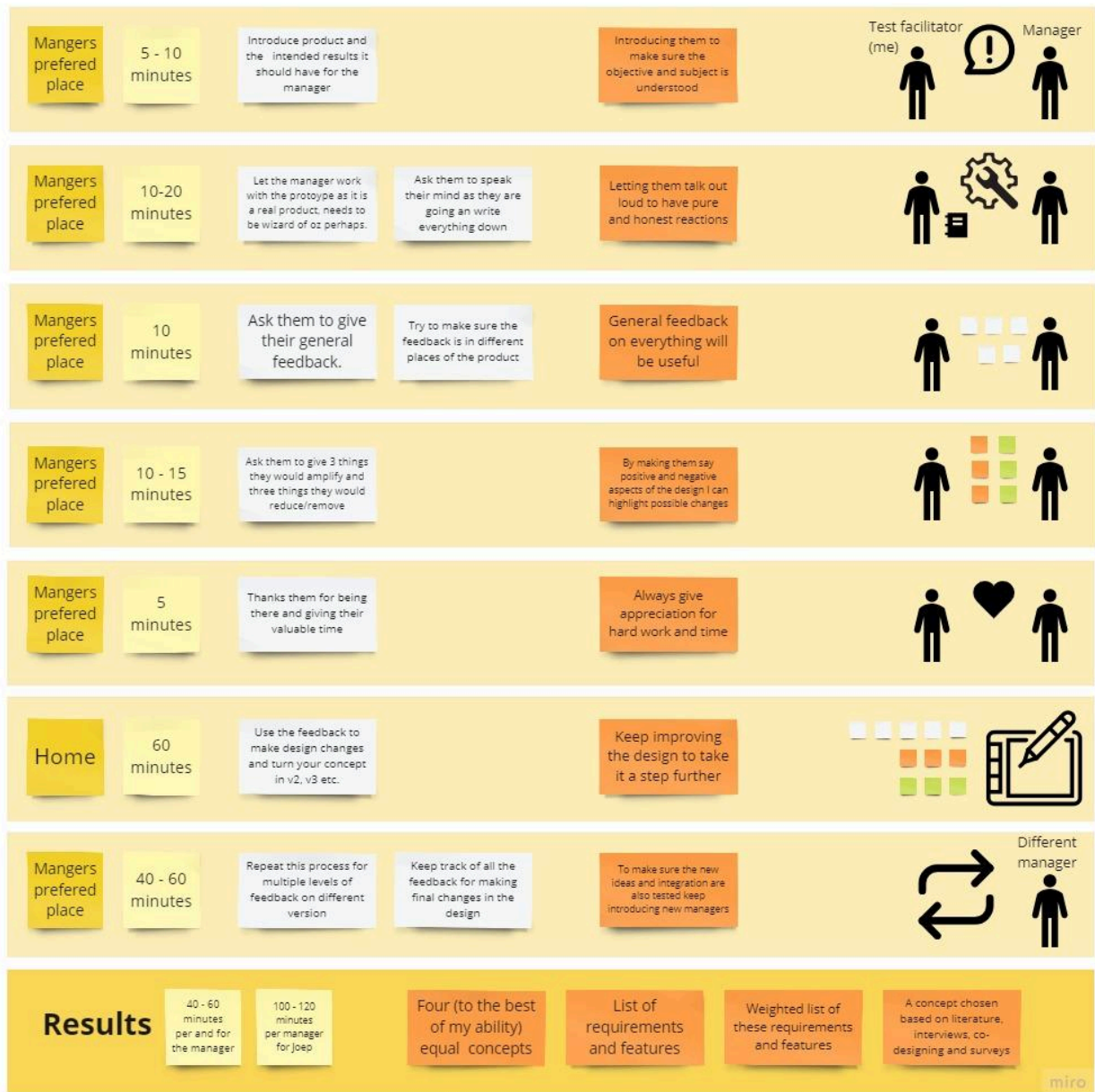
Be long
term
tool (20)

MA isn't done with THESEUS

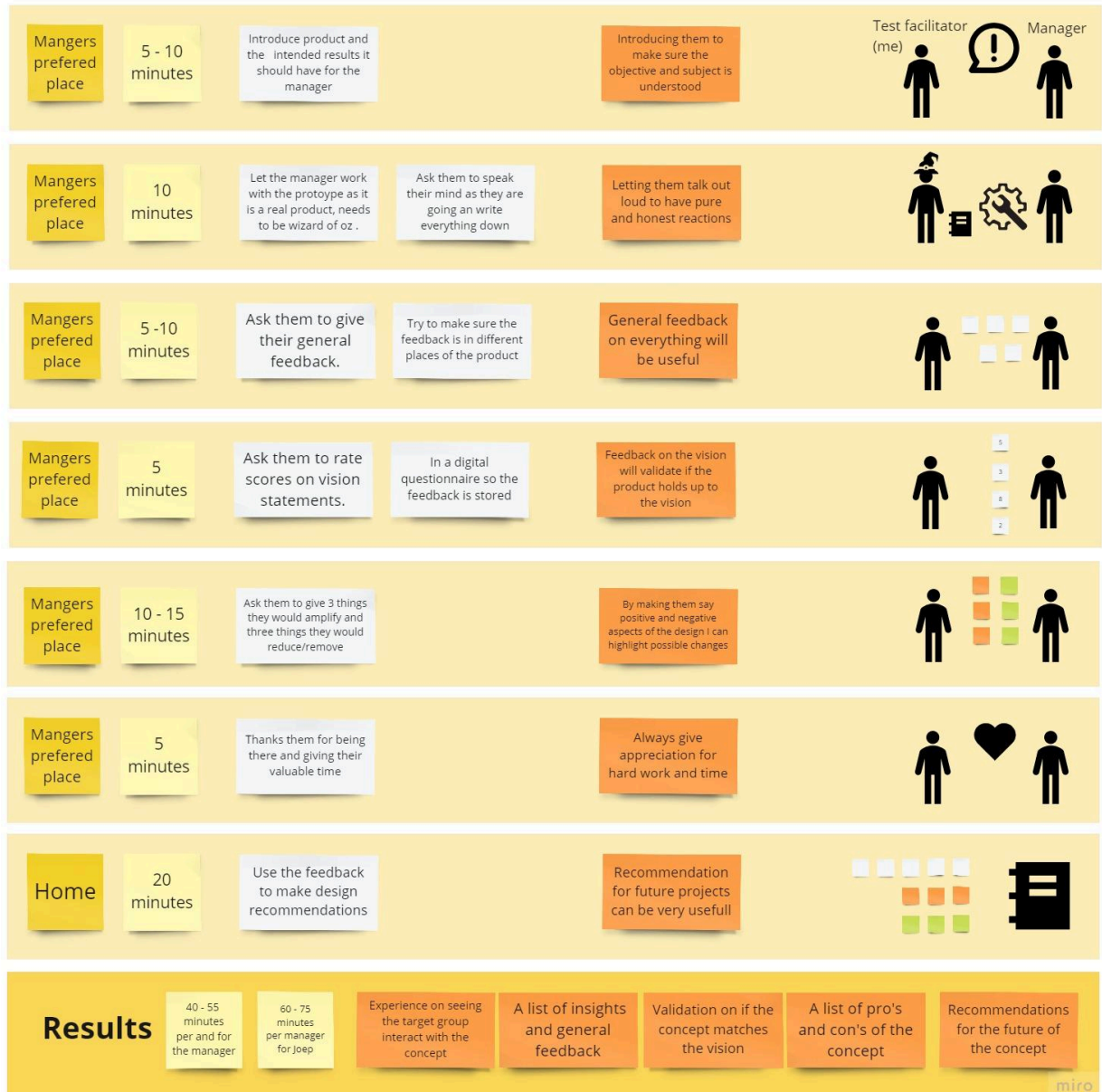


Be long
term
tool (20)

Appendix V: Initial testing protocol 1

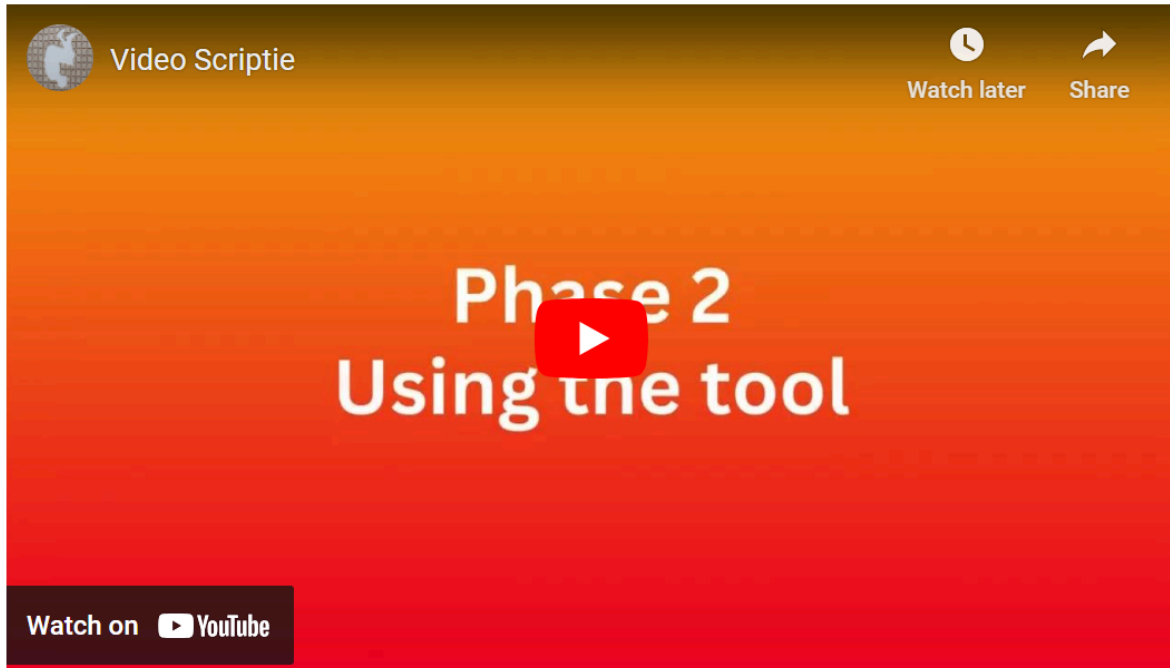


Appendix W: Initial testing protocol 2



Test survey

Hello and thank you for participating in the validating of the concept THESEUS. You have a 3 minute video where the concept will be explained. After you have watched the video you can click on the next button to start the questionnaire.



[← Back](#)

The following questions are based on the video you have just watched. You are asked to answer three different types of questions. Please keep the experience you have just had in mind when answering these questions.

[Next →](#)

General feedback

What is your general impression for this concept? *

Please provide the general impression you have for this concept. You can express your feedback in text.

Submit →

Rating vision statements

These questions will focus on the vision the tool was created for. Rate the following statements on how much you feel the concept delivers on that statement

The tool gets me thinking on the implications of integrating generative AI in my team. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool helps me come more competent with generative AI. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool gives personal advice for my own integration process. *

1	2	3	4	5
Strongly disagree			Strongly agree	

The tool saves me time in researching advice and information about generative AI. *

1	2	3	4	5
Strongly disagree		Strongly agree		

The tool provides insights on the risks and benefits of generative AI. *

1	2	3	4	5
Strongly disagree		Strongly agree		

Next →

Tops and tips

In this question we will ask you to write down three things you like about the concept and three thing you would change about the concept. Please be as honest as you can be.

Please write down something you like about this concept (1/3). *

Please write down something you like about this concept (2/3).

Please write down something you like about this concept (3/3).

Please write down something you would change or add in this concept (1/3). *

Please write down something you would change or add in this concept (2/3).

Please write down something you would change or add this concept (3/3).

Submit →

Thank you for participating!

Appendix Y: Validation survey results

Responend	What is your general impression for this concept?	The tool gets me thinking on the implications of integrating generative AI in my team
1	Good concept	3
2	Can be interesting!	5
3	Relevant concept	3
4	Interesting concept, curious how you would integrate this in the workplace	4
5	Nice video, a lot of information	4
6	Can be very helpfull to learn about de possibilities of generative AI and how it can be used in your own specific situation.	4
Average		3.833333333
Responend	Please write down something you like about this concept (1/3).	Please write down something you like about this concept (2/3).
1	It seems accessible	It seems useful to gain insight into your team
2	It is an concept that is topical	It deels easy to use
3	Employee integration	
4	Option to chose where you want to learn	Option on either learning or practice
5	That it gives advice for me as a person	
6	You can get inspiration out of the app on how to use generative AI in your own specific situation	You can get usefull information on the concept of generative AI.

The tool helps me come more competent with generative AI.	
	4
	3
	4
	5
	3
	4
	3.833333333
Please write down something you like about this concept (3/3).	
Its is as well for me as well as for employees so they can see for themselves	
The app uses your own input to improve the results you get out of the app. You can use it with your whole team.	

The tool gives personal advice for my own integration process.	The tool saves me time in researching advice and information about generative AI.
3	4
3	2
5	4
5	3
3	4
4	4
3.833333333	3.5
Please write down something you would change or add in this concept (1/3).	Please write down something you would change or add in this concept (2/3).
?	
Put 1 or to 2 relatable examples in de video	Is there some kind of support when following up the advices lead to problems?
More ways to personalize	
More on the implications of generative AI	
Too many options	
Maybe you can provide a demo with some real live examples so customers get a better view of what the app has to offer	Make more clear that the app can inspire, inform en help you implement.

The tool provides insights on the risks and benefits of generative AI.	
	4
	3
	2
	2
	3
	4
	3
Please write down something you would change or add this concept (3/3).	
?	

Appendix Z: Graduation brief

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !



family name _____
initials _____ given name _____
student number _____
street & no. _____
zipcode & city _____
country _____
phone _____
email _____

Your master programme (only select the options that apply to you):

IDE master(s): ☐ IPD ☐ Dfl ☐ SPD

2nd non-IDE master: _____

individual programme: _____ - - _____ (give date of approval)

honours programme: ☐ _____

specialisation / annotation: ☐ _____

☐ _____

☐ _____

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair _____ dept. / section: _____

** mentor _____ dept. / section: _____

2nd mentor _____

organisation: _____

city: _____ country: _____

comments
(optional)

⋮

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..



Second mentor only applies in case the assignment is hosted by an external organisation.



Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair _____ date ____ - ____ - ____ signature _____

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: _____ EC

Of which, taking the conditional requirements into account, can be part of the exam programme _____ EC

List of electives obtained before the third semester without approval of the BoE

☐ YES all 1st year master courses passed

☐ NO missing 1st year master courses are:

name _____ date ____ - ____ - ____ signature _____

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ☐ APPROVED ☐ NOT APPROVED

Procedure: ☐ APPROVED ☐ NOT APPROVED

comments

name _____ date ____ - ____ - ____ signature _____

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

[illegible]

space available for images / figures on next page

introduction (continued): space for images

image / figure 1: _____

image / figure 2: _____

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date - - - - end date

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.