



Leiden University

ICT in Business and the Public Sector

Crystal Ball or Glass Marble:

Using ChatGPT to support Technology Forecasting with
Scenario planning

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ABSTRACT

Organisations face complex strategic decisions due to rapid technological and social changes and seek a competitive edge through early identification of emerging trends. Technology forecasting is a systematic approach to anticipate the potential direction of technological change. In response to the rapid technological advancements, researchers are investigating approaches to enhance technology forecasting, with artificial intelligence emerging as a promising tool for improvement. However, the practical testing of artificial intelligence implementation in technology forecasting methods remains unexplored.

This research investigates the viability of using ChatGPT to support scenario planning as a technology forecasting method. The study designed a scenario planning workshop with various applications of ChatGPT. The workshop was conducted three times in collaboration with the digital advisory department of KPMG.

The research indicates a number of barriers and benefits associated with the implementation of ChatGPT as support in scenario planning. The research also illustrates three lessons learned during the execution of the study. First, the dilemma between augmenting creativity through the use of ChatGPT while also potentially replacing personal creativity. Second, the scepticism towards answers generated by ChatGPT along with concerns regarding the validity of its responses. Lastly, the challenge of integrating a technology forecasting method within an organisation.

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1. Introduction

“For a successful approach to societal challenges, technological breakthroughs are of great importance. Key technologies such as photonics, ICT, artificial intelligence, nano-, quantum-, and biotechnology will profoundly transform the way we live, learn, innovate, work, and produce” (Ministerie van Economische Zaken, 2018)

The world is undergoing rapid transformations where technological advancements have emerged as a cornerstone of overall progress, leading to an era characterised by unprecedented innovations (Drew, 2006). Only six decades separate the Wright brothers’ first motorised flight in 1903, which was a remarkable achievement at that time, from the historic moon landing in 1969. This rapid transformation exemplifies the astonishing pace at which the technological progress continued with satellites and space stations being developed. In the same period, digitisation and the information revolution unleashed new possibilities and opportunities.

Since 2011 the World Economic Forum publishes an annual report on the emerging technologies that can transform economies and societies (World Economic Forum, 2023). The currently emerging technologies contain, flexible batteries, generative artificial intelligence (AI), the metaverse for mental health and sustainable computing and have the power to disrupt industries. However, the impact of these technologies is uncertain and hard to predict. In this evolving landscape and the exponential growth of technologies it is important for individuals, organisations, and governments, to try to understand and prepare for the future (Firat et al., 2008).

With the world where changes occur in a rapid pace and the advancements seem random, some might question the relevance of forecasting the future. With all the technological advancements and their impact to transform economies and societies, is it even possible to predict what comes next? However, despite all these questions and challenges the significance of forecasting remains. In fact, forecasting has even become more critical to navigate through all the complexities of an everchanging world.

One of the methods that can be used for forecasting is technology forecasting. Technology forecasting are all systematic attempts to understand and anticipate the potential direction, characteristics, and effects of technological change (Firat et al., 2008). The goal of technology forecasting is to provide insight in the potential opportunities and challenges that emerging technologies can bring to industries and societies. Technology forecasting can help organisations to anticipate on the upcoming trends instead of responding to the trends and serves as a strategic tool to assist in decision making (Inman, 2004). An example to show the importance of accurate forecasting in a time of technological evolution is between AT&T and McKinsey. In the late 1970s, AT&T asked McKinsey for advice on entering the cell phone market because cellular technology was emerging. McKinsey advised to not invest in cellular technology due to the infrastructure costs and uncertain demand. AT&T followed their advise and chose not to invest. Subsequently, the cell phone market boomed and AT&T missed a huge opportunity that costed the company 12 billion dollars. AT&T’s decision to not enter the market shows the impact of incorrectly forecasting emerging technologies (The Economist, 1999).

New technologies show great potential to improve the application and methods of technology forecasting (Gordon et al., 2005). AI is one of the technologies that has the potential to improve the field of forecasting. AI improves technology forecasting methods by adding the possibility to analyse large amounts of data (Geurts et al., 2022). This ability in combination with the ability of AI to recognise patterns in large data sets can impact the way we use traditional forecasting methods. Combining the traditional forecasting methods with the capabilities of AI can lead to news ways of combining human and AI and help to create better forecast of the future (Grüning, 2022).

1.1 Problem statement

Organisations are faced with a challenging situation as technological innovation and social changes are accelerating, leading to a complex array of strategic decisions. The decision-making process becomes increasingly complex as the predictability of future developments declines. In order to retain a strong market position and remain competitive amidst evolving market dynamics, organisations are seeking for opportunities to gain a competitive edge. This competitive drive encourages organisations to proactively identify emerging topics and trends at an early stage and trying to formulate appropriate strategies to address them (Coccia, 2017; Drew, 2006).

The process of forecasting involves exploring novel technologies and concepts that did not exist in the past. For many AI technologies, making predictions about terminologies they have not encountered before presents a challenge. AI technologies are better suited for application within clearly defined domains. Identifying emerging technologies poses a challenge within the field of foresight (Cozzens et al., 2010). However, these challenges have not stopped research to investigate the best way to harness the positive capabilities of AI to support technology forecasting methods.

There are still many uncertainties regarding the role of AI in the forecasting field and its diverse potential applications within various methodologies. Geurts et al. (2022) argued that AI could have a role in an approach that includes both human intelligence in combination with artificial intelligence. Geurts et al. (2022) introduced the Hybrid AI-expert approach and other papers have explored certain implementations (Spaniol & Rowland, 2023). However, a gap remains in literature regarding the practical testing of possible applications of artificial intelligence. This research will explore a combination of human intelligence with support of AI in the field of technology forecasting.

1.2 Research question

As argued by Gordon et al. (2005) new technologies can improve current forecasting method. Geurts et al. (2022) proposed the Hybrid AI-expert approach that showed the potential synergy between human and AI and exemplifies how a new technology can improve an existing forecasting method. Spaniol and Rowland (2023) went further on these finding and demonstrated an application of AI by generating scenarios using ChatGPT.

This research will go a step further and test how ChatGPT can support scenario planning as a forecasting method by designing a workshop method with various applications of ChatGPT to find barriers and benefits and aims to answer the following question: *What are barriers and benefits of using ChatGPT to support scenario planning as a technology forecasting method?*

1.3 Thesis outline

The first chapter provides an introduction to the research with a description of the problem statement and the rationale for the research question. The second chapter will delve deeper into relevant literature, introducing technology forecasting specifically applied to scenario planning. Subsequently the technology ChatGPT will be introduced along with an exploration of the research gap this research aims to address. The research methodology will be described in chapter 3, including how action research will be employed in the research. The fourth chapter will describe the various steps of the action research process and discuss the three conducted workshops, accompanied by their respective results, evaluation and ends with the specified learnings. The fifth chapter contains the research's conclusions together with an assessment of the research's limitations and make recommendations for future work. The appendices are included at the end of the document.

2. Literature Review

This section provides a comprehensive overview of the scientific literature concerning relevant technology forecasting methods is structured in four sections. This literature overview is essential to comprehend current research directions and the positioning of this research within a technological framework. The goal of this research is to examine the potential of ChatGPT in supporting scenario planning. The literature review is structured in four sections. The first section offers the definition of technology forecasting in combination with an introduction of the practice. The second section delves deeper into the selected technology forecasting method for this research, scenario planning. The third section focuses on the technology examined in this study for supporting scenario planning, ChatGPT. The final part defines the research gap and establishes the framework for examining the support of ChatGPT in scenario planning.

2.1 Technology Forecasting

The first official report of a systematic examination of the future of technology likely occurred in 1935 when the New Deal's National Resource Commission tasked a committee to investigate the future of 13 major inventions (Coates et al., 2001). The resulting report aimed to forecast the economic and social impact of the emerging technological inventions. In the following decades technology forecasting evolved to a systematic method to explore the future of technology, leading to the development of various methodologies under different names. Some common terms include technology assessment, technology monitoring, technology intelligence, technology forecasting, technology foresight, and road mapping (Coates et al., 2001; Nosella et al., 2008).

In literature, all these terms are used to indicate the observation of future technologies and their assessment, with minor nuances and variations in the exact definition and meaning for each term (Nosella et al., 2008). In this research the term technology forecasting is used, adopting the perspective outlined by Coates et al. (2001) and Yoon & Park (2007). They define technology forecasting as: all systematic attempts to understand and anticipate the potential direction, characteristics, and effects of technological change (Firat et al., 2008). Technology forecasting facilitates the decision-making processes in areas such as prioritisation and risk mitigation for technology development. Technology forecasting caters to the needs of both the public and private sectors and is essential for small and large organisations reliant on technologies (Coates et al., 2001).

One approach to grasp the concept of technology forecasting is by drawing an analogy to weather forecasting. Similar to weather predictions, technology forecasting may not be perfect, but using it allows for better planning and decision-making. A reliable forecast has the potential to optimise gains and mitigate losses for an organisation by considering future conditions (Firat et al., 2008).

In the past, technology utilisation remained limited, but in our current society, technology has become a vital part of our lives. Whether it is driving the economy, maintaining, and improving our living standards, or protecting the environment from the pressures of population growth. Nations are intertwined in a global economy driven by innovation and competition, thereby magnifying the significance of technology as a subject of analysis to support decision-makers. Currently, the swift pace of technological advancements poses a challenge that demands access to accurate and effective information on emerging technologies. Staying informed about new and evolving technological developments is essential to make an informed decision on the usefulness and lifespan of the emerging technologies. Consequently, technology forecasting has witnessed a resurgence in the last decades, employing diverse methods to achieve the various objectives (Coates et al., 2001).

The numerous technology forecasting methods can be categorised into families of methods in several ways. Two well-known classifications of these methodologies are the nine families to categories the

forecasting methods proposed by Firat et al. (2008) and the five main methods identified by Porter (2010). Both classifications include scenarios as a distinct category within the distribution. In the context of this research, scenarios, are particularly of interest due to the exploration of combining expert-based foresight together with AI (Geurts et al., 2022). Van der Heijden (2005) highlighted the significance of a crucial aspect of scenarios, emphasising the collaborative nature of the creation process and the focus on 'together'. Consequently, this research will focus on the scenario planning method.

2.2 Scenario planning

Schoemaker (1995) described scenarios as representations of possible futures and how different elements will interact with each other. Gordon et al. (2005) described the uncertainty of the future with the following statement: "It is hard to imagine the consequence of a new breakthrough before it occurs" (Gordon et al., 2005). He argued the necessity to explicitly address uncertainties and underlying assumptions in forecasting methods due to the inherent limitations in achieving an accurate deterministic representation of the future. A major uncertainty of the future is the challenge of identifying emerging technologies that will become relevant and their potential impact on the organisation (Featherston et al., 2016).

Traditional technology forecasting approaches are often characterised as rational and aim to identify an optimal or revolutionary strategy. In this regard, scenario planning differentiates itself from other technology forecasting methods (Varum & Melo, 2010). Since uncertainties resulting from new and unforeseen events, noise or changes to the environment can never be completely eliminated from the decision-making process, it is illogical to rely solely on a single-value deterministic image of the future (Gordon et al., 2005). In a future characterised by uncertainties, scenario planning does not strive to produce a precise forecast, but rather focuses on generating alternative images of possible futures (Postma & Liebl, 2005). While no created scenario can offer an entirely accurate description of the future, they serve the purpose of supporting decision-makers in recognising, considering, and reflecting on the uncertainties they are likely to encounter in the future. In summary, scenarios are representations of possible futures and describe how different elements will interact with each other (Schoemaker, 1995).

As previously stated, one of the strengths of scenario planning is its ability to incorporate uncertainties into forecasting, generating multiple possible images of the future rather than a single image of the future, and thereby supporting organisations in their strategic decision-making (Amer et al., 2013). The consideration of uncertainties also enhances its effectiveness in volatile environments (Vanston, 2003). Another advantage of scenario planning lies in its adaptability to accommodate a diverse and wide variety of participants. As the number of users increases, effective communication becomes more important, and scenarios excel in the communication aspect (Porter, 2010). Additionally, scenarios provide a future perspective that is accessible to individuals without specialised knowledge in the subject (Martino, 2003). A final advantage is that scenarios adopt a comprehensive approach, encompassing elements that may be difficult to model and incorporating elements that might otherwise be overlooked (Schoemaker, 1995).

However, scenario planning is not without its limitations. To remain effective, scenarios require continuous updates to address the realisation of past uncertainties and the emergence of new uncertainties. Additionally, an agile mechanism must be in place to respond promptly to situational changes (Vanston, 2003). Furthermore, scenarios offer limited value when the scope expands. As the projection of the future extends, uncertainties grow, resulting in a broader range of future possibilities and reduce the capacity for scenarios to provide a precise representation of the future (Amer et al., 2013).

2.3 ChatGPT

The large language model-based chatbot selected for this study was ChatGPT. The decision of ChatGPT was influenced by the existing familiarity of ChatGPT within the company's environment. The usage and discussions surrounding ChatGPT and how it should be used in an organisational context assisted in acquiring participants for the workshops. Additionally at the time of the workshops invitation, alternative options for large language models were not available. This led to the rationale for selecting the free version of ChatGPT 3.5 as the model for this research.

ChatGPT is an interactive publicly accessible large language model-based chatbot developed by OpenAI (OpenAI, 2023). The chatbot is based on the technology of a GPT language model (Liu et al., 2021). ChatGPT serves as an advanced chatbot equipped to fulfil various textual request, ranging from answering simple questions and composing poems to engaging in more complex discussions about productivity issues or generating personalised thank-you letters (Kirmani, 2023). ChatGPT achieves this level of functionality through the utilisation of extensive amounts of training data and an efficient design that allows it to comprehend and interpret user queries, subsequently generating responses that are remarkably close to human-like answers. Beyond serving as a capable chatbot and handling complex tasks, ChatGPT has also emerged as a pivotal innovation in the domains of natural language processing and AI (Liu et al., 2021).

ChatGPT is based on a Generative Pre-Trained Transformer (GPT) which refers to a language model created by OpenAI and is renowned for its ability to produce responses that are difficult to distinguish from human answers (Dale, 2021). The GPT model is developed and refined through two methods: generative, unsupervised pre-training on unlabelled data, and supervised fine-tuning aimed at optimising performance for specific tasks. In the initial phase, the model learns in a natural manner on unsupervised data without prior knowledge. This is comparable to how humans learn in a new environment. During the second phase of training, developers exert more guidance and refinement towards the organisations chosen direction (Radford et al., 2018).

GPT models are powerful tools but are not without limitations. Operating on large datasets using a statistical approach, GPT models can inadvertently adopt biases and stereotypes that exist within the training data (Dale, 2017). Additionally, GPT models lack the ability to grasp the context and semantic meaning of its generated responses leading to potential internal inconsistencies within the answers. In tasks requiring common sense or logical reasoning, ChatGPT may struggle if these aspects are absent in the training data (Strubell et al., 2019). Implementing GPT models in organisational settings can prove challenging due to the high costs associated with the substantial computational requirements and the large amount of data needed. Moreover, the significant energy consumption involved in maintaining the algorithm and the storage of the large amounts of data raise environmental concerns (Zhou et al., 2020). Despite these limitations, ChatGPT can still have significant impact across various industries.

2.4 Research Gap

In the time of rapidly changing markets, high levels of uncertainty, and numerous technological advancements, how can one trace the new technologies and ideas and select the most promising technological breakthrough? To effectively analyse emerging technologies that could have the potential to impact whole industries, informed decision-making concerning these technologies is crucial. Decision-makers can utilise current technology forecasting methods to assist them in making informed decisions (Coates et al., 2001; Postma & Liebl, 2005). However, Gordon et al. (2005) encourages exploring the role of emerging technologies in facilitating with discovering other promising technologies. *“New technologies carry great potential for improving and refining the conceptualisation and application of futures research (Gordon et al., 2005)”*.

Geurts et al. (2022) put forth an idea of how to improve futures research with a new technology. They suggest examining one of the most prominent emerging technologies, artificial intelligence, and how it could assist existing forecasting methods. The authors created a framework of five typical steps that are used in a forecasting process and investigate how AI can be incorporated in these steps, creating a hybrid AI-expert approach. They found that the hybrid AI-expert forecast approach is able to help decision-makers in formulating possible futures by enriching their information data base. The hybrid AI-expert approach has been applied in two projects (Geurts et al., 2022) and supported the projects with data scoping and data scanning.

Spaniol and Rowland (2023) continued the research in the use of the hybrid approach and examined the utility of scenarios generated by AI and how they could contribute to the forecasting field. The researchers selected ChatGPT as the tool for the scenario creation. They observed that the effectiveness of AI-assisted scenario generation is largely depending on the expert's ability to extract relevant insight from the AI-tool. While AI could help scenario planning with scenario development, the authors find AI unlikely to fully replace human experts in the forecasting field. However, this research never tested the practical application of using AI to support in scenario planning. This research intends to dive deeper into the hybrid AI-expert approach to examine the benefits and barriers associated with using AI, through the means of ChatGPT as a supportive tool in scenario planning by implementing ChatGPT in a scenario planning workshop.

3. Methodology

In this chapter, the research methodology for this research is described. The rationale behind the selection of the proposed method is discussed, justifying its appropriateness for the research, as well as outlining the structure of the research. Additionally, this chapter explains the case selection, describes the data collection and data sources, and presents the research design adopted for this study.

3.1 Research onion

To identify the most appropriate research approach for this study the research onion, which is adapted for future studies as proposed by Melnikovas (2018) was used. The research onion is illustrated in Figure 1 and shows the different stages of the research.

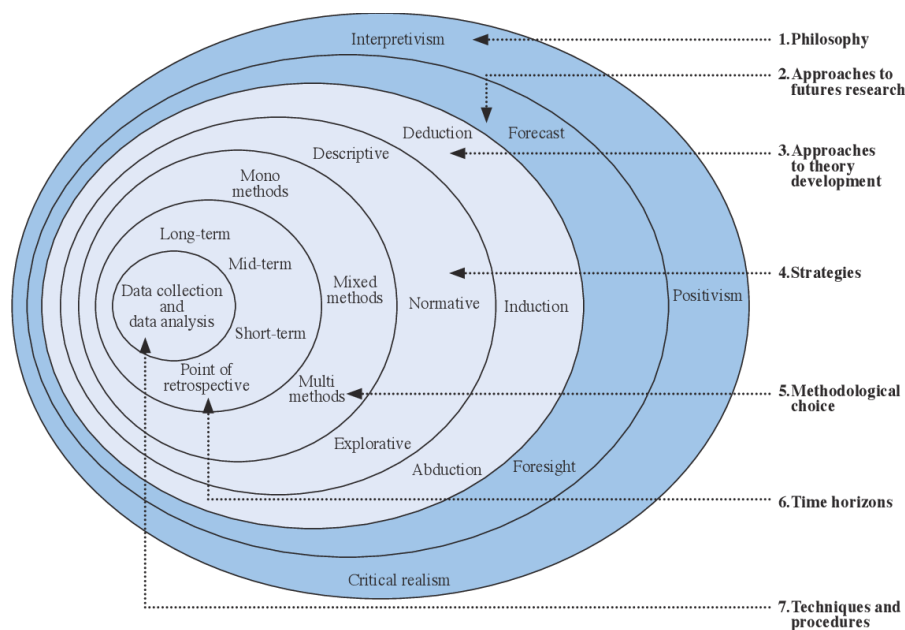


Figure 1: Research onion for future studies (Melnikovas, 2018)

This research uses an interpretative research philosophy as its foundation. Interpretivism is founded on the premise that the future is inherently unpredictable because the future is characterised by a random, chaotic, and unpredictable chain of events, making it impossible to control or predict. However, the interpretative philosophy suggests that knowledge about the future can be obtained through an intuitive approach. This philosophy is best suited for studies that seek to construct future narratives and create several scenarios of the future to provide an insight (Alharahsheh & Pius, 2020).

The goal of this research is to examine the potential of ChatGPT in supporting scenario planning. The research approach utilised for this study is the foresight approach. Forecast differs from foresight in the fact that forecasting is primarily utilised in situations where tangible quantitative data is available and mathematical operations are used to discover the exact future events. Foresight is based on qualitative data and uses a mono-method approach to investigate a complex perspective of several futures (Kosow & Gassner, 2007).

The research will adopt a deductive research approach which is commonly utilised for the purpose of theory testing (Kuosa, 2011). One of the most important attributes of scenarios is their hypothetical nature, stemming from the inherent uncertainty of the future. Consequently, none of the scenarios developed will unfold precisely as envisioned. There will always be unexpected events and moreover

it is impossible to accurately predict the exact combination of events. However, the existence of this limit does not hinder the important role of scenarios in forecasting and foresight (Puglisi, 2001). Scenarios are nothing else than a vivid image of a hypothetical future and are frequently used in a deductive research approach, which follows a trajectory from general to specific and tests a hypothesis in practice (Casula et al., 2021).

The exploratory action research method was selected for this research. The explorative research strategy was selected because the study is aimed at looking at ongoing trends and exploring their impact on the future by creating multiple futures and looking at the exploration of possible developments (Puglisi, 2001). Action research is a scientific method designed to promote practical solutions to real-world organisational problems by a collaboration of researchers and practitioners in the research process (Kemmis et al., 2014). Action research is an iterative process consisting of five phases: diagnosing, action planning, action taking, evaluating, and specifying learning (Davison et al., 2012). Action research is about working towards practical outcomes and creating new theories to test them in action (Reason & Bradbury, 2008). In this research, action research is used to design an improved technology forecasting method with the support of ChatGPT and validate this theory in action.

To ensure the validity of the research this study employs the five principles of Canonical Action Research (Davison et al., 2004). The first principle of Canonical Action research is the Client-Researcher Agreement. The collaboration of this research between the researcher and the Digital advisory team of KPMG offers the possibility for the client to be involved during the whole process and leads through an understanding of the cyclical approach of Canonical action research as well as providing the possibility to make frequent observations. The second principle is the Cyclical Process Model. Throughout the study, the action research cycle: diagnosing, action planning, action taking, evaluating, and specifying learning was used, adhering to the second principle. The third principle is the Principle of Theory. The theoretical ambition is to design an improved technology forecasting method with the support of ChatGPT. The fourth principle is about Change Through Action. The improved method has been executed multiple times in practice at KPMG and been evaluated through participants' feedback using questionnaires. The fifth principle is Learning through Reflection. In the last stage of the workshop the participants are asked to fill in a questionnaire to reflect on the workshop structure, and on the used forecasting methods.

A comprehensive review conducted by Petropoulos et al. (2022) provides an overview of different models and methods, as well as their applications in various real-life contexts. These methods can be broadly categorised into two main categories: quantitative and qualitative (Lee et al., 2008). In this research only qualitative data is gathered which leads to a mono-methodology. In order to limit the potential outcomes in scenario planning and taking into account that predicting beyond a ten-year timeframe is considerably challenging, the scope of this research is focused on the short term. The designed workshop will be executed with the objective to examine barriers and benefits of using ChatGPT as support in scenario planning.

3.2 Case selection

The research was conducted in collaboration with KPMG Netherlands, a globally renowned professional services firm that offers a wide range of audit, tax, and advisory services to clients across various industries. Specifically, the collaboration was with the Digital Advisory department, focusing on the domain of Digital Transformation. The research started in February 2022, involving semi-structured interviews and informative discussions conducted within KPMG's Digital Transformation team. Additionally, the workshops were held at KPMG, and the workshops' participants were from various teams within the Digital Advisory department within KPMG. The relevance for the organisation is that the Digital Advisory department can benefit from an improved technology forecasting method. By working closely with KPMG, the research aimed to leverage their expertise and industry insights, specifically in the context of technology forecasting and the implications for the future.

3.3 Data collection and Data sources

This research employs various data collection techniques. Firstly, the study will gather information through semi-structured interviews with industry experts to gain insights into their current technology forecasting methods. After the initial data collection, additional information will be gathered through observations conducted by observers during the designed workshop, which will be held three times. The observer is primarily focused on the participants' attitudes and their involvement in the workshop. Furthermore, the prompts utilised by the participants while engaging with ChatGPT during the workshop were requested and collected. The last data source consisted of a questionnaire containing open-ended questions and statements about the designed workshop. In the final stage of the workshop the participants were asked to fill in a questionnaire that inquired about their perceptions of the workshops' structure and their overall experiences. Additionally, specific inquiries were made about the barriers and benefits of the used technology forecasting method and whether the participants would consider using this method more frequently within the organisation. The questionnaire also focused on the utilisation of ChatGPT, asking about the perceived benefits and drawbacks associated with its support during the workshop.

3.4 Research Design

The selected approach for this research is action research. Action research is a scientific approach that focusses on studying and resolving social or organisational issues by actively involving the actors directly experiencing the problems. Action research adopts a cyclical five-step process comprised of five phases: diagnosing, action planning, action taking, evaluating, and specifying learning (Susman & Evered, 1978). This approach is illustrated in Figure 2 and emphasises the collaboration between the researcher and the actors, as the actors who are being studied are actively participating in the research process, in contrast to traditional research where the actors are passive subjects. The goal of action research is to conduct research simultaneously with taking action, trying to make the action more effective while generating scientific knowledge (Coghlan & Brannick, 2005).

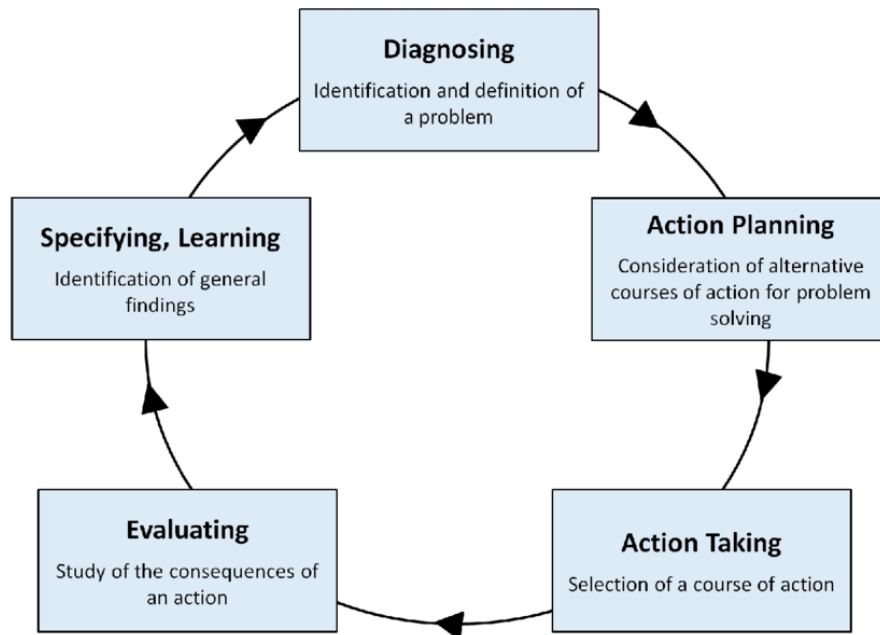


Figure 2: The cyclical process of action research (Susman & Evered, 1978)

3.4.1 Diagnosing

The diagnosing phase is the first stage in action research and involves identifying the primary problems behind the need for change. Diagnosing involves a self-interpretation of the complex organisational problem in a holistic fashion (Baskerville, 1999). The diagnosing phase leads to the development of theoretical assumptions, forming a hypothesis, to comprehend the organisations problem. Collaboration is fundamental during the diagnosing phase, where the action researcher actively involves relevant stakeholders in the process. This collaboration emphasises engagement with the organisation rather than the researcher acting as an isolated actor conducting the diagnoses separately from the team (Coghlan & Brannick, 2005).

In the context of KPMG, the diagnosing phase involved describing the current Technology Forecasting methods and pinpointing specific issues. This was achieved through semi-structured interviews with experts providing insights in their current forecasting methods as well as gathering perceived advantages and disadvantages of these methods.

3.4.2 Action Planning

This research developed a workshop that examined the potential aspects of how ChatGPT could support scenario planning as a technology forecasting method. When engaging in technology forecasting, one of the most significant challenges is to imagine the consequences of a new technological breakthrough due to the uncertain nature of the future. To address this challenge, Gordon et al. (2005) advocated the necessity of making uncertainty and underlying assumptions explicit while constructing the envisioned future landscape. Scenario planning is a valuable tool for addressing the challenges posed by uncertainty when envisioning the future landscape (Postma & Liebl, 2005). Scenario planning has proved its effectiveness in handling short-term disruptions, for example flooding or financial crises, as well as for long-term developments, such as climate change. Scenario planning helps in formulating robust and adaptable strategies by subjecting them to testing against various potential futures (Cordova-Pozo & Rouwette, 2023). As a well-known forecasting method, scenario planning plays a crucial role in improving preparedness in an ever-changing and uncertain future and it is one of the only technology forecasting methods that takes uncertainties into consideration. Schoemaker (1995) describes Scenario Planning as follows: 'In short, the technique is applicable to virtually any situation in which the decision maker would like to imagine how the future might unfold' (Schoemaker, 1995).

Gordon et al. (2005) also highlighted the potential of new technologies in enhancing and refining futures research methods. One of the most prominent emerging technologies is ChatGPT (Mitchell, 2023). Various applications of ChatGPT are already being explored, ranging from assisting with scientific writing (Salvagno et al., 2023) to aiding in writing patient clinic letters (Ali et al., 2023). Another potential application of ChatGPT lies in data processing, predictive modelling, and forecasting. This predictive capability looks promising for the research of futures studies. With providing support to researchers in tasks like data extraction, interpretation and uncovering hidden insights, generate hypotheses and fostering creativity, ChatGPT could have the potential to significantly improve the efficiency and effectiveness of research (Ray, 2023). For this research the free version of ChatGPT with version 3.5 was used. The designed workshop will be executed with the objective to examine barriers and benefits of using ChatGPT as support in scenario planning.

3.4.3 Action Taking

In the action taking phase, the designed method from the action planning phase was executed and validated in a workshop. The workshop was executed three times with ChatGPT being used in various applications throughout the workshops. The workshop participants consisted of consultants working in KPMG's digital advisory department. During the workshop there was an observer present to observe both the facilitator and the participants. Observations were conducted on the facilitator to verify compliance with the designed workshop structure and the participants were observed to analyse their behaviour and attitude. Participant observation gives a reality of the workshop and creates unique understanding about the atmosphere during the workshop (Bernard, 2011).

At the final stage of the workshop, participants received a questionnaire to evaluate their workshop experience and on the workshop structure. The questionnaire featured a mix of open-ended questions and statements related to the workshop. There was a specific focus about their opinion of the utilisation of ChatGPT during the workshop, exploring the participants' experiences, and the perceived advantages and disadvantages of using ChatGPT. Additionally, participants were invited to express their opinions regarding the employed frameworks and methods during the workshop. The objective of the questionnaire was to elicit the participant's perspective of the workshop and to actively involve them in the action research process.

3.4.4 Evaluating

Upon completing the action taking step the results will be evaluated. This evaluation includes determining whether the original diagnoses was correct and of the actions taken helped in relieving the problems (Baskerville, 1999). In the context of this research the final results are the pre-workshop interviews, the workshop design, the observations made during the workshop and the questionnaire completed by the participants. The results are evaluated.

The evaluation step encompasses the specifying learning stage, which represents the final phase of action research and involves an assessment of the overall learning acquired throughout the research journey.

4. Action Research

This research follows the action research phases consisting of: Diagnosing, Action Planning, Action Taking, Evaluation and Specifying Learning (Susman & Evered, 1978). This chapter will provide a detailed analysis of the phases.

4.1 Diagnosing

The diagnosing phase was initiated through conducting two semi-structured interviews with experts within KPMG. The interviews took place in May of 2023 and focused on gaining insights into the current technology forecasting methods employed at KPMG. The interview questionnaire used for these interviews can be found in appendix A. Interviewee A, a manager from the digital strategy team with prior experience in scenario planning, and interviewee B, a consultant from the digital transformation team who manages the academic trend reports, were both interviewed. Additionally, numerous informative discussions were held with employees from the department concerning technological trends.

The existing situation of technology forecasting within the team was straightforward, they lacked a structured approach for technology forecasting. This can be identified as an issue within action research. It is imperative for a technological consultancy department to keep up with new technologies and explore potential opportunities arising from emerging technologies. Furthermore, the department understood the value of establishing a repeatable forecasting method to normalise the process of opportunity exploration and would like to engage in technology forecasting more often. Notably, Interviewee A expressed that for clients they created various relevant scenarios about the future. The scenarios are developed by analysing trends gathered from credible reports, such as those from Gartner, IDC, or Forrester. However, this approach is limited to client projects and is not used internally.

As KPMG is a company dedicated to continuous innovation and growth in the professional service industry, they understand the importance of exploring emerging technologies like Conversational AI. Recognising both the benefits and risks associated with conversational AI, KPMG has established four guidelines for its usage. Firstly, sensitive information should not be included in conversational AI prompts. Secondly, conversational AI should not be relied upon for critical decision-making. Thirdly, it is advised to critically assess the answers from conversational AI. Lastly, the significance of applying common sense during interactions with the technology is underscored. These guidelines are aimed at reducing risks for KPMG. To effectively integrate AI, a Task Force has been set up to develop a comprehensive strategy and develop a roadmap.

These guidelines enable the implementation of ChatGPT in the workshop. This feasibility arises from the workshop's focus on the generation of future scenarios. During the workshop we engage in an open brainstorming process without making critical decision. Additionally, sensitive information will not be utilised in the prompts and during a brainstorm we actively employ common sense.

4.2 Action Planning

In the action planning phase of the research, the primary objective was the creation of a workshop. The workshop was designed based on previously documented action research projects in relevant literature as well as examples of other described scenario planning workshops. Additionally, insights gained from interviews with experts helped with shaping the workshop's structure. The final designed workshop was a technology forecasting method that examines potential futures through the lens of a pre-determined technological trend. The workshop incorporates various applications of ChatGPT to investigate the effects of ChatGPT support on scenario planning and its influence on the participants' engagement.

The workshop design process commenced with an analysis of facilitator's guides from established scenario planning workshops, aimed at understanding the rationale behind certain choices of the workshop. Subsequently, relevant literature about the application of scenario planning as a technology forecasting method were reviewed. Using these two sources as input, a rough outline for the workshop was devised and further refined based on insights from interviews. While creating the workshop, various applications of ChatGPT in the workshop were explored. This meant striking a balance between ensuring the retention of the positive attributes inherent to scenario planning as a forecasting method, while simultaneously considering the potential opportunities that the support of ChatGPT as a technology could offer.

In total, three workshops were organised, each following the designed workshops process and with varying applications of ChatGPT. In the first workshop there was no involvement of ChatGPT, participants participated in the workshop without the support of ChatGPT. In the second workshop there was limited involvement of ChatGPT. During the second workshop, one participant was allowed to use ChatGPT as support. This participants was able to consult ChatGPT for additional insight in the identification of factors or the development of scenarios. The third workshop extended the involvement of ChatGPT, granting all participants access to ChatGPT to support in scenario planning. The participants were able to utilise ChatGPT to generate additional information and support them during the whole workshop. The multi-workshop setup allowed the comparison of the workshop's outcomes and conclusions. This facilitated in evaluating the impact of ChatGPT in supporting the process and outcomes of the scenario planning process.

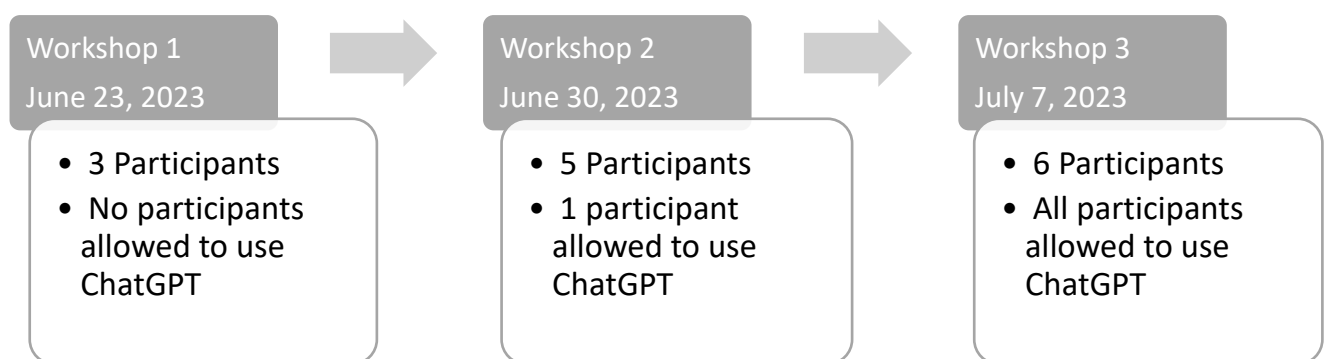


Figure 3: Workshop process overview

4.2.2 Workshop Design

The workshop was designed with the goal of being able to assess the barriers and benefits of using ChatGPT to support scenario planning as a technology forecasting method. To accomplish this, a series of three workshops will be conducted, each utilising ChatGPT to varying degrees in the context of scenario planning. The workshop will adopt scenario planning as the primary method, incorporating steps derived from the methodologies proposed by (Drew, 2006; Maack, 2001; Schoemaker, 1995; Van der Heijden, 2005)

The initial stage of the workshop is to present the selected trend to the participants. Following an understanding of the trends by the participants, the key question is introduced to define the scope of the workshop (Schoemaker, 1995). Formulating the research question in advance ensures a well-defined scope for the workshop and enables the repeatability of the workshop with the same objective. Given the broad nature of the key question, the subsequent step is to identify factors that influence the key question. Factors are certain aspects that directly impact the key question, the PESTLE-analysis serves as an appropriate tool for identifying factors. A PESTLE-analysis is a strategic tool used in the workshop to help identifying factors, PESTLE is an acronym for Political, Economic, Social, Technological, Legal, and Environmental. Each of these factors represents a different category of influences that can affect the technological trend. The PESTLE analysis helps with evaluate the impact that the factors might have on a trend or project and helps with organisations considering factors before starting a project (Rastogi & Trivedi, 2016).

The PESTLE-analysis generates an extensive list of factors that needs to be reduced for the subsequent stages of the workshop. For this purpose, of analysing and prioritising the factors, the impact-uncertainty matrix is a suitable tool. The impact-uncertainty matrix allows participants to prioritise the factors from the extensive list based on their respective impact and uncertainty levels, using a voting mechanism. With the voting mechanism, factors with high uncertainty and high impact can be extracted as these are considered the most relevant for scenario creation (Maack, 2001).

The output of the impact-uncertainty matrix serves as the foundation for advancing to the next stage of the workshop. Based on the impact-uncertainty matrix, participants are tasked with identifying the two most relevant factors and utilise them to construct a 2x2 matrix. Following this, participants will delve into the four distinct combinations resulting from the two key actors and build scenarios around them (Maack, 2001).

Van der Heijden states that a minimum of two scenarios should be developed to reflect the uncertainty of the future, while exceeding four scenarios is impractical and counterproductive. Furthermore, each scenario should be realistic and based on the selected critical driving factors. The scenarios need to address the key question posed at the start of the workshop and offer novel and innovative perspectives of the future (Van der Heijden, 2005). For scenario creation, the participants will be divided into two subgroups, each tasked with developing two scenarios, leading to a total of four scenarios. Every created scenario will inherently compass both risks and opportunities. The application of an impact-likelihood matrix can assist in identifying the most impactful scenario and help with developing the most effective contingency plan (Maack, 2001). Furthermore, the impact-likelihood matrix can indicate which scenario the participants consider having the highest likelihood and should be explored further in the subsequent stages of the workshop. Following the prioritisation of the scenarios, the workshop will provide an opportunity to devise practical steps and strategies to determine the most effective course of action if a scenario becomes reality. This will serve as a comprehensive response to the key question.

The workshop concludes with a questionnaire administered to the participants. The primary objective of the questionnaire is to solicit feedback on the conducted workshop. The participant will respond to questions concerning the workshop's structure and whether they would consider repeating the workshop within the organisation. Moreover, the questionnaire will contain specific question regarding the implementation of ChatGPT within the workshop, the perceived advantages, and disadvantages of ChatGPT as support during the workshop, and the participant's opinion on the use of ChatGPT during the workshop.

The workshop will be conducted on premise, as it positively influences participants engagement and interaction. Moreover, the workshop sessions will be recorded to extract literal quotes and to ensure an accurate representation of the workshop's atmosphere in conjunction with the observational data. Additionally, an observer will be present during the workshops. The observer's primary objective is to analyse the participant's attitudes and presence during the workshop, thereby contributing insights to the workshop's overall ambiance. Before the start of each workshop, the observer had the opportunity to interact with the facilitator and inquire about the research objectives and their designated responsibilities. Additionally, the observer received a detailed briefing in advance, this briefing can be found in appendix B1.

4.2.3 Workshop overview

The workshop is designed based on a combination of the steps described in (Drew, 2006; Maack, 2001; Schoemaker, 1995; Van der Heijden, 2005). The timeline of the workshop is presented in Table 1. Subsequently, each step will be described in detail, along with the rationale for the selected choices.

Time	Activity	Duration
13:30 – 14:00	Preparations	30 min
14:00 – 14:05	Walk in & introduction workshop	5 min
14:05 – 14:10	Present workshop agenda	5 min
14:10 – 14:15	Communicate the goal of the workshop	5 min
14:15 – 14:20	Present key question	5 min
14:20 – 14:35	Identify driving factors	15 min
14:35 – 14:45	Discuss driving factors	10 min
14:45 – 14:55	Prioritise driving factors	10 min
14:55 – 15:05	Break	10 min
15:05 – 15:15	Select two critical driving factors	10 min
15:15 – 15:20	Create 2x2 matrix	5 min
15:20 – 15:40	Creating the scenarios	20 min
15:40 – 15:50	Discuss scenarios	10 min
15:50 – 15:55	Individually rank scenarios	5 min
15:55 – 16:05	Final impact-likelihood matrix	10 min
16:05 – 16:15	Answer key question	10 min
16:15 – 16:25	Complete questionnaire	10 min
16:25 – 16:30	Thank you & Closing	5 min

Table 1: Workshop Timetable

Preparation

To ensure a successful and productive workshop, attention should be paid to the preparation of the workshop's venue. This includes choosing a venue free from distractions as well as considering factors such as size, layout, and accessibility (Candelo R. et al., 2003). Additionally, organising the seating arrangement in a manner that fosters interaction and engagement among the participants is beneficial for the workshop. Lastly, to prepare the frameworks on the flipboard in advance and setting up the PowerPoint are advantageous measures.

Walk in & introduction workshop

Once all participants are present, it would be beneficial for the participants to be acquainted with the other workshop participants. For this reason, the workshop will begin with a brief round introducing the participants and the facilitator.

Prior to the workshop the participants received an invitation mail which introduced the research and the workshop. During the introduction of the workshop this will be summarised and repeated and the participants have the opportunity to ask clarifying questions. The invitation also included a briefing on the use of ChatGPT during the workshop this briefing can be found in appendix [B2](#).

Present workshop agenda

In order to engage the participants and familiarise them with the upcoming workshop stages, an overview of the workshop agenda will be provided. This provides the participants with a comprehensive view of the workshops activities and facilitates their ability to contemplate the overall objective.

Communicate the goal of the workshop

During this stage, the aim and scope of the workshop will be communicated to the participants. This research aims to explore the application of ChatGPT in scenario planning and examine the barriers and benefits associated with its use. The primary goal of the workshop for the participants is to conduct an in-depth exploration of the selected technology trend using the scenario planning method. The exploration aims to assess the feasibility of investing in the mentioned trend while evaluating the barriers and benefits of the created scenario planning method supported by ChatGPT for technology forecasting.

Present key question

To set a scope for the scenario planning workshop, a key question is defined in advance. The question was formulated through desk research, an examination of previous action research projects and consultations with experts in the subject. The pre-formulation of a key questions offers the advantage of saving time during the workshop, as participants do not have to generate a question during the workshop. Additionally, this approach offers the advantage of ensuring uniformity in successive workshops, enabling the results to be compared. Furthermore, pre-formulating the questions ensures the workshop's quality, as the key question adheres to the SMART principles: Specific, Measurable, Acceptable, Realistic, and Time-Bound.

The key question formulated is: *"Should KPMG invest in Generative AI to better advise their customers and streamline their workflow within the next 3 years?"*

Identify driving factors

The identification of factors is accomplished using the PESTLE-analysis (Political, Economical, Social, Technological, Legal, Environmental) framework. The PESTLE-analysis helps with evaluate the impact that the factors might have on a trend or project and helps with organisations considering factors before starting a project (Rastogi & Trivedi, 2016). In this workshop the framework assists participants in both the generating and structuring the factors that influence Generative AI and impact the decision to invest.

The phase starts with an introduction of the categories of the PESTLE-analysis and an instruction to the participants to keep the following guiding question in mind while identifying factors: *“What are the primary factors or considerations that influence the potential benefits and risks associated with Generative AI and the decision to invest?”*

Subsequently, the participants will individually identify factors. The participants are encouraged to provide a brief description of the identified factor rather than using a single word and, to use a separate sticky note for each factor

Discuss driving factors

Following the individual identification of the driving factors by the participants, the next step is to discuss the factors. One by one, the participants come forward and provide an explanation in one sentence of their identified factors, placing them in the appropriate category of the PESTLE-analysis. The other participants are encouraged to ask clarifying question. In cases where a factor has already been listed on the board, the factors are grouped together.

Prioritise driving factors

The following step led to a comprehensive list of relevant factors. Following this, the prioritisation of this long list of key factors becomes essential. The impact-uncertainty matrix presents a straightforward method for consolidating key factors in a clear and comprehensible format (Maack, 2001). An efficient way to determine prioritisation is through a voting process. The participants will vote on the long list of factors based on the impact and uncertainty. Every participant received 10 dot stickers per person. This set of 10 stickers was comprised of 5 red stickers denoting the factor’s impact and 5 blue stickers signifying the factor’s uncertainty. The participants individually voted on the factors they deemed to have the highest impact or uncertainty. Throughout the voting process, the participants were instructed to keep the following question in mind: *“Which factors have the greatest impact on the success and adaptation of Generative AI and which factors are the most uncertain or the most unpredictable on the success and adoption of Generative AI?”*

Break

When the participants are out of the room, the facilitator constructs the impact-uncertainty matrix based on the participants' votes obtained in the aforementioned voting process. This matrix, illustrated in Figure 4, serves as a tool for identifying critical scenario drivers and critical planning issues. Factors positioned in these categories significantly influence the scenario creation process (Maack, 2001). The matrix categorises factors based on a straightforward "High-Medium-Low" rating system. The number of votes required to assign a high, medium, or low rating will be determined based on the total number

<i>Degree of uncertainty</i>			<i>Level of impact</i>
Low	Medium	High	
Critical planning issues Highly relevant and fairly predictable (can often be based on existing projections). Should be taken into account in <i>all</i> scenarios.	Important scenario drivers Extremely important and fairly certain. Should be used to differentiate scenarios. Should be based on projections but potential discontinuities also should be investigated.	Critical scenario drivers Factors and forces essential for success and highly unpredictable. Should be used to differentiate scenario plots and trigger exit strategies.	
Important planning issues Relevant and very predictable. Should be figured into most scenarios.	Important planning issues Relevant and somewhat predictable. Should be present in most scenarios.	Important scenario drivers Relevant issues that are highly uncertain. Plausible, significant shifts in these forces should be used to differentiate scenario plots.	
Monitorable issues Related to the decision focus but not critical. Should be compared to projections as scenario is implemented.	Monitorable issues Related but not crucial to the decision focus. Should be monitored for unexpected changes.	Issues to monitor and reassess impact Highly unpredictable forces that do not have an immediate impact on the decision focus. Should be closely monitored.	Low

Figure 4: Impact-uncertainty matrix (Maack, 2001)

of participants.

Select two critical driving factors

Based on the impact-uncertainty matrix, the group needs to identify the two most relevant factors. Initially they should prioritise factors exhibiting high impact and high uncertainty, critical scenario drivers, or factors with high impact and low uncertainty, Critical planning issues, as highlighted by Maack (2001) as the most critical for scenario development. The two selected factors will serve as the axes for the subsequent matrix.

Create 2x2 matrix

The two selected factors will be discussed in this stage, where the extremes of the factors must be identified. Deliberating on the extremes fosters a shared understanding of the factors among the participants (Van der Heijden, 2005). Based on the four permutations of the factors the scenario will be created.

Creating the scenarios

Based on the 2x2 matrix, shown in Figure 5, the participants will construct the four different scenarios. The scenarios will differ from each other due to the distinct separation facilitated by the two selected factors. The scenarios should cover a wide range of future possibilities and highlight competing perspectives, while focusing on interlinkages and the internal logic within each future (Schoemaker, 1995).

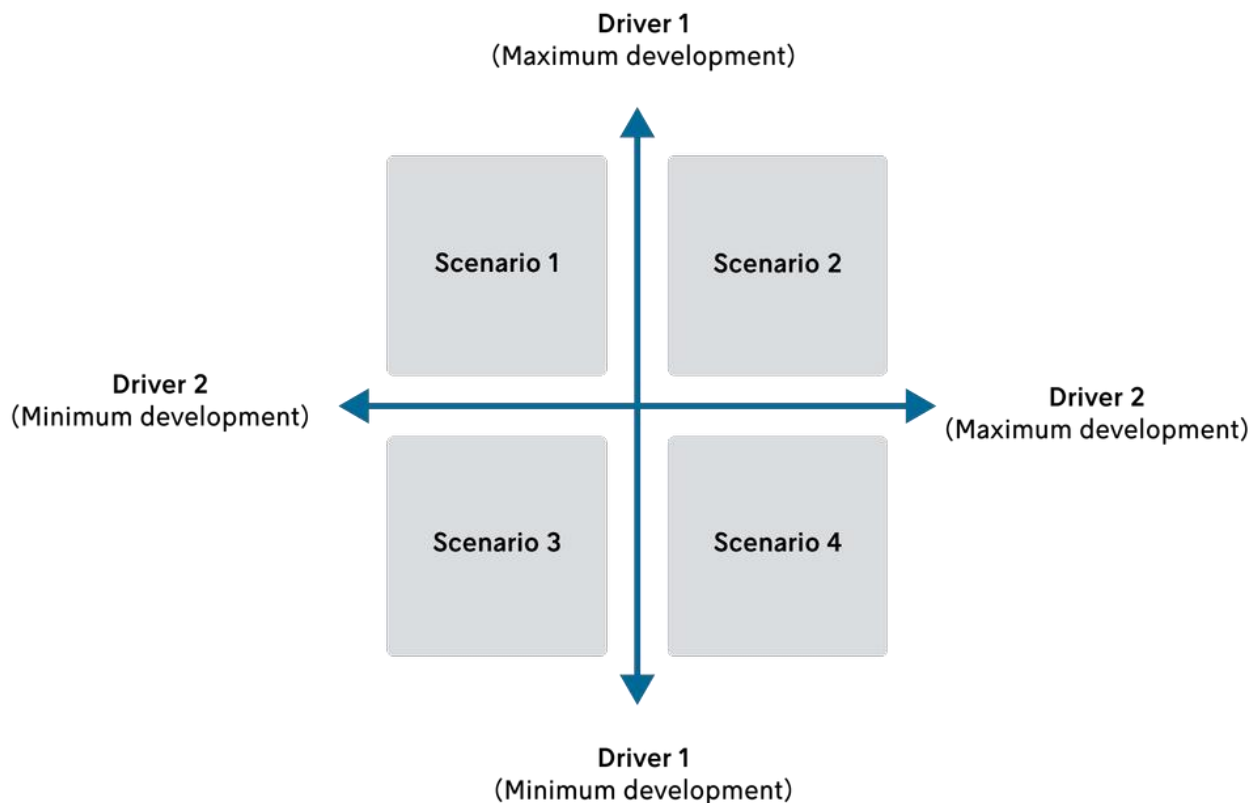


Figure 5: 2x2 matrix

The participants were instructed to create a vivid image of the future for each scenario, paying specific attention to the key issues and the assumptions made. As well as looking at other relevant factors such as: stakeholders, risks and opportunities, implications and consequences and potential triggers. Furthermore, the scenarios should be: plausible, distinctive, consistent, relevant, creative, and challenging according to Maack (2001).

The participants were divided into two subgroups, assigned with task of creating the opposing scenarios from the matrix. Specifically, one subgroup was responsible for creating scenarios 1 and 4, whereas the other subgroup was tasked with creating scenarios 2 and 3. The scenarios did not need to be flawless, and the emphasis lay on a free brainstorm with the scenario boundaries determined by the axes of the matrix. A template was provided to the participants to document the scenarios. This template can be found in appendix [B3](#).

Discuss scenarios

The participants are asked to present the created scenarios to the other participants. The remaining participants have the opportunity to ask questions for clarification and engage in small discussions about the presented scenarios. During the explanation of the scenarios the facilitator write down the title of the scenarios.

Individually rank scenarios

The participants are provided with a paper template containing an impact-likelihood matrix, which can be found in appendix [B4](#). Each participant is required to individually complete this template and rank the created scenarios based on their impact and likelihood.

Final impact-likelihood matrix

After the individual completion of the impact-likelihood matrices by the participants, the objective is to collectively construct a final impact-likelihood matrix incorporating input from all individual matrices. A large impact-likelihood matrix is presented on the flipboard, and one participant is asked where they ranked the first scenario. Subsequently, other participants are given room to respond on the initial placement and engage in a discussion. After each participant has been given the opportunity to express their opinion, a group consensus should be reached on where the scenario ranks. These steps are repeated for the remaining three scenarios. Ultimately a final impact-likelihood matrix is created, reflecting a consensus among all participant regarding the positioning of the scenarios.

Answer key question

Based on the impact-likelihood matrix, the scenario exhibiting the highest impact and likelihood is chosen as the one to address the key question. With this scenario in mind, a re-examination of the key question is conducted *“Should KPMG invest in Generative AI to better advise their customers and streamline their workflow within the next 3 years?”* Subsequently, the participants can brainstorm possible next steps and select the optimal strategy in case the scenario becomes a reality.

Complete questionnaire

The workshop concludes with a questionnaire administered to the participants. The primary objective of the questionnaire is to solicit feedback on the conducted workshop. The participant will respond to questions concerning the workshop’s structure and whether they would consider repeating the workshop within the organisation. Moreover, the questionnaire will contain specific question regarding the implementation of ChatGPT within the workshop, the perceived advantages, and disadvantages of ChatGPT as support during the workshop, and the participant’s opinion on the use of ChatGPT during the workshop.

Thank you & Closing

The workshop concludes and the participants are thanked for their time, attendance, and active engagement during the workshop.

4.3 Action taking

During the action taking phase, the designed method was executed three times through a workshop with different applications of ChatGPT during each session. The workshops participants were from KPMG's Digital Advisory department. The workshops were held on Friday, June 23, Friday, June 30 and Friday, July 7 all in 2023. All workshops were held in-person at KPMG. Each workshop had a facilitator, observer and was attended by varying numbers of participants. The following sections provide a detailed description of each workshop, including its results and an evaluation.

Workshop 1 (23-06-2023)

Workshop Execution

This section describes the executed workshop at KPMG on 23 June 2023, including a comprehensive overview of the events that occurred. The workshop activities and accompanying timeslots are displayed in Table 2, the workshops observations log can be found in appendix C6.

Time	Activity	Duration
13:30 – 14:00	Preparations	30 min
14:00 – 14:05	Walk in & introduction workshop & present agenda	5 min
14:05 – 14:10	Communicate the goal of the workshop	5 min
14:10 – 14:15	Present key question	5 min
14:15 – 14:30	Identify driving factors	15 min
14:30 – 14:45	Discuss driving factors	15 min
14:45 – 14:55	Prioritise driving factors	10 min
14:55 – 15:00	Break	5 min
15:00 – 15:05	Select two critical driving factors	5 min
15:05 – 15:10	Create 2x2 matrix	5 min
15:10 – 15:45	Creating the scenarios	35 min
-	Discuss scenarios	0 min
15:45 – 15:50	Individually rank scenarios	5 min
15:50 – 15:55	Final impact-likelihood matrix	5 min
15:55 – 16:05	Answer key question	10 min
16:05 – 16:20	Complete questionnaire	15 min
16:20 – 16:25	Thank you & Closing	5 min

Table 2: Timetable workshop 1 (23-06-2023)

Below, a detailed elaboration of all the workshop activities, including their corresponding timeslots, is provided.

○ 13:30 – 14:00 Preparations

In the workshop preparation phase, a detailed step-by-step timeline was formulated, incorporating specific frameworks that would be utilised during various workshop activities. On a flip over, the facilitator drew the general outlines of these framework prior to the workshop. The prepared frameworks were: PESTLE analysis for identifying driving factors, impact-uncertainty matrix for prioritising driving factors, 2x2 matrix with critical driving factors on the axes and an impact-likelihood matrix to plot the scenarios. Sticky notes and writing material were distributed to the participants at the beginning of the workshop

- 14:00 – 14:05 Walk in & introduction workshop & present agenda

The fourth participant withdrew just before the start of the workshop, as a result the workshop only had three participants. Between 14:00 and 14:05 the three participants entered one by one, during which the observer and facilitator introduced themselves to the participants. As all the participants already knew each other, there was no need for the individual self-introductions. This allowed the workshop to proceed faster than expected to the workshop introduction and presentation of the agenda.

The participants were still finishing up some work during the workshop introduction and the presentation of the agenda. After the facilitator specifically asked if they agreed with the stated timeline, two participants nodded in agreement.

- 14:05 – 14:10 Communicate the goal of the workshop

The communication of the workshop's goal started 5 minutes ahead of schedule. The goal of the workshop was to utilise scenario planning to examine the potential impact of Generative AI on KPMG's work and explore how it could be utilised effectively. The trend of Generative AI was selected due to being widely discussed within the organisation and there is a lot of uncertainty surrounding the topic. Following the explanation of the goal of the workshop, a brief explanation regarding the concept and origin of Generative AI was provided, highlighting the key players such as ChatGPT and Midjourney, and discussing potential advantages and risks associated with the adoption of Generative AI.

The participants had no questions about the goal of the workshop. Participant 3 mentioned that he had a lot of prior experience working with scenario planning and was looking forward to the workshop.

- 14:10 – 14:15 Present key question

In order to set a scope for the g workshop, a key question was formulated beforehand. Rather than relying on participants brainstorming and discussions to generate a key question, the facilitator pre-emptively devised the question. The question was crafted based on thorough desk research, which is described in the previous section, with a focus on relevant technological trends within digital service firm, and consultation with experts. The initial formulation of the key question had several advantages. Firstly, it contributed to time efficiency during the workshop, leading to a shorter overall duration allowing for the involvement of more participant. Additionally, the pre-formulation of the questions also ensures that. The key question presented it the workshop was: *"Should KPMG invest in Generative AI to better advise their customers and streamline their workflow within the next 3 years?"*

As a reaction to hearing the key question, Participant 1 remarked that everyone already uses Generative AI in their day-to-day work, thus being curious about the workshop's outcomes. No further inquiries were made by the participants and the key question appeared to be clear based on the participants' body language.

- 14:15 – 14:30 Identify driving factors

Still 5 minutes ahead of schedule this activity started at 14:15. The workshop uses, the PESTLE-analysis (Political, Economical, Social, Technological, Legal, Environmental) framework to identify the key driving factors. This framework provided guidance for participants, enabling them to identify the key driving factors influencing Generative AI and their potential impact on KPMG's investment decision. The facilitator provided an overview of the assignment and delivered a concise explanation of the PESTLE analysis framework. The facilitator asked the participants to keep the following question in mind when thinking about driving factors: *"What are the primary factors or considerations that impact the potential benefits and risk associated with Generative AI and the decision to invest?"* Following that, the participants were informed about the designated time for the assignment and instructed to write down one factor per sticky note and categorise the factor within one of the six categories of the PESTLE analysis, and preferably provide a more elaborate description for each factor instead of using one word.

Participant 1 sought clarification about this question by asking whether it should focus on what would impact Generative AI or what could impact KPMG. The response from the facilitator clarified that the question concerned the effect on Generative AI. Participants 1 and 3 immediately began the process of identifying factors while Participant 2 appeared to have difficulty in generating factors. After struggling for a minute, Participant 2 raised a question about the possibility of formulating factors in the form of questions. The facilitator gave an example illustrating how the participant could transform a factor consisting of a question into a concrete factor, Participant 2 understood the example and proceeded with the exercise to identify factors. During the process of identifying factors, some participants occasionally vocalised their thoughts or sought assistance when they encountered difficulty in recalling specific terms. In response, the facilitator chose not to intervene unless the participants started to really brainstorm together. The participants expressed that they had a hard time to come up with factors in the Environmental part of the PESTLE-analysis. During an intervention the facilitator emphasised the importance of individually generating the factors and highlighted that there would be an opportunity for discussion at a later stage.

The participants completed the task at different times, with some occasionally resorting to their phone as a distraction or sharing anecdotes related to certain factors. At one point during the activity, the participants began placing the factors on the flip-board containing the outlines of the PESTLE-analysis. Once all the participants indicated that they were finished with their tasks, a total of 25 factors were displayed on the sticky notes. This resulted in the following PESTLE-analysis shown in Figure 6 with the original picture included in appendix [C1](#).

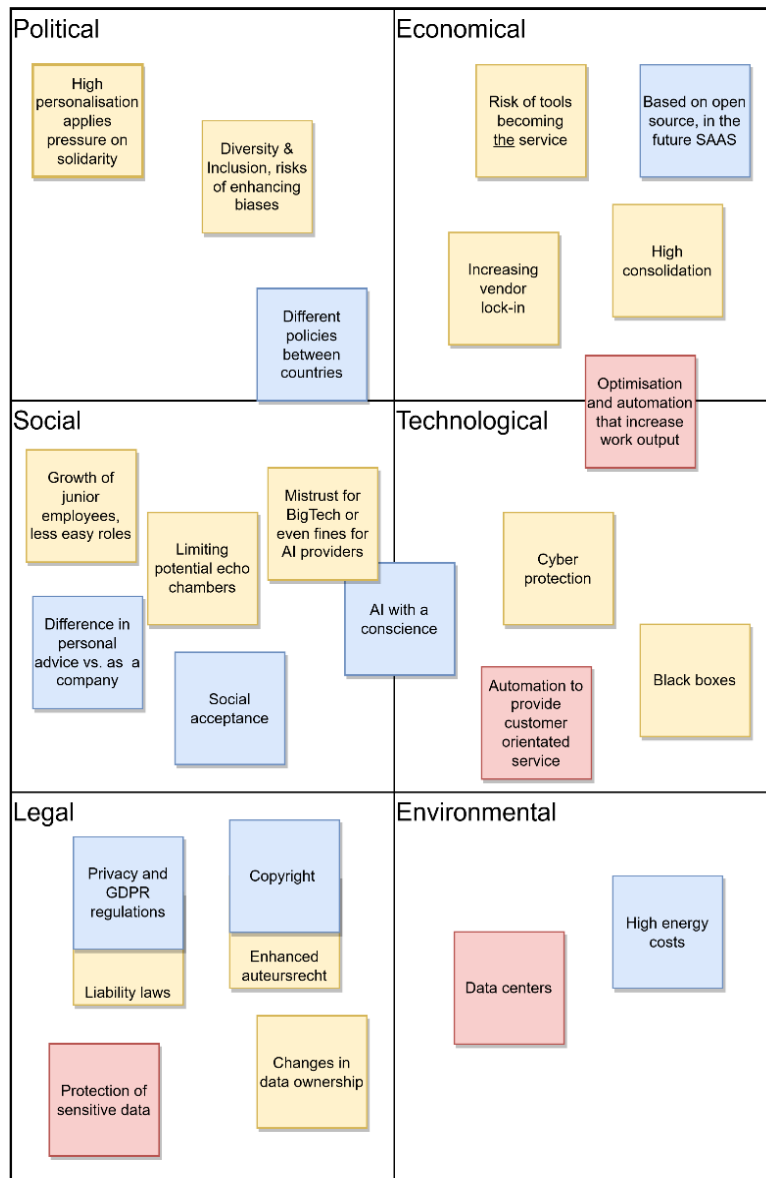


Figure 6: PESTLE-analysis workshop 1 (23-06-2023)

14:30 – 14:45 Discuss driving factors

Upon completing the identification of the factors, the participants already affixed the post-it notes to the flip over in the categories of the PESTLE-analysis. Due to the limited number of participants, it was decided to gather in front of the flip over. The factors were systematically discussed for each category of the analysis. The goal of the participants was to explain their written factor within one sentence to the other participants, which occasionally lead to a brief discussion or a clarifying question. For every category a different participant started explaining their factors. Although no exact duplicate factors were encountered, noticeable similarities were identified among certain factors. Eventually, some factors had the same goal and were merged before going to the next stage.

While explaining the factors, it was observed that the participants had difficulty formulating a factor concisely and that their explanations sometimes deviated from the written description on the note. By using anecdotes and examples, the participants ultimately had a shared understanding of the intended meaning of each factor.

○ 14:45 – 14:55 Prioritise driving factors

At the beginning of the stage, each participant was given ten stickers, consisting of five blue and five red stickers. The red stickers indicated the impact of a factor, and the blue stickers represented the uncertainty of a factor. The participants had the opportunity to individually vote on which factors they believed had the highest impact or uncertainty. A participant voted by placing a sticker with the corresponding colour on a sticky note in the PESTLE-analysis framework. Prior to the voting process, the facilitator explained the subsequent steps concerning the factors that received at least one sticker. Namely, that these factors would be included in the impact-uncertainty matrix, which would be created based on the outcome of the dot voting process. Every participant voted individually on the factors on the board, resulting in the scheme shown in Figure 7.

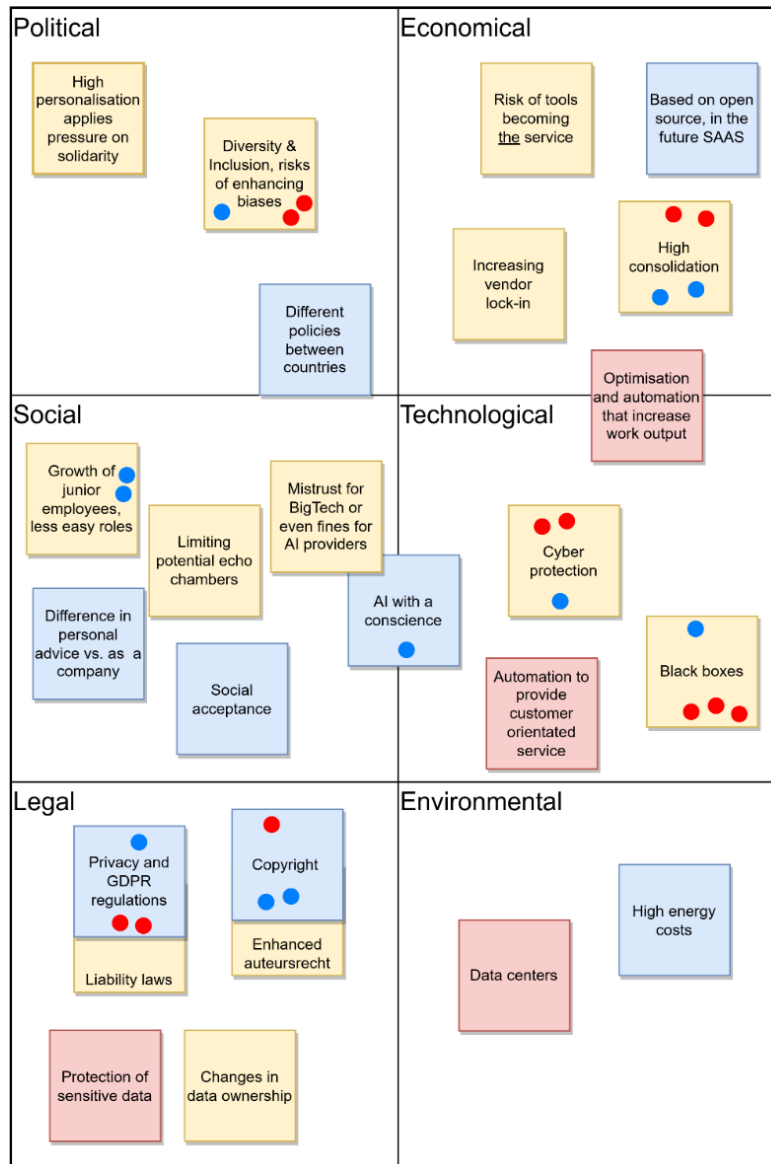


Figure 7: Prioritised factors workshop 1 (23-06-2023)

Following the distribution of the stickers, Participant 1 inquired about the concept of “impact”, seeking clarification on whether it referred to positively impacting Generative AI or a more general sense of impact. The facilitator responded by indicating the broader understanding of impact was intended. Subsequently, Participant 1 requested further clarification regarding “uncertainty” and its intended

meaning. After the facilitator provided an explanation using an example, Participant 1 indicated that he understood the goal of the exercise. During the conversation between participant 1 and the facilitator the other participants had already started casting their votes.

From the start of the voting process, the participants expressed that they did not expect to use all 10 stickers. In the end, 12 red stickers and 11 blue stickers were placed. This indicates that not all participants used the available 10 stickers. Participants explained that they only placed stickers on factors where they were confident in either the impact or the uncertainty of that factor, leading them to not use all 10 stickers.

- 14:55 – 15:00 Break

During the break, all the participants remained seated in the room, leading the facilitator to propose a shortened break of 5 minutes, to which all the participants agreed.

The facilitator filled in the impact-uncertainty matrix on the flip-board, using the votes cast by the participants in the previous step. The impact-uncertainty matrix is a framework that aims to identify critical scenario factors. Critical factors demonstrate a high level of impact and a high level of uncertainty and greatly influence the feasibility and practicability of the created scenarios (Maack, 2001).

- 15:00 – 15:05 Select two critical driving factors

As the participants remained in the room during the break, they witnessed the process of completing the impact-uncertainty matrix. Prior to determining the two critical driving factors, the facilitator provided an overview of the steps taken to complete the impact-uncertainty matrix.

Only factors that received at least one vote during the dot voting process, either denoting the impact or the uncertainty, were included in the matrix. This approach was used to manage time constraints and preserve the matrix's clarity. A factor that received zero votes was positioned at the lower end, indicating a low level, while a factors with one vote fell between low and medium. A factor receiving two votes was situated between medium and high and a factor with three votes was placed at the high end. The created impact-uncertainty matrix is depicted in Figure 8 with the original created matrix illustrated appendix C2. Factors that did not receive any votes are not shown in the matrix but are in the lower-left corner of the matrix, indicating both a low impact and low uncertainty according to the participants. Factors that received the same number of votes were grouped together.

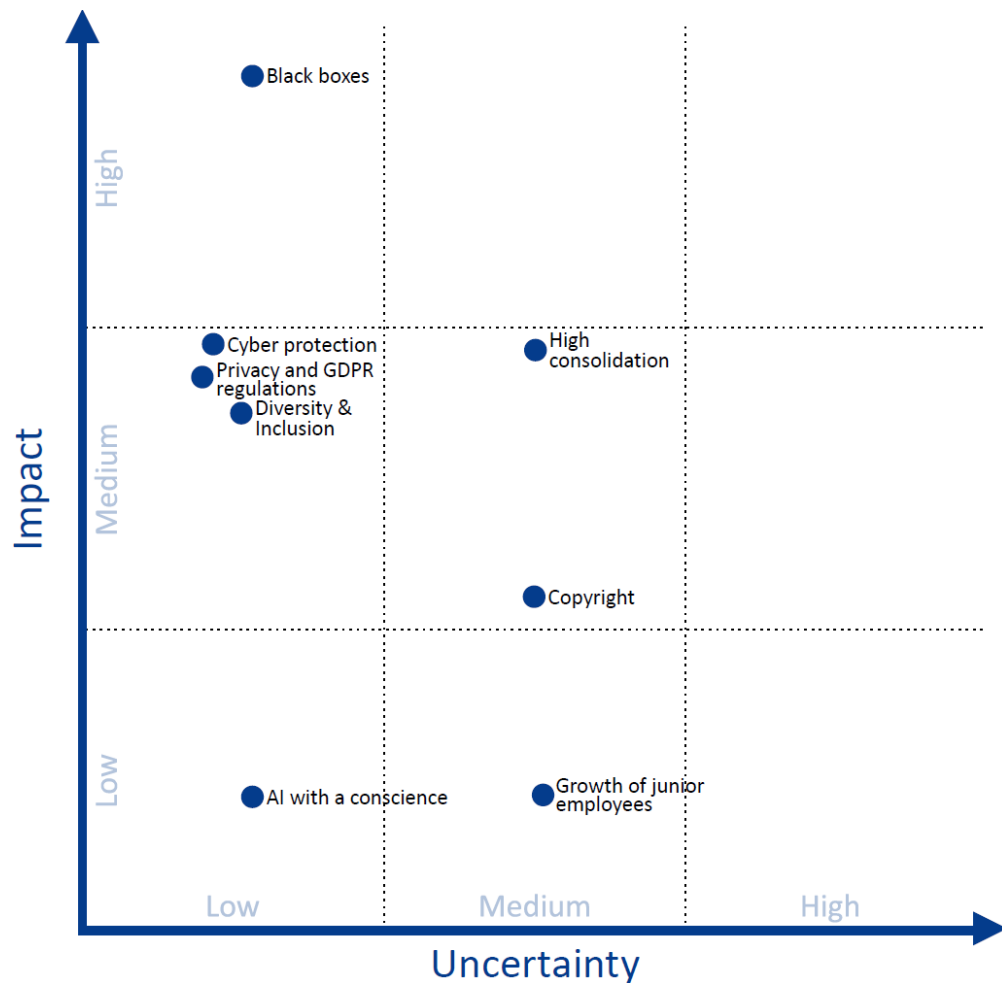


Figure 8: Impact-uncertainty matrix workshop 1 (23-06-2023)

Following the dot voting process, the impact-uncertainty matrix contained no factors displayed both high uncertainty and high impact. One factor, Black boxes, had high impact and low uncertainty, locating the factor in the critical planning issues domain (Maack, 2001). Having the highest impact, the factor Black boxes was unanimously chosen by the participants to be on one of the axes. Subsequently a brief discussion took place among the participants regarding the other factor. In the end the second factor was determined based on receiving the highest number of total votes and its relevance according to the participants. In the end the participants agreed on the selected factors which consisted of “Black Box” and “High consolidation”.

- 15:05 – 15:10 Create 2x2 matrix

After selecting the two factors that would form the axes, the extremities of the axes had to be determined for the next stage. For the factor “Black box” the axes were swiftly established, ranging from complete transparency to complete black box. Complete transparency referred to having a comprehensive understanding of the techniques and steps behind Generative AI, enabling informed decision making with support from Generative AI. On the other hand, complete black box denoted a condition of uncertainty where the steps were unknown, making the intermediate processes invisible yet being able to utilise the outputs. Determining the extremities for the second factor, “High Consolidation”, proved more challenging. Participant 3 had a clear conception of the meaning of the factor while Participants 1 and 2 initially were confused. After participant 3 illustrated his conception to the other participant through an example, he was able to bring the other participants on board. This led to the extremities of the second factor being high fragmentation vs high consolidation. High consolidation referred to a market characterised by a limited number of dominant players being able to effectively utilise Generative AI. Conversely, High fragmentation denoted a fragmented market with numerous small companies emerging due to their use of Generative AI as a supportive tool.

Based on these axes and extremities, a 2x2 matrix was constructed, with the horizontal axes representing High Fragmentation vs. High consolidation and the vertical axes representing Complete Black box vs. Complete transparency. This resulted in the following 2x2 matrix, illustrated in Figure 9 with the original picture in appendix [C3](#).

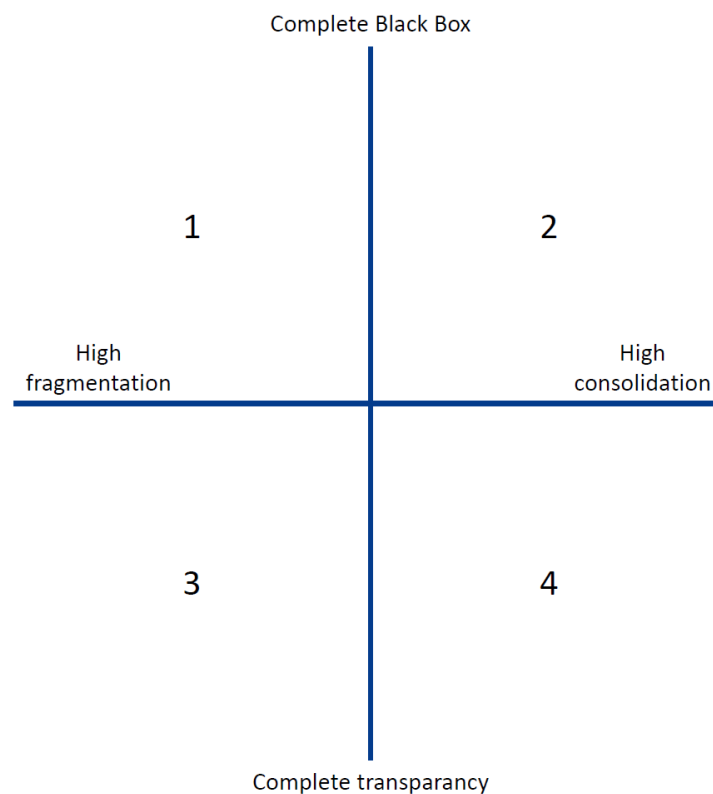


Figure 9: 2x2 matrix workshop 1 (23-06-2023)

Prior to advancing to the following stage, the facilitator clarified the meaning of the axes and how they served as the boundaries for creating scenarios in the exercise that would follow.

- 15:10 – 15:45 Creating the scenarios

At the start of the activity the participants were provided with a template for documenting the scenarios, this template can be found in appendix [B3](#).

The initial plan to divide the group into duos was not feasible due to the number of participants present and a last-minute no show. Therefore, the decision was made to collectively create the scenarios with the three participants as a group. The advantages of engaging in a discussion about the scenario as a group outweighed the possibility for excessive influence by a single individual. After one individual was made responsible for documenting the scenario, the group proceeded to create the scenario's, one at a time. They were instructed by the facilitator that each scenario should align within the quadrant and the established axes of the 2x2 matrix. Additionally, to create a scenario they were encouraged to create a vivid image of the future and consider key issues, underlying assumptions, as well as other factors such as risks and opportunities, stakeholders, potential triggers and implications and consequences.

Since the participants would collectively create the scenarios, the subsequent activity of discussing the scenarios became redundant. In addition, more time was granted than the initial allocated 20 minutes because instead of two scenarios, four scenarios had to be generated by the participants. The facilitator informed the participants that approximately 8 minutes would be dedicated to creating each scenario and that the facilitator would keep track of the time.

While writing the scenarios, the participants expressed difficulty in establishing a clear distinction between the scenarios due to the requirement of creating all four scenarios and the axis sometimes failed to provide a distinct boundary since they had to create the scenarios on both sides of the boundaries. As a result, several of the assumptions exhibited overlap between the scenarios. The main differences between the four scenarios were manifested in the potential opportunities that could arise for KPMG in that specific scenario. The created scenarios are shown in Figure 10 with larger pictures in appendix [C4](#).

Throughout the process, the participants generated names for the scenarios, which were used to distinguish them in addition to their numerical labels. The names of the scenarios and the corresponding axes are presented in Table 3 below:

Scenario	Title	x-axis	y-axis
1	I-Robot	High fragmentation	Complete black box
2	Skynet	High consolidation	Complete black box
3	Open-AI	High fragmentation	Complete transparency
4	Survival of the fittest	High consolidation	Complete transparency

Table 3: Overview created scenarios workshop 1 (23-06-2023)

During the discussion of the scenarios, the participants frequently mentioned how they already utilise generative AI in their work, enabling them to speak from experience on certain occasions. Since the scenarios were created collectively by all the present participants, the subsequent step of discussing the scenarios was skipped.

Scenario Template

Scenario 1: ~~Fragmented box~~
I. Robot

Participant:

- Opportunity for KPMG: create transparency for auditing
- ~~Very~~ lot of distrust, ~~why~~ now body ~~knows~~ why?
- ~~Opportunity~~ Risks for mortgages and insurance when the can't explain why certain groups get certain rates.
- ~~Uncertainty~~ uncertainty: Algorithms check algorithms.
- Risk: less clients with high fragmentation.
- Risk: more competition in consulting sectors (high fragmentation)

Scenario Template

Scenario 2: Sky net

Participant:

- ~~Changes~~ Increases reliance on other firms
- Opportunity: Trust becomes even more important. Good for KPMG.
- Increase in distrust big company

Scenario Template

Scenario 3: open AI

Participant:

- AI = a public service
- * Opportunity: advice on which AI's to use in ~~which~~ situation.
- Risk: Employees may leave and ~~start~~ start own firm.
- Opportunity: for tech audits as it is easier to use for clients.

Scenario Template

Scenario 4: survival of the fittest

Participant:

- AI will become very asset heavy.
(high maintenance, high certification costs)
- More users the more value.
- Opportunity KPMG: Manage trustworthiness service
- Risks: It becomes a knowledge center.

Figure 10: Created scenarios workshop 1 (23-06-2023)

- 15:45 – 15:50 individually rank scenarios

At the beginning of the activity, the participants received a paper impact-likelihood matrix template from the facilitator to individually rank the four created scenarios. The expected outcome was that their rankings would align since they had collectively created the scenarios.

Participant 3 expressed confusion regarding the purpose of filling out this matrix as he believed to already done so earlier. The facilitator provided an explanation, stating that the impact-uncertainty matrix addressed the individual factors involved, whereas this exercise focused on the created scenarios and how participants assessed the impact and likelihood of each created scenario. The participant understood the distinction between the exercises and proceeded rank the scenarios. Participants 1 and 2 expressed difficulty in ranking scenario 4 because they did not consider it to be realistic.

- 15:50 – 15:55 Final impact-likelihood matrix

With every participant individually completing the impact-likelihood matrix the next step was to create one final impact-likelihood matrix with the input from all the participants.

The facilitator asked a random participant about the ranking of the first scenario. The facilitator then asked other participants for their input or welcomed other viewpoints about the placement of the scenario. After every participant had got the opportunity to voice their opinion for this scenario these steps were repeated for the other three scenarios. While creating the final impact-likelihood matrix the facilitator directed the group in reaching an agreement or as close to an agreement as possible.

Overall, the participants generally aligned in the placement of the scenarios in the matrix. The only scenario in which the opinions on the impact and likelihood differed among the participants was scenario 4. After a discussion, a compromise was reached, and scenario 4 was positioned at the midpoint of the matrix. The resulting matrix is depicted in Figure 11 with the photographed matrix in the appendix C5.

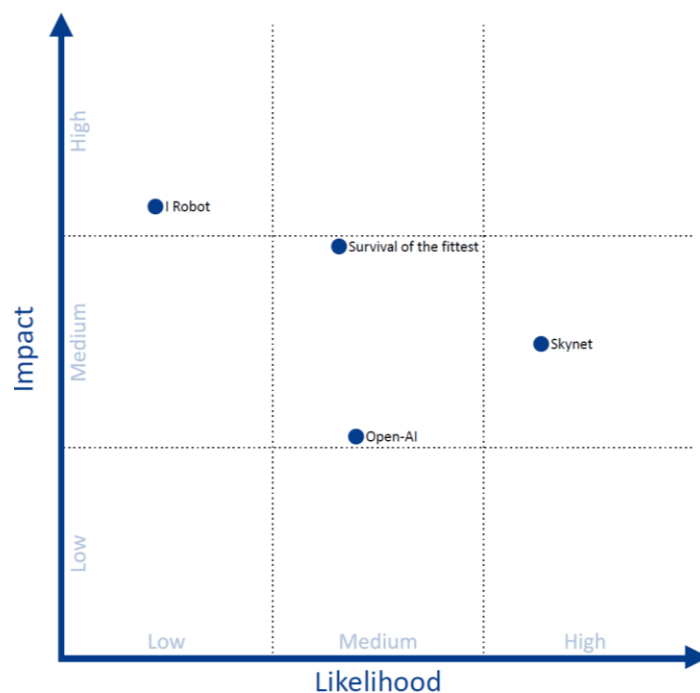


Figure 11: Impact-likelihood matrix workshop 1 (23-06-2023)

- 15:55 – 16:05 Answer key question

With the final impact-likelihood matrix displayed on the board, it was clear that the participants considered scenario 2 named 'Skynet' be the most likely. The participants proceeded to answer the key question with scenario 2, called "Skynet", in mind. Some discussion had already taken place about strategies during the ranking of the scenarios, this activity provided an additional opportunity for in-depth discussions. They considered several practical implications for KPMG. The key step according to the participants was the formation of partnerships with major generative AI vendors. During the discussion it became evident that they considered forming partnerships to be the most important step across all scenarios

- 16:05 – 16:20 Complete questionnaire

The facilitator distributed the paper questionnaires to the participants, and they began filling them out. While completing the questionnaire, participant 3 mentioned having prior experience with scenario planning and asked the facilitator about the idea behind certain choices and the choice for certain models used throughout the workshop. There was a noticeable difference in the amount of time each participant spent on completing the questionnaire. As the session came to an end, the participants expressed their appreciation to the facilitator with the workshop's delivery and format.

- 16:20 – 16:25 Thank you & Closing

The facilitator expressed his gratitude for the participation of the participants and their involvement throughout the workshop. Afterwards, a conversation took place between participant 3 and the facilitator regarding the differences between the participant's usual approach to scenario planning and the advantages and disadvantages compared to this workshop.

Workshop Evaluation

This section provides a reflective analysis of the workshop's proceedings and results, with a focus on the key takeaways and areas of improvement. This section is divided into two subsections: one presenting the participants' perspective, gathered through the completed questionnaires and observations and the other exploring workshop-specific learnings and insights from a facilitators' viewpoint.

Questionnaire Results

This subsection presents the results of the questionnaire. All three present participant completed the questionnaire. The questionnaire template can be found in appendix B5. The statements are taken from the thesis of Boot (Boot, 2022). The questionnaire consisted of open-ended questions and statements that were answered on a 5-point Likert scale. Initially, we will review the results of the open-ended questions, followed by an exploration of the statements.

Workshop Experience

In general, the participants expressed a positive experience of the workshop. The participants appreciated the pace and structure of the workshop, as well as the invitation and opportunity for discussions at every stage of the workshop. The participants were pleased with the choice of the workshop's topic, which focused on Generative AI, as it held relevance and significance within the organisation. All participants expressed that it would be beneficial to run the workshop more frequently within the organisation. *"I would run the workshop more often considering all the other topics relevant for digital service firms"* (participant, remark in questionnaire).

Method

Two out of the three participants were unfamiliar with the scenario planning method used in the workshop, but in the end all the participants expressed satisfaction with its application. They appreciated the step-by-step approach and the clear distinction between the workshop's stages, which was also outlined in the agenda beforehand. An added benefit was the recognition that trends inherently carry a degree of uncertainty, and the method enabled the exploration of the trend from various perspectives. One participant expressed their experience by stating: *"We had the opportunity to exchange experiences and associate them to potential projects in the upcoming years, while keeping in mind the potential impact of Generative AI"* (participant, remark in questionnaire).

However, the potential uncertainty associated with a trend also presented a challenge. One participant mentioned finding it challenging to envision a scenario due to the uncertainty surrounding the impact of a trend and the degree to which a scenario should depend on it. Another potential area for improvement was noted regarding the subsequent stages of the workshop, a lot of the later stages depended on the selection of the two critical scenario drivers. *"Restricting the creation of the scenarios to only two factors imposes a limitation on the number of scenarios and it can be beneficial to consider multiple axes for scenario creation"* (participant, remark in questionnaire).

A final remark was made considering the outcomes derived from the workshop. *"I believe that the biggest challenge is to consolidate all the ideas and scenarios discussed during the session"* (participant, remark in questionnaire). The participant further questioned the optimal approach to preserve the ideas and results of the first session and how to build upon them in future iterations.

Figure 12 illustrates the participants' evaluations of the statements. The statements can be categorised into two sections. The first two statements address the insights gained in the workshop, while the other eight statements focus on the workshop's structure and compositions. The horizontal axis represents the number of experts that voted.

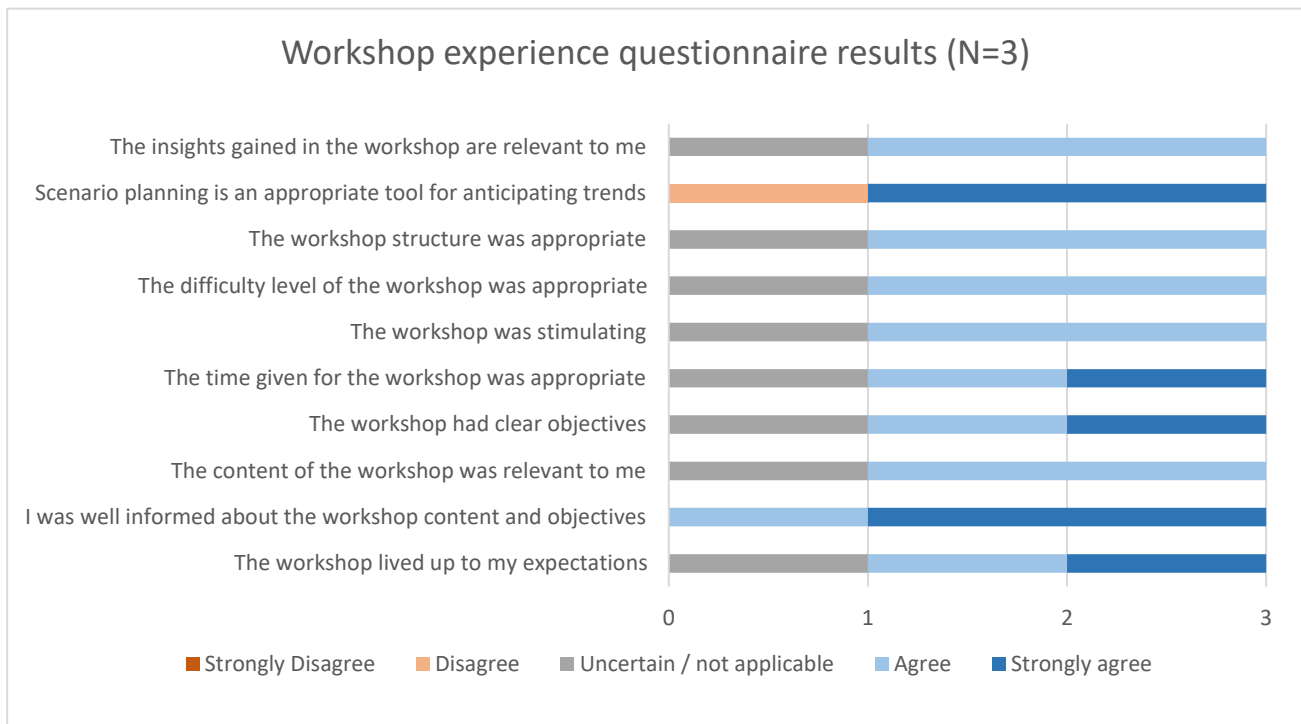


Figure 12: Workshop experience questionnaire results workshop 1 (23-06-2023)

The most notable result can be observed regarding the statement “Scenario planning is an appropriate tool for anticipating trends.” Two participants strongly agreed with the statement, while one participant disagreed. The participant who disagreed provided the following reason: “*Clients can think about impact and certainty but cannot come up with what the current trends are.*” (participant, remark in questionnaire). The participant did consider scenario planning to be a suitable tool for elaborating on trends but not for the selection of trends. The other participants did not provide any explanation regarding their strongly agree votes. The remark that clients are unable to generate trends is a valuable contribution if the workshop would be run with clients, however, this is not relevant for this workshop as the trend was selected beforehand.

Workshop-specific learnings and insights

One of the key takeaways was the disadvantage of creating the scenarios with only one group. As a result, the stage of discussing the scenarios was eliminated. However, what was particularly noticeable was that because participants must create all the scenarios, the defined boundaries of the critical scenario drivers became blurred. For example, during the creation of scenarios 1 and 2, a participant mentioned, “*We can use the same assumptions as the previous scenario*” (participant, remark in questionnaire). Normally, participants create scenarios in opposing quadrants, which limits the similarity of the scenarios based on the critical driving factors. Yet, once participants must create all the scenarios as a group, these limitations disappear. As a result, you lose both the purpose of discussing the scenarios and the delimitation of the scenarios through the critical driving factors. This indicates that the minimum number of participants to effectively conduct the workshop is four. This number allows for creating the scenarios in two groups, ensuring that the selected critical driving factors result in notable differences between the scenarios. Moreover, engaging in scenario discussions will enhance future foresight of the scenarios.

Workshop 2 (30-06-2023)

This section describes the executed workshop at KPMG on 30 June 2023, including a comprehensive overview of the events that occurred. The workshop activities and accompanying timeslots are displayed in Table 4, the workshops observations log can be found in appendix [D6](#).

Time	Activity	Duration
13:30 – 14:00	Preparations	30 min
14:00 – 14:05	Walk in & introduction workshop & present agenda	5 min
14:05 – 14:10	Communicate the goal of the workshop	5 min
14:10 – 14:15	Present key question	5 min
14:15 – 14:25	Identify driving factors	10 min
14:25 – 14:35	Discuss driving factors	10 min
14:35 – 14:45	Prioritise driving factors	10 min
14:45 – 14:55	Break	10 min
14:55 – 15:00	Select two critical driving factors	5 min
15:00 – 15:05	Create 2x2 matrix	5 min
15:05 – 15:25	Creating the scenarios	20 min
15:25 – 15:35	Discuss scenarios	10 min
15:35 – 15:40	Individually rank scenarios	5 min
15:40 – 15:45	Final impact-likelihood matrix	5 min
15:45 – 15:50	Answer key question	5 min
15:50 – 16:00	Complete questionnaire	10 min
16:00 – 16:05	Thank you & Closing	5 min

Table 4: Timetable workshop 2 (30-06-2023)

- 13:30 – 14:00 Preparations

During the workshop preparation, a step-by-step timeline was created, incorporating specific frameworks to be utilised during various workshop activities. Within this half-hour period, the facilitator set up the layouts of the frameworks on the flip-board in the room. Additionally, sticky notes and other writing materials were already arranged and readily available for the participants.

The reserved room did not possess an ideal layout for conducting a workshop, as it contained a single large table positioned in the centre, and the screens were not optimally placed. As a result, the participants were arranged in a U-shaped formation rather than being able to divide themselves into smaller groups at a later stage, depicted in Figure 13.

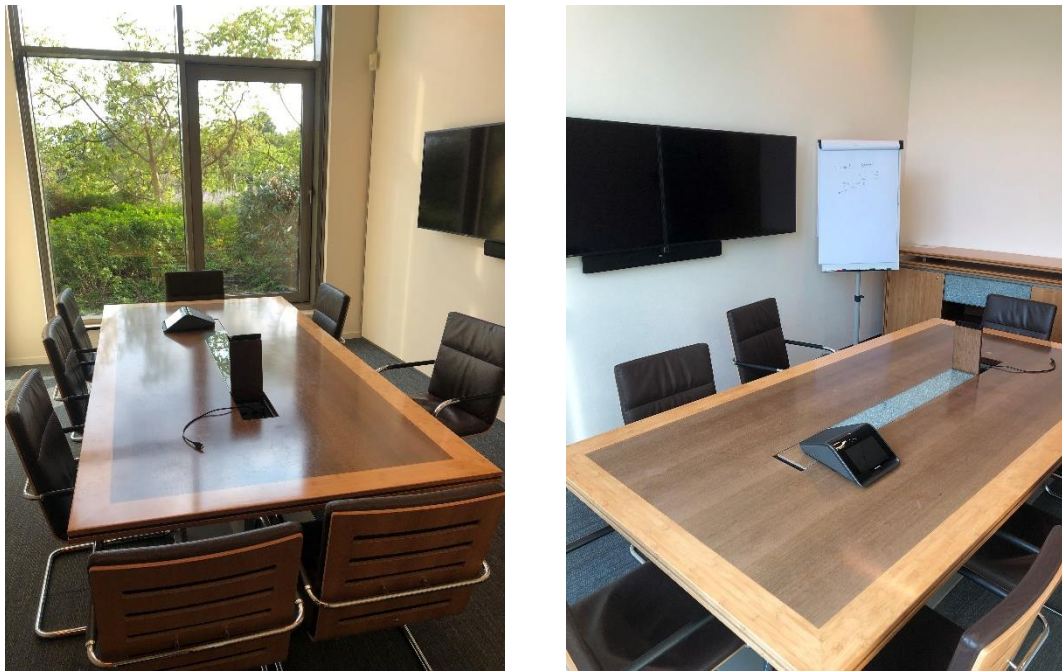


Figure 13: Workshop location workshop 2 (30-06-2023)

- 14:00 – 14:05 Walk in & introduction workshop & present agenda

The participants arrived during the designated period. Two participants entered while engaged in a conversation, as they immediately came from another meeting. One participant wondered if they should have prepared in advance because he arrived here unprepared. The facilitator reassured them by stating that it was a structured brainstorming session and emphasised that no essential information had been overlooked by not doing any prior reading.

The introduction proceeded smoothly and there were no questions from the participants regarding the workshop or the agenda. Throughout the entire workshop, participant 5 was allowed to use ChatGPT as a supporting tool. While the facilitator explained the agenda, participant 5 retrieved his laptop and prepared it in advance.

- 14:05 – 14:10 Communicate the goal of the workshop

The workshop's goal was communicated following the presentation of the agenda. The primary goal of the workshop is to use scenario planning to examine the impact of Generative AI on KPMG's workflow and explore its potential to enhance organisational procedures. The selection of Generative AI was because it is a popular subject of conversation within KPMG, centred around its potential in real-world applications but also looking at possible risk surrounding Generative AI. After communication the workshop's goal, a short overview of Generative AI was provided. This overview

included the example of ChatGPT, which led to recognition of some of the participants. The potential benefits and risks associated with the adoption of Generative AI within KPMG were also highlighted.

During the communication of the goal, the participants nodded in agreement, and there were no questions regarding the objective of the workshop.

- 14:10 – 14:15 Present key question

To have a clear scope for the workshop, a key question was formulated in advance by the facilitator. This question was formulated through desk research, an examination of previous action research project and consultations with experts in the subject. The pre-formulation of a question offers the advantage of saving time, as participants do not have to generate a question during the workshop. The key question formulated was: *“Should KPMG invest in generative AI to better advise their customers and streamline their workflow within the next 3 years?”*

Following the presentation of the question, Participant 2 suggest that we can simply respond with an affirmative “Yes” and conclude the session. The facilitator clarifies that even if the answer is “Yes” we will delve deeper into the underlying motivating and the strategies for how to invest. There were no further questions regarding the key question.

- 14:15 – 14:25 Identify driving factors

The identification of factors is accomplished using the PESTLE-analysis (Political, Economical, Social, Technological, Legal, Environmental) framework. The framework assists participants in both the generating and structuring the factors that influence Generative AI and impact the decision to invest from KPMG’s perspective. The facilitator briefly introduced the categories of the PESTLE analysis and instructed the participants to keep the following guiding question in mind as while brainstorming factors: *“What are the primary factors or considerations that influence the potential benefits and risks associated with Generative AI and the decision to invest for KPMG?”* Subsequently, the facilitator explained that each factor should be written on a separate sticky note, with participants being encouraged to provide a brief description rather than using a single word, the facilitator also specifically mentioned that the participants were allowed to use their laptop and to use ChatGPT to help them with generating factors. Additionally, participants were informed that approximately 15 minutes were allocated for this stage of the workshop.

Following the explanation of the PESTLE analysis, the facilitator asked if the instruction were clear to all the participants. Participant 4 responds affirmatively with *“I think so”*. Participant 3 asked if they are allowed to collaborate while identifying the driving factors, to which the facilitator responds that this task is meant to be completed individually. Participant 2 asks if the facilitator is looking for single words or phrases while recording the factors. The facilitator explains that it is preferable to write down more than one keyword, but it does not have to be a narrative of five sentences, a keyword with some contextual information is ideal. Participant 1 seeks clarification regarding the possibility of filling in multiple factors per category in the PESTLE-analysis, the facilitator confirms that it is allowed to identify more than one factor per category but indicates that a new sticky note should be used for each identified factor.

After this discussion participant 4 is unsure about what she should record. The facilitator reiterates that the focus should be on factors that could impact Generative AI and the decision for KPMG to invest in the technology. The facilitator notices that participant 2 crumples a note after the examples and inquiries about its content. Participant 2 explains that it described that the boring aspects of work could be automated. The facilitator acknowledges that this factor does indeed influence the decision

to invest for KPMG, as it could be perceived as an advantage to invest. As a result, participants 2 decides to rephrase a rewrite the factor. Subsequently, the facilitator reassures the participants and emphasises that there is no right or wrong when brainstorming about the factors. After this reassurance the participants start with generating factors. Participant 5 used ChatGPT for generating factors and started with the following prompt: *"What are the factors that impact Generative AI? Can you categorise these factors according to the PESTLE analysis?"* (participant, ChatGPT prompt. Using the responses provided by ChatGPT and the generated factors by this participant, we can observe that some answers are reflected literally, such as "Carbon footprint," "Intellectual property laws and regulations," and "Financial investment required in AI". The prompts of the participant are shown in Figure 14.

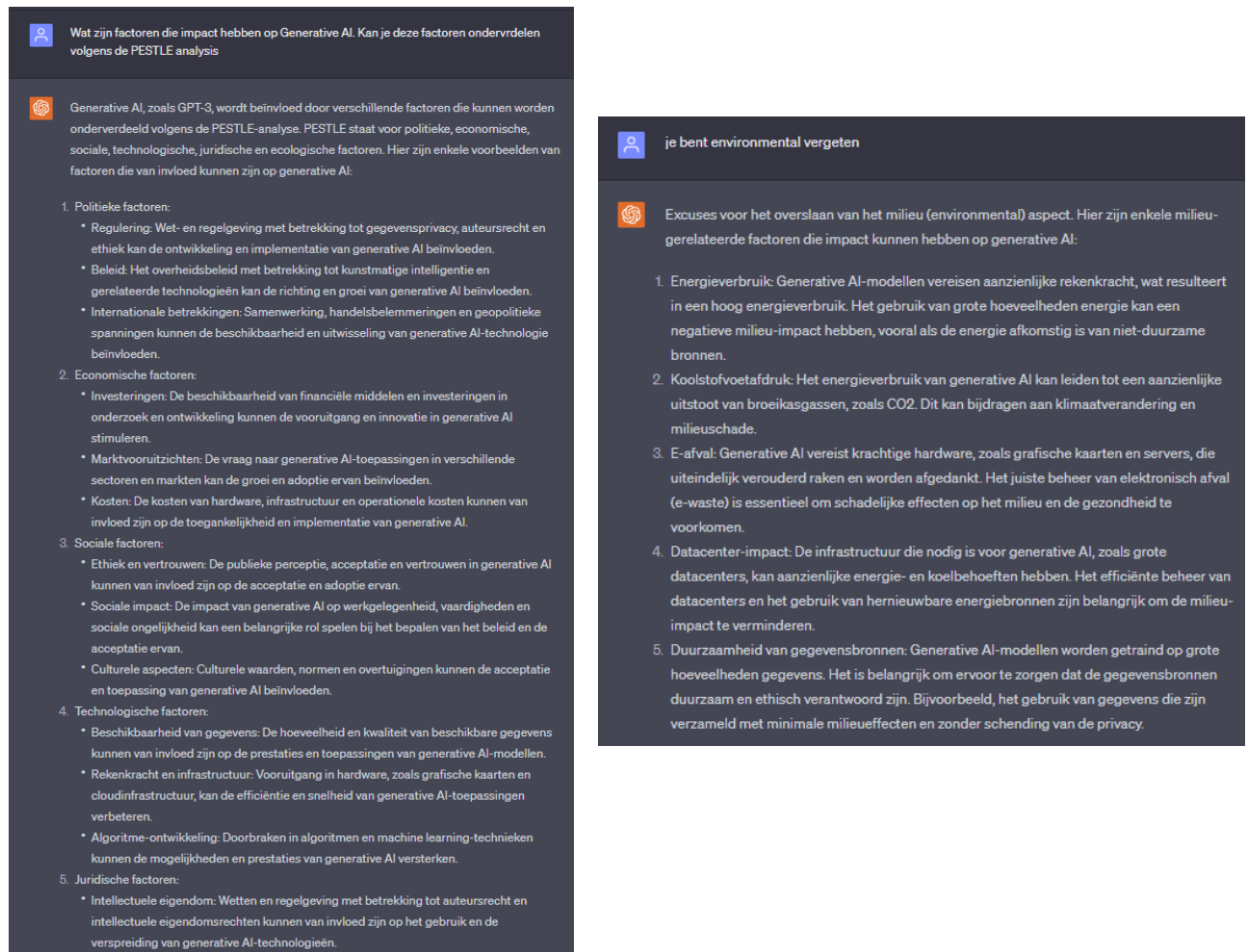


Figure 14: ChatGPT prompt PESTLE-analysis

Ten minutes into the exercise, it became evident that the participants had finished identifying the factors, leading to the decision to proceed to the next stage of the workshop. Ultimately, each participant had identified between seven and ten factors.

○ 14:25 – 14:35 Discuss driving factors

After individually writing down the factor, the participants were instructed to present their sticky notes to the remaining participants. The presentations began with participant 4 and proceeded in order until participant 1, concluding with participant 5. This sequence was chosen to allow the participant who was allowed to use ChatGPT to present their factors as the final contributor. Each participant briefly explained the factor in a few sentences, and the affixed the sticky note onto the board in the

appropriate category within the PESTLE-analysis. During the presentations, there was room for the other participants to respond to the presented factors. Participant 2 offered a response to participant 4's factor concerning reduced competition between companies. *"If each company develops its own Generative AI model, wouldn't that actually lead to more differentiation and competition among companies?"* (Participant, quote in workshop). Participant 4 expressed gratitude for this insight, acknowledging that it had not been considered before. When participant 5, the participant who was allowed to use ChatGPT, presented his identified factors, participant 4 jokingly said *"now we are going to hear all the 'correct' answers"*, referring to the fact that ChatGPT had generated these factors. After all the factors were placed on the board, some factors were merged before moving to the next stage. The created PESTLE-analysis can be seen in Figure 15, with the original photo included in appendix D1.

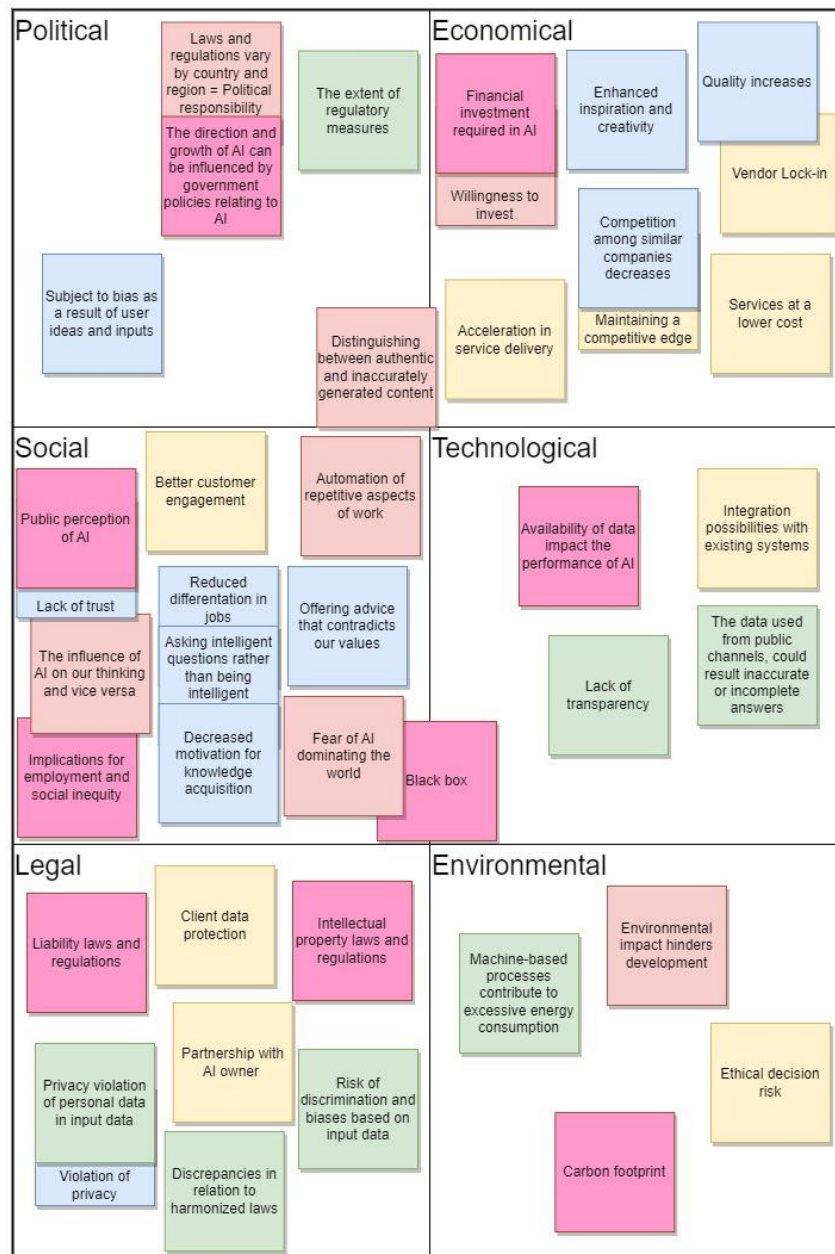


Figure 15: PESTLE-analysis workshop 2 (30-06-2023)

Ultimately, the five participants collectively identified 42 factors, out of which 4 were merged before proceeding to the next stage of prioritising driving factors.

- 14:35 – 14:45 Prioritise driving factors

At the beginning of this stage each participant received 10 dot stickers per person. These 10 stickers consisted of 5 red stickers and 5 blue stickers. The red stickers indicated the impact of the factor, and the blue stickers indicated the uncertainty of a factor. The participants had the opportunity to individually vote on which factors they believed had the highest impact or uncertainty. The facilitator said to the participants that they should keep the following question in the back of their minds: *“Which factors have the highest impact on the success of Generative AI and the adaptation of Generative AI and which factors are the most uncertain or the most unpredictable on the success and adaptation of Generative AI?”* Every participant voted individually on the factors resulting in the scheme shown in Figure 16.

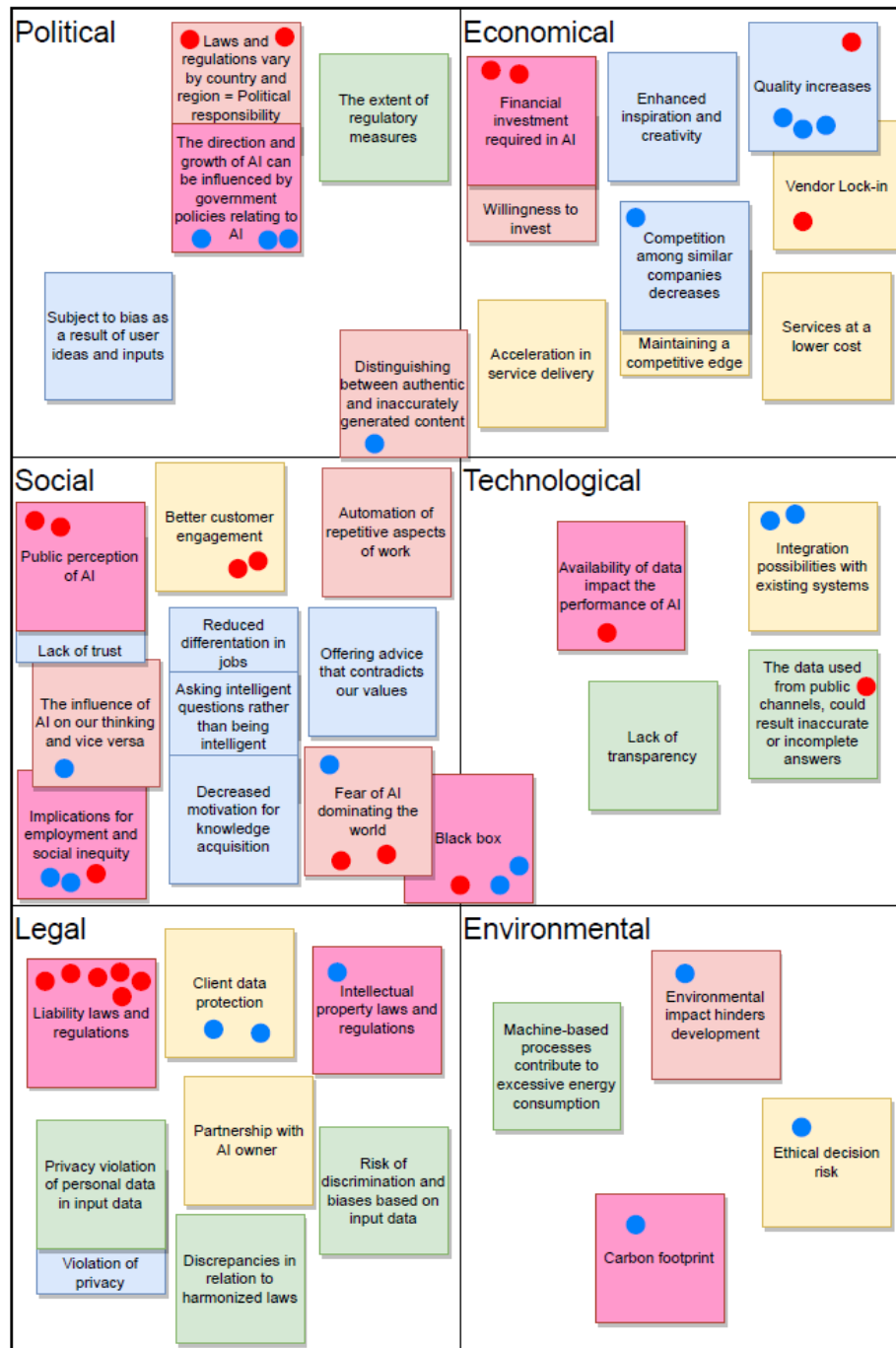


Figure 16: Prioritised factors workshop 2 (30-06-2023)

The five participants gathered around the flipboard, although the space was limited, they managed to simultaneously place prioritise the driving factors using stickers. While affixing the stickers, participant 2 wondered if it was possible for a sticker to receive both a red sticker and a blue sticker. The facilitator confirmed that this was possible if the participant thought that a factor had both a high impact and a high uncertainty. Participant 3 sought clarification regarding the perspective from which to consider the impact, whether it was focused on the impact on Generative AI or the adoption of Generative AI by KPMG. The facilitator clarified that the focus should be on KPMG's perspective, specifically on the adoption of Generative AI.

During the voting process, participant 3 and 4 engaged in a discussion regarding the economic factor of competition. They had almost identical factors, but one participant chose a positive perspective while the other participant took a negative perspective regarding KPMG's competitive position.

In the final analysis, a total of 22 blue stickers and 22 red stickers were placed during the prioritisation of the factors. This indicates that there were 3 missing stickers in both categories. This was not checked during the workshop, and no reasons were provided for the missing stickers.

○ 14:45 – 14:55 Break

The facilitator declares a break and explains the steps he is going to take during the participants' break. The facilitator will examine the PESTLE-analysis and construct an impact-uncertainty matrix containing all the factors that have received at least one vote during the prioritisation of the factors. The purpose of the impact-uncertainty matrix is to identify critical scenario drivers (Maack, 2001). Factors that did not receive any votes are not included in the matrix but would have been placed in the bottom left corner, indicating very low impact and very low uncertainty according to the participant. Factors that received the same number of votes were grouped together. The created impact-uncertainty matrix is presented in Figure 17 with the original displayed in the appendix [D2](#).

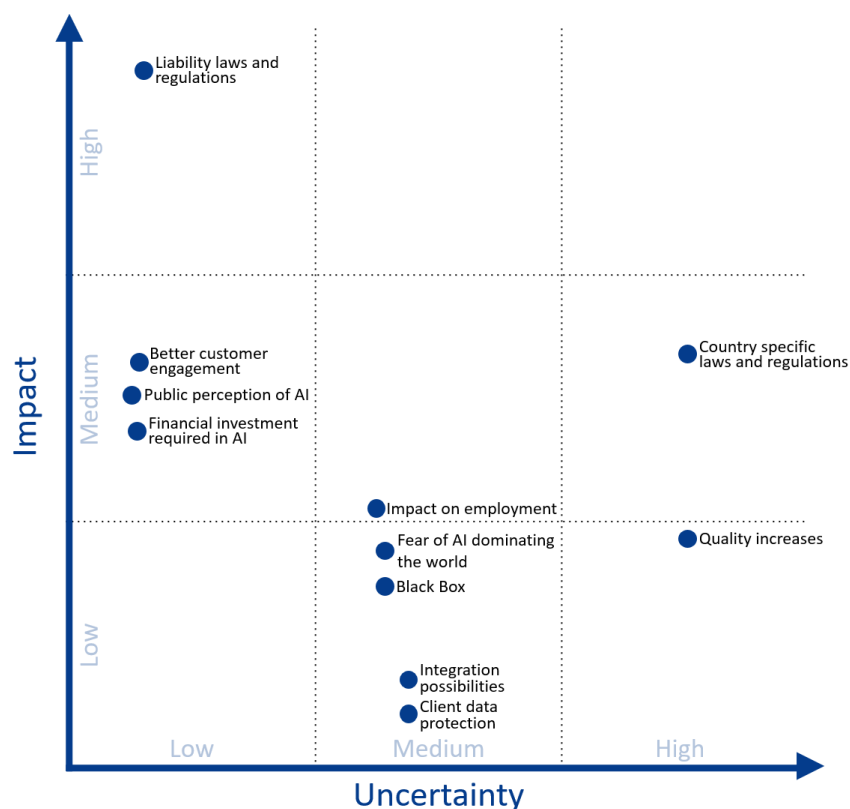


Figure 17: Impact-uncertainty matrix workshop 2 (30-06-2023)

- 14:55 – 15:00 Select two critical driving factors

As the participants enter the room after enjoying their break, they see the created impact-uncertainty matrix. The facilitator explains what will happen next and shows the prepared 2x2 matrix, participant 4 compliments the facilitator on his thorough preparation, noting the seamless flow of the workshop due to the well-prepared setup.

After seeing the impact-uncertainty matrix and the placement of the factors, participant 5 wonders if it is useful to select Liability laws and regulations as a critical factor to create scenarios as it is highly certain to happen. Participant 3 responds by that it is certain that someone will be responsible, but the key question is who would assume that role, KPMG, or the AI supplier. The participants quickly recognise the significance of this factor and already engage in a discussion who would be responsible in different situations. Participant 2 initially expresses scepticism regarding a supplier being held accountable, but participant 3 gives an example of the potential accountability of the supplier in instances of algorithmic discrimination. With this example, participant 2 realises that there are indeed various examples to consider, leading to the selection of this factor as one of the two critical driving factors.

The factor with country specific laws and regulations was the factor with the second-most votes, but the participants find it less captivating because in combination with the liability laws and regulations it would solely focus on the legal aspects. Participant 2 remarks: *“That is a boring factor”* (participant, quote in workshop). Another factor with a significant number of votes was the factor regarding the quality increase. After a short discussion the decision is made to choose the factor quality increases, with a particular emphasis on service quality. This resulted in the selection of the two critical driving factors being: *“Liability laws and regulations”* and *“Quality increases”*

- 15:00 – 15:05 Create 2x2 matrix

Following the identification of the critical driving factors, the extremities of each factor had to be placed on the axes. During the process of selecting the factors there had already been a discussion about the extremities that should be placed on the axes of the 2x2 matrix. The extremities on the vertical axis of Liability laws and regulations were quickly determined. Participant 3 suggested, “*On one end, KPMG liable, and on the other end, AI vendor liable*” (participant, quote in workshop). Similarly, the extremities on the horizontal axis of Quality increases were chosen without much discussion. With one end displaying that the quality-of-service decreases and on the other hand indicating that the quality-of-service increases. This led to the formation of the following matrix, illustrated in Figure 18, the original matrix can be found in appendix [D3](#).

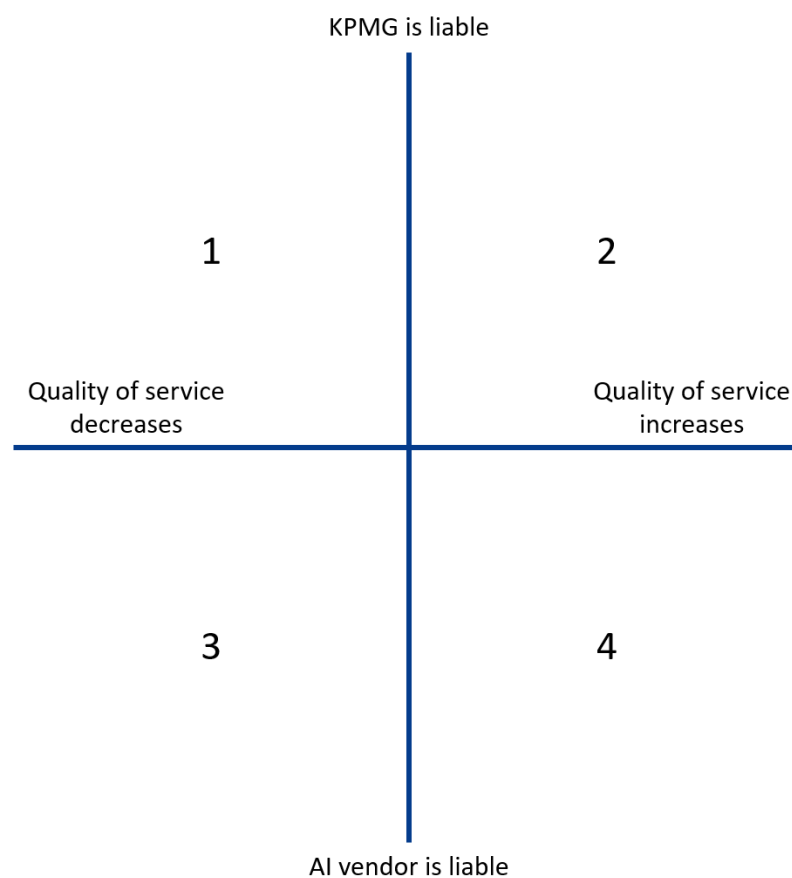


Figure 18: 2x2 matrix workshop 2 (30-06-2023)

- 15:05 – 15:25 Creating the scenarios

The facilitator explains that the scenarios will be created using the 2x2 matrix. The group was divided into two smaller groups. Group A consists of participants 1, 2, and 3 and group B consists of participants 4 and 5. The rationale for this division is that participants 4 and 5 have access to ChatGPT as an additional resource, since participant 5 is allowed to use ChatGPT as support. Group A is tasked with creating scenario 1 and 4, while group B concentrates on scenario 2 and 3.

The participants were instructed to create a vivid image of the future for each scenario, paying specific attention to the key issues and the assumptions made. As well as looking at other relevant factors such as: stakeholders, risks and opportunities, implications and consequences and potential triggers. The facilitator provided a time limit of 8 minutes per scenario and that the facilitator would indicate when it was time to move to the next scenario. During the creating of the scenarios the participants noted that the scenarios naturally emerged within the framework established by the axes. Due to the previous stage and discussion about the axes, there were no ambiguities about the axes among the participants.

Right from the beginning, a distinction was noticeable between the subgroups. Group A immediately engaged in a discussion about the scenarios based on the chosen critical driving factors, while Group B mainly focused on formulating a prompt to input into ChatGPT. In the prompt, we can observe that the initial question was: *“Can you outline a scenario in which the quality of work significantly improves through Generative AI, and where the responsibility lies with the consultancy company rather than the AI provider?”* This prompt was entirely constructed by providing the two boundaries set by the critical scenario drivers to ChatGPT and say that it should consider the scenario from KPMG’s perspective. ChatGPT provided an extensive response after which the group requested a summary. Scenario 2 was created by group B and particularly incorporates elements derived from the summary. Further discussions in group B primarily revolved around the output provided by ChatGPT and the input they needed to provide to ChatGPT. This stood in contrast to the substantive discussions held by group A, where they themselves formulated assumptions and attempted to paint a vision of the future. The created scenarios are illustrated in Figure 19, with the full scenarios included in appendix [D4](#)

Scenario Template

Scenario 1

Participant: Team 1

Key issue: ① kwaliteit KPMG dienstverlening gaat achteruit met de inzet van GenAI
② KPMG is volledig aansprakelijk voor het geleverde advies aan de klant.

Assumptions: ① KPMG zet voor een groot deel van haar dienstverlening GenAI in.
② Geleverde output (GenAI) wordt volledig voor waar aangenomen.

Scenario: KPMG verliest rechtzaak, equity partners zijn al hun investeringen kwijt. KPMG vraagt haar faillissement aan, gedwongen door haar volledige aansprakelijkheid.

Scenario Template

Scenario 2 "Zero AI"

Participant:

Risks:
- klant reputatie schade door slecht advies
- wantrouwen, slechte kwaliteit
- verkeerde info aan klanten & aanmoediging slechte beslissingen

opportunities:
- KPMG hoeft minder op audit en Risk controles te uitvoeren aangezien ze toch niet aansprakelijk zijn

- Ze kan alles op de provider verhalen

- De leverancier stapt erin dat KPMG nu het niet meer gekrijst

- KPMG moet eventueel extra juridische stappen ondernemen

Scenario Template

Scenario 2 "alles onder controle"

Participant:

Risks:
- als KPMG aansprakelijk is, is er veel kans op rechtspraak bij foutieve adviezen
- Omdat KPMG aansprakelijk is, moet ze nog meer controles en audit uitvoeren, om dit risico te mitigeren

Opportunity:
- aangezien de service verbetert, zal de klant tevredenheid ook verbeteren
- beter geïnformeerde beslissingen
- verbeterde efficiency, dus je kan meer zaken tegelijk doen

Scenario Template

Scenario 4

Participant: Team 2

Key issues: Is het wel KPMG nog iet waard wanneer zij niet meer verantwoordelijk is voor de geleverde output?

Assumptions: zie scenario 1

Scenario: KPMG breidt service portfolio uit met gekochte GenAI gebaseerde dienstverlening voor breder klantengroep (lagere segment) met minimale invloed van menselijke tussenkomst.
Daarnaast bestaande dienstverlening op waard gemaximeerd met de klant en KPMG constallandi als uitbreide controleslag → inzet menselijke analyse. Dit alles voor een hoog tarief.

Figure 19: Created scenarios workshop 2 (30-06-2023)

- 15:25 – 15:35 Discuss scenarios

The activity commenced with the participants presenting and explaining the scenarios to the other participants and the facilitator. Group A, consisting of participants 1 to 3, started by explaining scenario 1, followed by an explanation of scenario 4. Then, group B, comprised of participant 4 and 5, began with explaining scenario 2, following by an explanation of scenario 3. The participants came up with names for the scenarios during the presentation process, which were utilised in addition to their number designations to set them apart. Table 5 below lists the scenario's names along with the related axes:

Scenario	Title	x-axis	y-axis
1	Bankruptcy KPMG	Quality of service decreases	KPMG is liable
2	Everything under control	Quality of service increases	KPMG is liable
3	Zero-AI	Quality of service decreases	AI vendor is liable
4	Market penetration	Quality of service increases	AI vendor is liable

Table 5: Overview created scenarios workshop 2 (30-06-2023)

During the presentations of the scenarios, there was the opportunity for reactions and feedback from the remaining participants. Group A began with presenting their created scenarios. Throughout all the presentations, a jovial ambiance was created as participants constantly exchanged small jokes about the scenarios. During the explanation of scenario 1, the presenting participant 3 sought validation from the facilitator by continuously making eye contact after every explanation. After participant 3 also explained scenario 4, participant 4 inquired: *"Which scenario do you personally like the most?"* (participant, quote in workshop). Participant 3 initially replied that they liked both scenarios, but then stated: *"It seemed unrealistic for KPMG to adopt Generative AI if it fails to enhance the quality"* (participant, quote in workshop) thus deeming scenario 1 unrealistic. However, participant 3 expects scenario 4 to be realistic and believes that there is a high chance of moving towards this scenario in the future.

Participant 5 stepped forward and intends to begin explaining scenario 2. However, before starting, Participant 2 asks: *"Were these scenarios generated by ChatGPT?"* (participant, quote in workshop). Participant 5 answers with stating that ChatGPT struggled with generating the scenarios and provided limited support. Participant 3 agrees, adding: *"But once ChatGPT provided input, it was difficult to deviate from it because I relied less on my own thinking"* (participant, quote in workshop). Subsequently, the explanation of scenarios 2 and 3 followed, with no further questions posed by the remaining participants.

- 15:35 – 15:40 Individually rank scenarios

After the deliberation on the scenarios, the facilitator provided the participants with paper templates to complete the impact-likelihood matrix. Each participant was tasked with individually ranking the four created scenarios. After the distribution there were no questions raised by the participants, and they immediately begin the process of filling out the matrix. After participant 2 has filled in the matrix, he suddenly asks: *"Did I have to consider the impact on KPMG?"* (participant, quote in workshop). Upon the facilitator's conformation, he proceeds to rearrange the positioning of several scenarios. Meanwhile, the remaining participants were still in the process of completing their matrices.

- 15:40 – 15:45 Final impact-likelihood matrix

Following the completion of the individual impact-likelihood matrices by each participant, the objective was to collectively construct a final impact-likelihood matrix incorporating input from all individual matrices. The facilitator presented a large impact-likelihood matrix on the flipboard and asked one participant where they had placed a specific scenario. Subsequently, other participants were given room to respond on the initial placement and engage in a discussion. After every participant had been given the opportunity to express their opinion, a group consensus had to be reached on where to rank the scenario. These steps were repeated for the remaining three scenarios. Ultimately a final impact-likelihood matrix was created, reflecting a consensus among all participants regarding the positioning of the scenarios. This matrix is presented in Figure 20, with the original matrix included in the appendix D5.

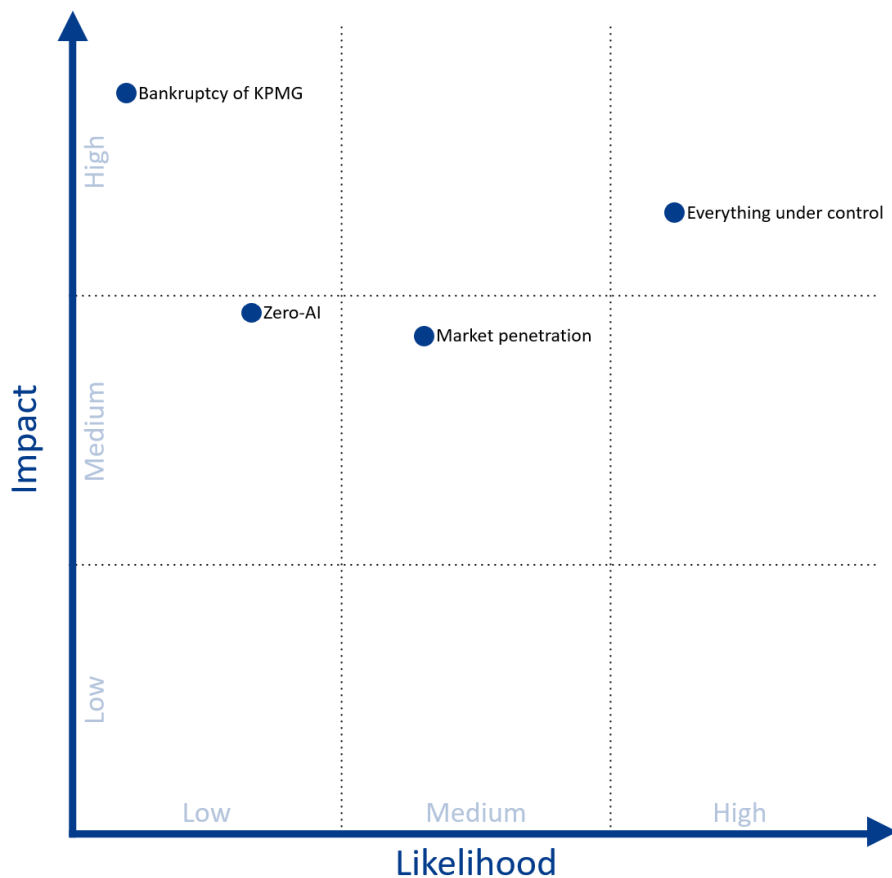


Figure 20: Impact-likelihood matrix workshop 2 (30-06-2023)

With the ranking of scenario 1, the bankruptcy of KPMG, everyone thought the likelihood would be low due to KPMG's risk aversion and the immediate rejection of generative AI if any doubt arose. There was a consensus about the placement of the second scenario, that this scenario has the highest probability of occurring. The third scenario led to a discussion, about the competitiveness of KPMG in this scenario. Participant 2 highlighted the inevitability of our competitors using generative AI suggesting that we should adopt it as well. This discussion kept the placement the same but delved deeper into the impact of AI and potential implications for the digital transformation domain. Participant 4 takes the lead in placing scenario 4, inciting a discussion revolving around the allocation of responsibility of the data and the diverse interpretations by individuals. Ultimately, a consensus was achieved, signifying collective agreement among the participants.

- 15:45 – 15:50 Answer key question

Based on the final impact-likelihood matrix, the scenario “Everything under control” is the most impactful and likely according to the participants. With this scenario in mind, we revisited the key question and explored various strategies for KPMG.

After the facilitator reiterates the question, Participant 2 – 5 harmoniously respond with “Yes”. Participant 2 continues, saying: *“It starts with automating non-critical processes”* (participant, quote in workshop). Participant 3 suggest: *“We should utilise our design thinking phase with AI into our client work”* (participant, quote in workshop). Participant 4 highlights the importance of thoroughly examining all the laws and regulations, and participant 1 agrees with this point. Participant 4 summarises: *“Yes, we need to invest in Generative AI, but before doing so, there are many arrangements and preparations to be made to implement in effectively within KPMG. With the right conditions in place would be a significant improvement step”* (participant, quote in workshop). Building on this, participant 1 adds: *“If we can become early adopters within the market, KPMG can also advise other clients in this area, creating an opportunity for it become one of our advisory propositions”* (participant, quote in workshop). Participant 3 also emphasise the importance of using our own data within our own data lake to adhere to laws and regulations. With these practical steps, the workshop concluded, and we proceeded to the final stage.

- 15:50 – 16:00 Complete questionnaire

After answering the key question, the facilitator distributed the questionnaire on paper and asked the participant to complete it individually. During the distribution, participant 5 asked if it did matter which language, they used to complete the questionnaire, to which the facilitator responded that it didn’t matter. After these questions the participants began filling out the questionnaire. Halfway through Participant 3 indicated that it was a lengthy questionnaire. After participants 2 and 5 had finished completing the questionnaire, the facilitator announced that after participants had completed the questionnaire, they were free to leave because the workshop had ended.

- 16:00 – 16:05 Thank you & Closing

After the announcement that the workshop had concluded, the participants gave the facilitator a brief round of applause, and several participants expressed their appreciation for the structure, preparation, and overall flow of the workshop. Participant 4 remarked, “When I received the invitation and thought about two and a half hours, wondering how to fill the time, but it flew by due to the interaction.”

The facilitator expressed his gratitude for the participation of the participants and their involvement throughout the workshop. Afterwards, a few participants stayed behind engaging in further discussions regarding the covered topics, while the facilitator cleared away the utilised frameworks and writing materials.

Workshop Evaluation

This section provides a reflective analysis of the workshop's proceedings and results, with a focus on key takeaways and areas of improvement. The section is divided into two subsections: one presenting the participants' perspective, gathered through the completed questionnaires and observations and the other exploring workshop-specific learnings and insights from a facilitators' viewpoint.

Questionnaire Results

This subsection presents the results of the questionnaire. All five present participant completed the questionnaire. The questionnaire template can be found in appendix B5. The questionnaire consisted of open-ended questions and statements that were answered on a 5-point Likert scale. In the questionnaire for this workshop, specific questions concerning ChatGPT were included because one participant utilised ChatGPT as support during the workshop. Initially, we will review the results of the open-ended questions, followed by an exploration of the statements and ending with the results of the questions about ChatGPT.

Workshop experience

The workshop received high praise from all the participants. All participants expressed that Generative AI was an interesting topic and is relevant to the organisation. This in combinations with participants' personal interest in the topic led to meaningful discussions during the workshop. The participants were impressed with the facilitator's preparations and the structure of the workshop. One participant commented on the interactive nature of the workshop by stating: *"By keeping it interactive you maintain focus during the workshop"* (participant, remark in questionnaire). Another participant noted the effectiveness of the visualisations through the multiple matrices and post-its *"The visual representation provides a clear overview, especially if you get momentarily distracted, you are right back in the discussion"* (participant, remark in questionnaire). All participants expressed that they would hold the workshop again within the company, with one participant remarking: *"providing the selected topic is relevant"* (participant, remark in questionnaire).

Method

Among the participants, four out of five were unfamiliar with scenario planning as a workshop method. After the workshop, all participants expressed satisfaction with the structured approach that scenario planning offers. One participant specifically appreciated: *"Establishing connections and drawing conclusions from previous steps in the workshop created a clear flow throughout the workshop"* (participant, remark in questionnaire). Other participants noted: *"Scenario planning increases creativity and stimulates conversations"* (participant, remark in questionnaire) and *"It is good that you can engage in on-the-spot discussions, and it makes you think in directions you hadn't considered before"* (participant, remark in questionnaire). Notably, one participant observed that the limited time made everything more fluid, implying that time pressure led to different responses compared to running the workshop without time constraints. This is an interesting remark, highlighting the possible positive impact of time constraints on both the workshops outcome and participants' engagement.

Nevertheless, some participant expressed limitations or challenges regarding the use of scenario planning as a method for a workshop. One participant remarked: *"In a group setting, there is the risk of unconsciously aligning with someone else's thought process, which can hinder individual thinking and limit options for discussions"* (participant, remark in questionnaire). Furthermore, there were comments about the creation of the scenarios. One participant felt that some of the generated scenarios were not always plausible to happen. Another participant expressed that focusing on a specific perspective during scenario creation limited the exploration of the entire scenario. A third participant expressed: *"Provide more structure and guidance in the scenario template"* (participant, remark in questionnaire).

Figure 21 illustrates the participants' evaluations of the statements. The statements can be categorised into two sections. The first two statements address the insights gained in the workshop, while the remaining eight statements focus on the workshop's structure and compositions. The horizontal axis represents the number of experts that voted.

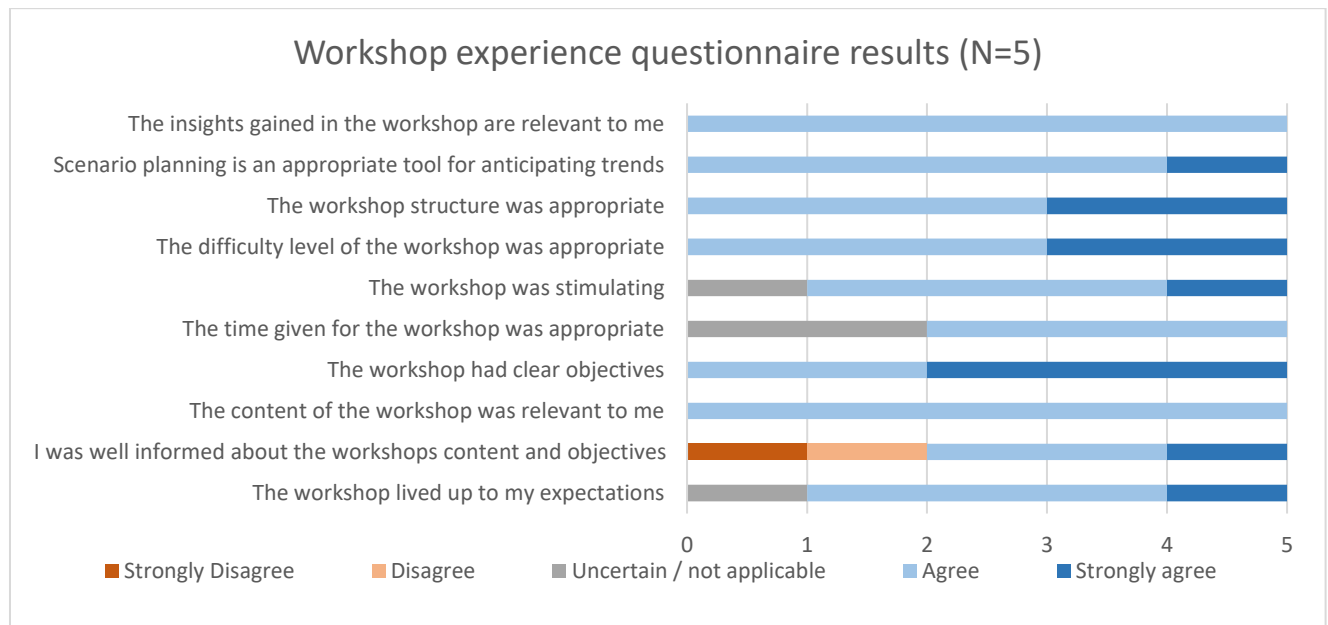


Figure 21: Workshop experience questionnaire results workshop 2 (30-06-2023)

The overall results on the statements are positive, with all the participants expressing satisfaction with the insights acquired during the workshop. The only statement where the answers are contradictory is: "I was well informed about the workshop content and objectives". Two participants disagreed with the statement, while the three remaining participants agreed. Both participants who disagreed did not provide any explanation in the questionnaire. A potential explanation can be derived from a conversation that took place during the workshop. Participant 4 discussed a topic mentioned in the invitation mail, leading to another participant responding: *"But does anyone actually read the invitation? I just accepted it"* (participant, quote in workshop). Not reading the invitation mail could explain why some participants did not have prior knowledge of the workshop's details before attending.

ChatGPT

It is noteworthy that the questionnaire did not fully align with the workshop's atmosphere surrounding ChatGPT. During the workshop numerous participants showed interest in the answers generated by ChatGPT and often sought Participant's 5 opinion, who was using ChatGPT. However, the overall impression of the questionnaire regarding ChatGPT appears to be somewhat negative, here are some comments from participants about ChatGPT. One participant mentioned that he found it interesting to hear the insights from ChatGPT, but also noted that it was challenging to determine if the answer originated from ChatGPT or was formulated by the participant on his own. Participant 4, who collaborated with the participant using ChatGPT to create scenarios, raised the following concern: *"ChatGPT distracts you and reduces your own thinking process because you expect ChatGPT's answer to be better"* (participant, remark in questionnaire). Another participant noted that ChatGPT provided additional input in a discussion without being distraction, but that this perception could be influenced because he did not personally utilise ChatGPT. The final participant acknowledged the importance of using technological advancements but emphasised the need for critical thinking of the user.

The identified advantages of ChatGPT included generating new insights, facilitating in discussions, and promoting creativity in response to simple straightforward questions. However, there were several disadvantages of ChatGPT mentioned, including concerns about the reliability of the answers, reducing personal thinking when using ChatGPT, and challenges in responding to complex questions. One participant expressed the following: *“Why should I participate in a workshop if ChatGPT can do it all?”* (participant, remark in questionnaire).

Participant 5’s questionnaire included additional statements about the use of ChatGPT. The participant’s response is shown in Figure 22.

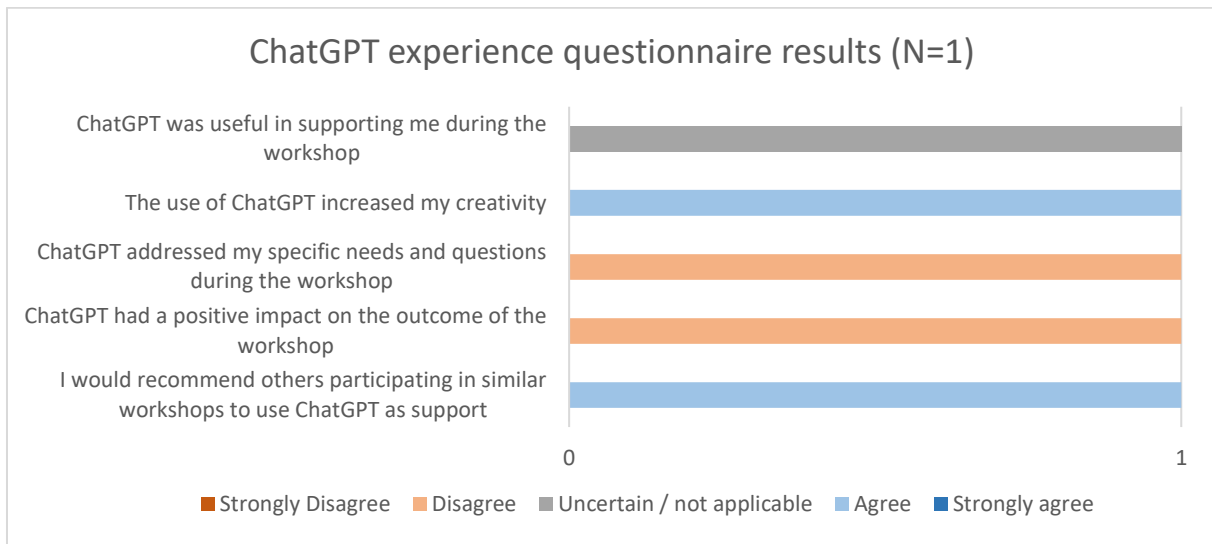


Figure 22: ChatGPT experience questionnaire results workshop 2 (30-06-2023)

The participant indicated that the use of ChatGPT as a support tool was somewhat distracting during the workshop. He also noted that as the workshop progressed, he used ChatGPT less and less. The reason given was that ChatGPT could not keep up with the pace of discussions. The participant mentioned that ChatGPT was only truly helpful during the identification of the factors for the PESTLE-analysis, as it involved more factual information rather than discussions. Moreover, the participant found it challenging to utilise his own creative thinking when using ChatGPT.

Overall, this sentiment is reflected in the questionnaire result. The participant remained uncertain about the effectiveness of ChatGPT as support during the workshop. It did not address his specific needs and questions during the workshop. Nevertheless, the participant would recommend its use to others, suggesting that the way the questions are formulated have big impact on the given answers. The participant also acknowledged that ChatGPT was helpful in identifying factors. The participant ended with: *“I would recommend using ChatGPT during the workshop, but don’t use it during the whole workshop and be selective of how and when you use it”* (participant, remark in questionnaire).

Workshop-specific learnings and insights

An observation that emerged during the workshop and was confirmed by the participant using ChatGPT was the fact that he also got distracted by ChatGPT and having a laptop in front of him. The potential heightened distraction due to ChatGPT was not considered beforehand.

Furthermore, two participants expressed that they were not well informed about the content of the workshop beforehand. This could partly be attributed to the participants themselves as they did not read the invitation mail but as the workshops facilitator it is worth examining how we can ensure that each participant is informed about the contents of the workshop beforehand.

Lastly, a participant inquired whether the composition of the participants was considered during the selection of the participants. The composition could influence the outcomes of the workshops due to varying levels of experience from the participants. This aspect could be addressed in future workshops.

Workshop 3 (07-07-2023)

This section describes the executed workshop at KPMG on 7 July 2023, including a comprehensive overview of the events that occurred. The workshop activities and accompanying timeslots are displayed in Table 6, the workshops observations log can be found in appendix E6.

Time	Activity	Duration
13:30 – 14:00	Preparations	30 min
14:00 – 14:05	Walk in & introduction workshop & present agenda	5 min
14:05 – 14:10	Communicate the goal of the workshop	5 min
14:10 – 14:15	Present key question	5 min
14:15 – 14:30	Identify driving factors	15 min
14:30 – 14:45	Discuss driving factors	15 min
14:45 – 14:55	Prioritise driving factors	10 min
14:55 – 15:05	Break	10 min
15:05 – 15:15	Select two critical driving factors	10 min
15:15 – 15:20	Create 2x2 matrix	5 min
15:20 – 15:40	Creating the scenarios	20 min
15:40 – 15:50	Discuss scenarios	10 min
15:50 – 15:55	Individually rank scenarios	5 min
15:55 – 16:10	Final impact-likelihood matrix	15 min
16:10 – 16:15	Answer key question	5 min
16:15 – 16:25	Complete questionnaire	10 min
16:25 – 16:30	Thank you & Closing	5 min

Table 6: Timetable workshop 3 (07-07-2023)

- 13:30 – 14:00 Preparations

Prior to the workshop, the facilitator prepared the room where the workshop was held. On a flipboard the blank frameworks and matrices were outlined. These included the PESTLE-analysis, impact-uncertainty matrix, 2x2 matrix and impact-likelihood matrix. Additionally, questionnaires, scenario templates and impact-likelihood matrices were prepared on paper to be filled out by the participants at a later stage. On the table, stickers, sticky notes, and other writing materials were readily available for the participants.

- 14:00 – 14:05 Walk in & introduction workshop & present agenda

The first participant arrived exactly at 14:00. Between 14:00 and 14:05, the remaining participants arrived one at a time. At 14:05, five out of the six participants were present, with one participant having notified the facilitator about arriving a few minutes later. The facilitator had spoken with this participant beforehand and had already introduced the workshop, allowing the workshop to start at 14:05. After introducing the workshop and presenting the agenda, the final participant arrived, completing the group of six participants that had signed up for this workshop.

The introduction of the workshop and the presentation of the agenda did not yield any question from the participants. During the explanation, the participants occasionally were distracted and looked at their phones, but gradually set them aside to focus on the workshop. During the workshop introduction, it was stated that participants were allowed to utilise ChatGPT, resulting in two participants immediately opening their laptops and start up ChatGPT. The remaining participants listened without taking any action. While presenting the agenda, Participant 2 expressed his gratitude and complimented the facilitator on the clarity and comprehensive overview provided in the agenda at the start of the workshop.

- 14:05 – 14:10 Communicate the goal of the workshop

The communication of the workshop's goal commenced immediately after presenting the agenda. The workshop aims to employ scenario planning to examine the potential impact of Generative AI on KPMG's operations and to explore its potential to improve organisational processes. The trend of Generative AI was selected due to being a prominent topic of discussion within KPMG, revolving around its possible practical applications in the workplace and the inherent uncertainties surrounding Generative AI. Following the explanation of the workshop's objective, a short overview of Generative AI was provided, where the widely known example of ChatGPT was mentioned. This reference led to recognition from some of the participants. In addition, potential benefits and risks associated with the adoption of Generative AI within KPMG were highlighted.

During the explanation, two participants displayed significant interest in the goal of the workshop, as they observed its relevance within their respective domains in the organisation. A third participant mentioned that he already used Generative AI on an almost daily basis. The facilitator inquired whether all the participants understood the workshops' goal to which they responded affirmatively through nodding to the facilitator.

- 14:10 – 14:15 Present key question

To have a clear scope for the workshop, a key question was formulated in advance by the facilitator. This question was formulated through desk research, an examination of previous action research project and consultations with experts in the subject. The pre-formulation of a question offers the advantage of saving time, as participants do not have to generate a question during the workshop.

“Should KPMG invest in generative AI to better advise their customers and streamline their workflow within the next 3 years?”

The participants did not raise any question regarding the key question. Participant 6 responded that the answer would simply be a straightforward “yes”. The facilitator acknowledged this possibility but emphasised that the focus would shift to exploring the ‘how’ aspect if the organisation should invest. The participants responded affirmatively to this addition and did not have any further remarks.

○ 14:15 – 14:30 Identify driving factors

The identification of factors is accomplished using the PESTLE-analysis (Political, Economical, Social, Technological, Legal, Environmental) framework. The framework assists participants in both the generating and structuring the factors that influence Generative AI and impact the decision to invest from KPMG’s perspective. The facilitator briefly introduced the categories of the PESTLE analysis and instructed the participants to keep the following guiding question in mind as while brainstorming factors: *“What are the primary factors or considerations that influence the potential benefits and risks associated with Generative AI and the decision to invest for KPMG?”* Subsequently, the facilitator explained that each factor should be written on a separate sticky note, with participants being encouraged to provide a brief description rather than using a single word, the facilitator also specifically mentioned that the participants were allowed to use their laptop and to use ChatGPT to help them with generating factors. Additionally, participants were informed that approximately 15 minutes were allocated for this stage of the workshop.

After the explanation Participant 3 asked if they were allowed to use ChatGPT to help them with the factor creation. The facilitator reiterated that participants were allowed to use ChatGPT for the factor generation, but they could also contribute their own ideas and factors. Participant 2 raised a question: *“So we should examine the potential effects of investing in Generative AI?”* In response the facilitator provided a few examples of potential factors, such as the potential impact of the required data centres on the investment decision. After this explanation and the examples, the participant understood the intended direction for identifying factors. After a minute Participant 3 asked another question: *“So, should I write down factors that hinder adoption?”* The facilitator answered that the factors could be both positive and negative. Subsequently the participant sought clarification regarding whether they should consider ChatGPT specifically or Generative AI in general. The facilitator clarified that the focus was on Generative AI, rather than exclusively on ChatGPT. During the activity of generating factors, the participants had little interaction, and only occasionally did a participant speak something out loud. For instance, participant 2 inquired about the English translation of a specific term. But other than that, the participants created the factors individually.

What was noteworthy was the lack of utilisation of ChatGPT by any of the participants at the start of the factor generation process. All the participants started by brainstorming without the use of their laptop. After 5 minutes, some participants were staring in the distance, and the facilitator mentioned that they could still use ChatGPT as support for the generation of factors. Following this announcement, participants 2 and 4 immediately used their laptops to use ChatGPT. After a minute, participants 3 and 6 did the same, with participant 5 doing so a minute thereafter. Participant 1 only accessed his laptop to use ChatGPT within the final 5 minutes of the assignment

In the end all six participants used ChatGPT as a supportive tool for the factor generation, although each participant used a distinct approach. Upon reviewing the prompts provided by the participants, it was observed that some participants only sought assistance for generating factors of one category: For instance, Participant 5 asked, *"What is a legal factor that will influence the utilisation of ChatGPT for companies?"* (ChatGPT prompt, Participant 5, 7 July 2023). While another participant relied on ChatGPT to help in the generation of factors across all categories. Participant 3 asked: *"I am using a PESTLE analysis to identify the top reasons to NOT adopt generative AI in the next three years. For each of the PESTLE factors, can you provide three reasons not to adopt generative AI?"* (ChatGPT prompt, Participant 3, 7 July 2023) Some other examples of prompts from the participants can be found in Figure 23.

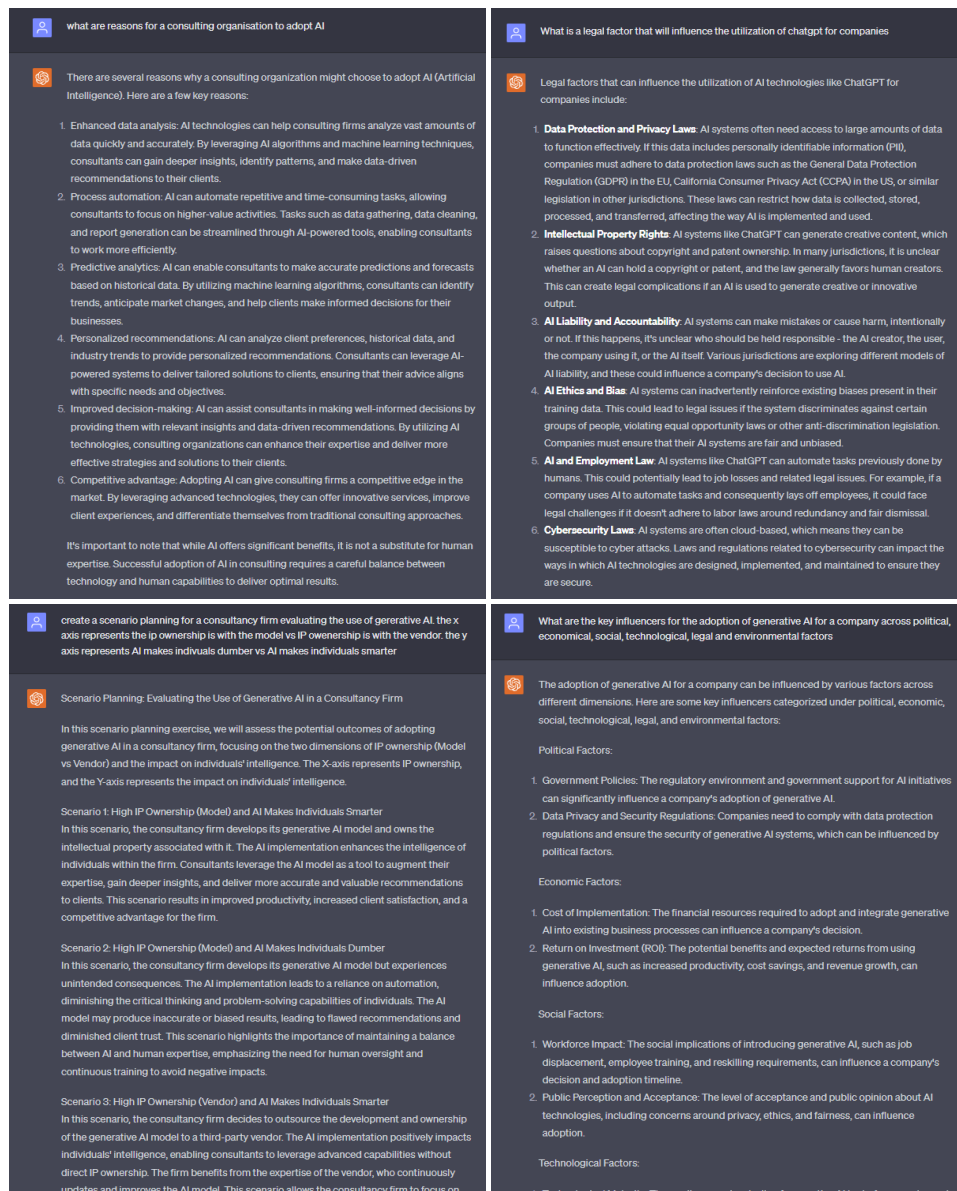


Figure 23: Examples ChatGPT prompts workshop 3 (07-07-2023)

At the end of this stage, each participant had a number of sticky notes in front of them, displaying the factors they had generated. When the time was up, the facilitator asked if they could focus at the workshop again and advised them to close their laptops to minimise potential distractions.

- 14:30 – 14:45 Discuss driving factors

After individually writing down the factor, the participants were instructed to present their sticky notes to the remaining participants. The presentations occurred in sequential order, starting with participant 1 and concluding with participant 6. Each participant explained the factor in a few sentences, and the affixed the sticky note onto the board in the appropriate category within the PESTLE-analysis. Throughout the presentations, similar factors were clustered to gather to enhance subsequent phases of the workshop. The ambiance during the presentations was lively, with participants exchanging quick jokes and sharing anecdotes. Occasionally, participants requested clarifications such as when Participant 2 inquired: “*What do you mean with data hallucinations?*” (Participant 2, Workshop, 7 July 2023). Once every participant had presented their factors, this stage concluded with the scheme depicted in Figure 24, the original picture can be found in appendix E1.

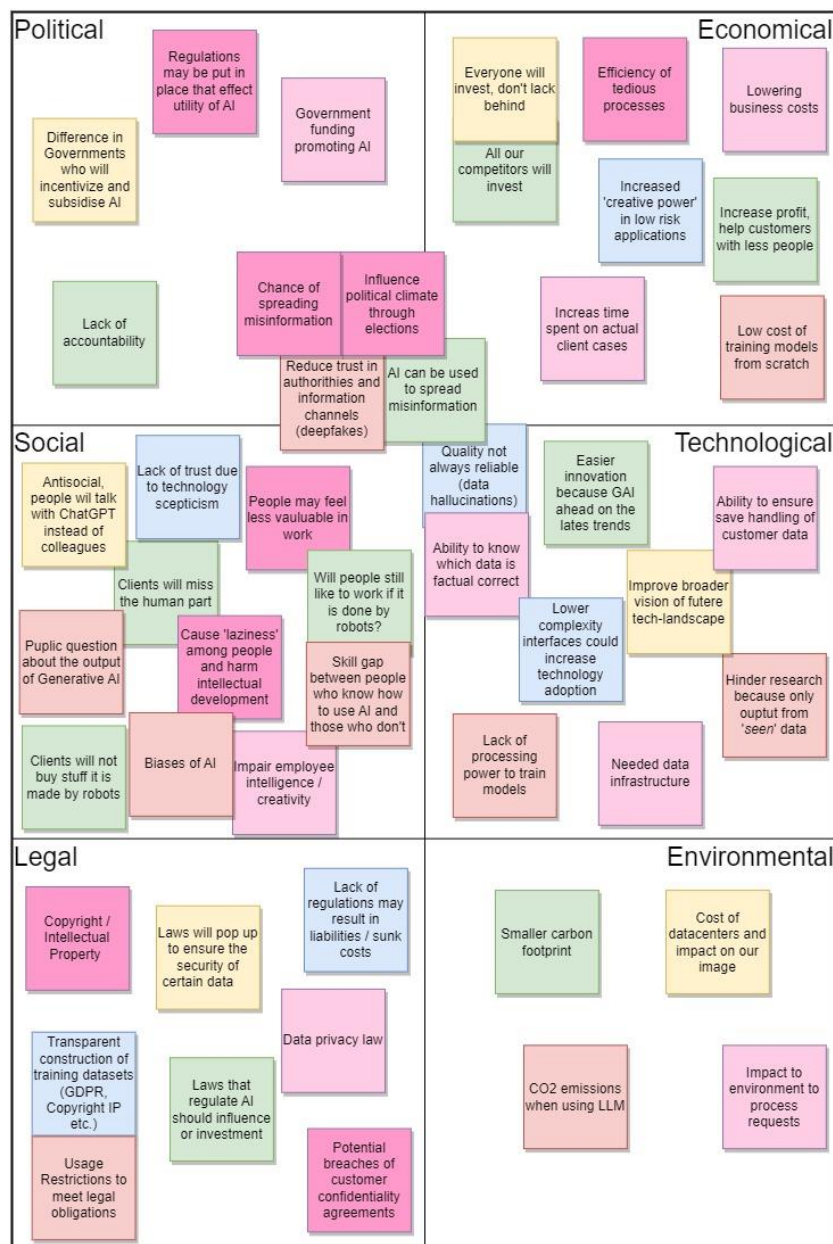


Figure 24: PESTLE-analysis workshop 3 (07-07-2023)

In the end the participants created 48 sticky notes, each of which included a factor, and the participants had a joint understanding of the factors on the board. Some of the variables were similar and can be seen grouped together, but none were entirely identical.

○ 14:45 – 14:55 Prioritise driving factors

At the beginning of this stage each participant received 10 dot stickers per person. These 10 stickers consisted of 5 red stickers and 5 blue stickers. The red stickers indicated the impact of the factor, and the blue stickers indicated the uncertainty of a factor. The participants had the opportunity to individually vote on which factors they believed had the highest impact or uncertainty. The facilitator said to the participants that they should keep the following question in the back of their minds: *“Which factors have the highest impact on the success of Generative AI and the adaptation of Generative AI and which factors are the most uncertain or the most unpredictable on the success and adaptation of Generative AI?”* Prior to the start of the voting process the participant explained what the subsequent steps that would be taken with the factors that received at least one sticker. The facilitator would create the impact-uncertainty matrix based on the outcome of the dot voting process, and only factors which received at least one vote would be included in the matrix. Every participant voted individually on the factors, resulting in the scheme shown in Figure 25.

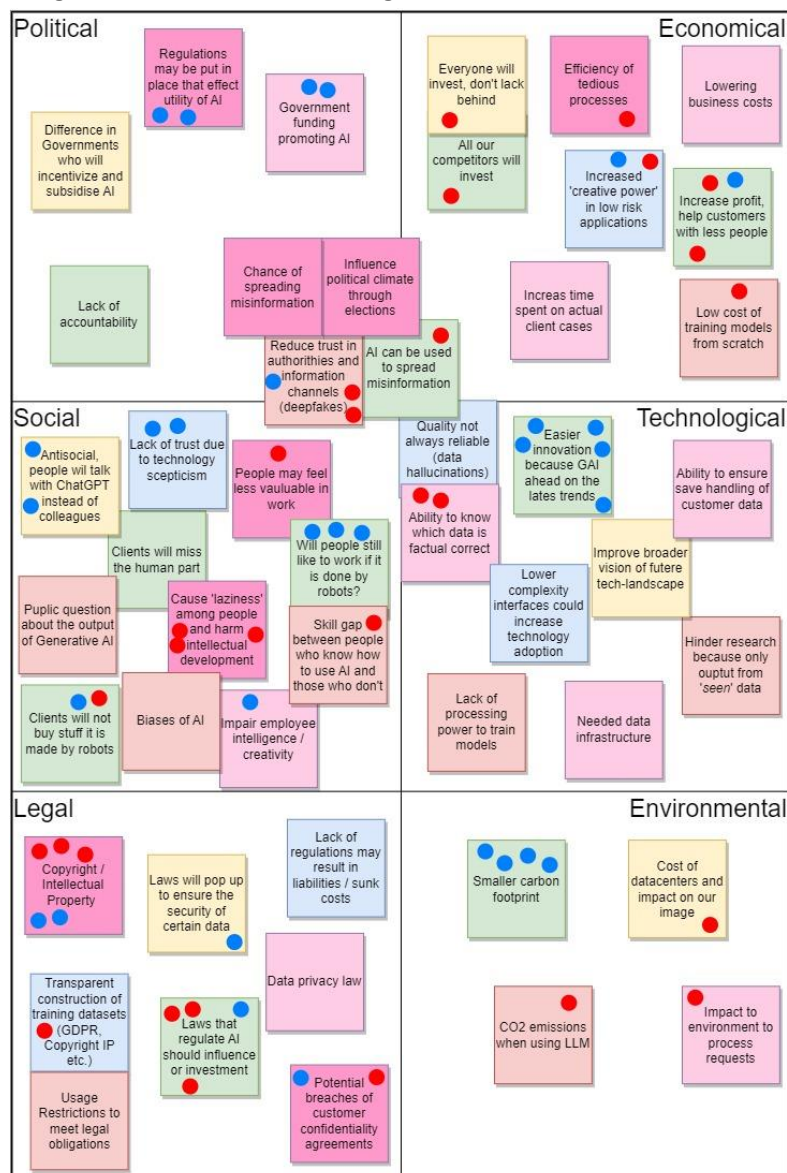


Figure 25: Prioritised factors workshop 3 (07-07-2023)

Following the distribution of stickers, the participants were invited to approach the board with the PESTLE-analysis to engage in the voting process for the factors. Due to the limited space in front of the board, not all the participants were able to stand before it simultaneously, resulting in a crowded area. In the end participants had to wait their turn until others finished casting their votes before taking their turn. The facilitator informed the participants that once they had allocated their 10 votes, it would be time for a break, which they could immediately take unless they had any questions.

During the voting process, participant 5 had a question on how to vote on the clustered factors. The facilitator explained that it did not matter which sticky note within the cluster received the vote, as the entire cluster would be considered as a single factor during the subsequent phase of the workshop. Participant 3 inquired whether it was possible to assign multiple stickers of the same colour to a single factor. The facilitator responded that the participants were restricted to only using one sticker per colour per factor. However, participants could assign both high impact and a high uncertainty to a factor by assigning it a red and a blue sticker respectively. As the participants voted, some of them had difficulty remembering which colour sticker corresponded to impact or uncertainty, necessitating the facilitator to direct them to the presentation on the screen where a legend was displayed. In the end, a total of 30 blue stickers and 29 red stickers were affixed. All available blue stickers representing 'uncertainty' were allocated, while there was a shortfall of one red 'impact' vote.

○ 14:55 – 15:05 Break

During the break, the facilitator reviewed the PESTLE-analysis and took all the factors that had received at least one vote. Subsequently, the facilitator used these factors to create an impact-uncertainty matrix based on the number of votes received, this proved some challenges due to some clusters not being clearly distinguishable. The purpose of the impact-uncertainty matrix is to identify critical scenario drivers (Maack, 2001). Factors that did not receive any votes are not included in the matrix but would have been placed in the bottom left corner, indicating very low impact and very low uncertainty according to the participant. Factors that received the same number of votes were grouped together. The created impact-uncertainty matrix is presented in Figure 26 with the original displayed in the appendix E2.

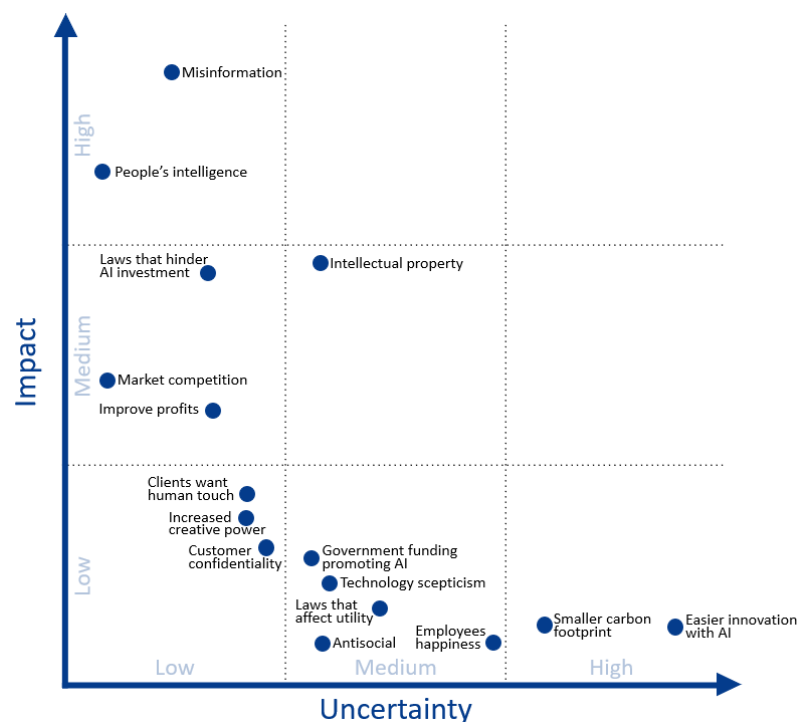


Figure 26: Impact-uncertainty matrix workshop 3 (07-07-2023)

- 15:05 – 15:15 Select two critical driving factors

Upon their return from the break, the participant saw the created impact-uncertainty matrix. Prior to the selection of the two critical driving factors, the facilitator explained what he had done during the break and how the impact-uncertainty matrix was constructed. The matrix was categorised by placing the factors into the areas of 'low', 'medium', or 'high' levels of impact and uncertainty. Factors were placed in the low area if they received a single vote, into the medium area if they received 2 or 3 votes, and in the high area if they secured 4 or 5 votes. In the final matrix, no factors were identified that had both high impact and high uncertainty. As a result, according to Maack (2001), there are no critical driving factors present. However, two factors fall not the category of critical planning issues with high impact and low uncertainty.

When the participant entered the room the complimented the facilitator on the looks and structure of the created matrix. After all the participants took their seats, the facilitator explained the purpose of the impact-uncertainty matrix and what it represents. Afterward he explained that two factors would be selected which will be used in the remainder of the workshop. This announcement led to a significant discussion between the participants on the factors to be selected.

During the discussion of the factors, the potential axes to be created for the 2x2 matrix were also taken into consideration. At the start, participant 4 recommended the Misinformation factor because it received the highest number of votes for impact. However, participant 2 found it challenging to come up with scenarios using this factor, given the difficulty of determining the impact of fake news. Subsequently, the discussion shifted towards Intellectual property and the liability associated with AI generated content, and a consensus quickly emerged among all participant on including this factor as one of the two critical driving factors. This was followed by a discussing regarding the second factor to be selected. The factor which received the highest number of votes for uncertainty was deemed uninteresting to include by the participants. The conversation transitioned into whether AI makes individuals smarter or dumber. Participant 2 pointed out that there was a factor associated with this consideration, namely whether AI makes people lazier. Two participants expressed that they already interpreted this a factor as implying that AI makes people "dumber". As a result, this factor was chosen as the second critical driving factor. In the end, all the participants agreed on the selected factors of "Intellectual Property" and "People's intelligence".

- 15:15 – 15:20 Create 2x2 matrix

During the process of selecting the factors, there was already a discussion about the extremities that should be placed on the axes of the 2x2 matrix. The factor that was placed on the vertical axes, namely "Intellectual Property", encountered minimal debate. The participants quickly reached a consensus that on one end, the accountability of the model rests with the model user, and on the other end, the accountability rests with the model supplier. Participant 6 made an interesting observation, highlighting the potential for KPMG to find itself on both end of the spectrum if the organisation

decided to develop its own model. In contrast, the discussing regarding the horizontal axis, with “People’s intelligence”, proved a lengthier discussion. Although the factor itself was clear for the participant, the discussion focused on the concept of intelligence and how AI would impact. Specifically, if people were becoming less intelligent, or were becoming better specialised and AI took over repetitive and mundane tasks. After a thorough discussion the facilitator guided them to get to a consensus. During the discussion the participants were already outlining potential scenarios, and eventually decided to adopt the extreme of AI making people dumber and AI making people smarter. Through the discussion, the participant collectively developed a shared understanding of the intended meaning behind “dumber” and “smarter”. This stage ended with the creating of the following matrix, illustrated in Figure 27, with the original matrix included in appendix E3.

- 15:20 – 15:40 Creating the scenarios

The group was divided into two subgroups by the facilitator, with participants 1,2, and 3 assigned to Group A and participants 4,5, and 6 in Group B. Each group was tasked with generating two scenarios located in the opposing quadrants of the 2x2 matrix. Group A was tasked with creating scenarios 1 and 4, while group B created scenarios 2 and 3. The participants were instructed to create a vivid image of the future for each scenario, paying specific attention to the key issues and the assumptions made. As well as looking at other relevant factors such as: stakeholders, risks and opportunities, implications and consequences and potential triggers. The facilitator provided a time limit of 8 minutes per scenario and that the facilitator would indicate when it was time to move to the next scenario. During the creating of the scenarios the participants noted that the scenarios naturally emerged within the framework established by the axes. Due to the extensive discussion, there were no ambiguities about the axes among the participants. During the creating of the scenarios participant 3 left for 2 minutes to take a phone call.

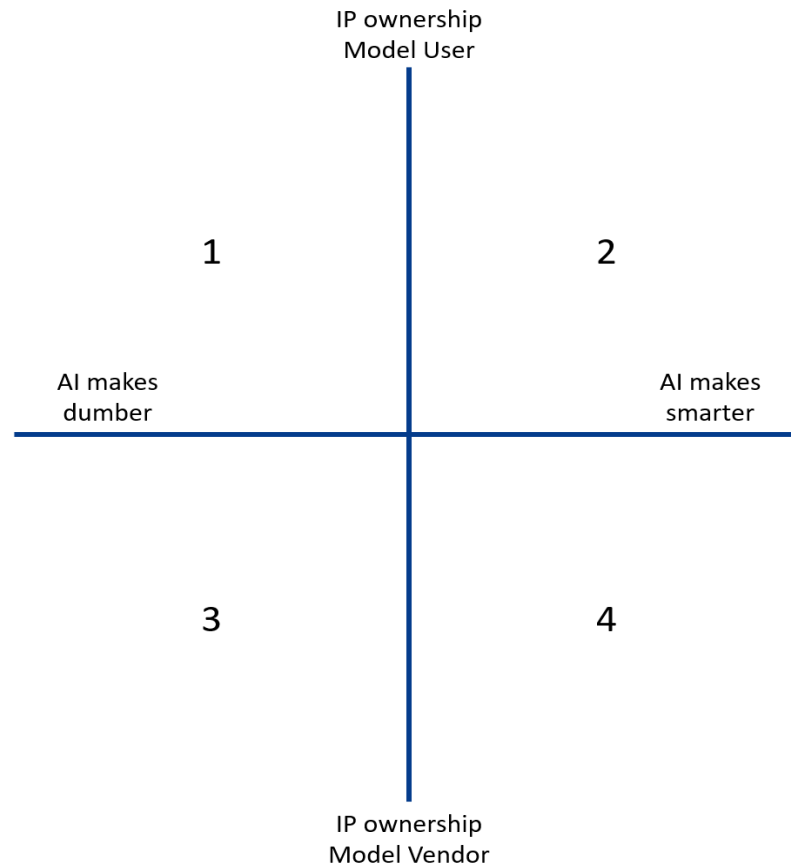


Figure 27: 2x2 matrix workshop 3 (07-07-2023)

What was notable from the start of the exercise was that all six participants immediately took out their laptops and focused on engaging with ChatGPT and creating relevant questions. After three minutes passed without any discussion among the groups, the facilitator intervened, pointing out that a substantial portion of the allocated time had already elapsed, and nothing had been written down. The facilitator emphasised that the participant could discuss the scenarios and ideas among themselves. Following this interruption, four out of the six participants closed their laptops and moved to brainstorming together about the scenarios. The other two participants kept their laptops open but joint de discussion. When the facilitator announced that it was time to move on to creating the second scenario, none of the participants reopened their laptops to consults ChatGPT. Instead, the participants continued conversing and discussing the various assumptions, stakeholders, and the key issues of the scenario among the other participants of their group, without using ChatGPT. As a result, scenarios 1 and 2 were created with the support of ChatGPT, but ChatGPT did not support the groups for scenarios 3 and 4. Figure 28 displays the created scenarios, the full scenarios are included in appendix [E4](#).

Scenario Template

Scenario 1.

Participant: *[Handwritten signature]*

- Model user owned X AI makes us dumber
 - ↳ Liability of user when mis-information is provided → this will be more likely as the critical/cognitive ability will be lower. Thus, if KPMG adopts this, it will create a major risk overhead. Risks for employees.
 - ↳ Because people ~~thinking~~ become more lazy, adoption and use will increase. More liability claims could come from it. And AI will hallucinate different ideas to different people, which will increase number of conflicts.

Scenario Template

Scenario 3

Participant: 3

Copyright by the vendor means that KPMG will develop its own model and ~~users~~ people will create it while being less capable of determining if the output is valuable. Reliance on centralised control ~~and~~. Increase reputation risks. Reduce the use case to very specific ~~attempts~~ use cases. Large value of bounded model capable of reliable outcome especially if people are less capable to assess the result. People will be dependant and Knowledge will be owned by the few companies making models.

Anthropocentric
Human-centric

Scenario Template

Scenario 2

Participant: 3

Generative AI gives a good baseline for a new one to start a task. You got the ownership, what makes you more concise, responsible and responsible for your output → make you more engaged and therefore smarter due to this pressure to deliver quality. KPMG workforce is more independent and more engaged. Assume @ KPMG can deliver good quality work with little training. Increase massively the company throughput. Human-centric future as the relationship development and the client relationship becomes the differentiable factor.

Scenario Template

Scenario 4

Participant:

Model
Vendor owned X AI makes smarter.

- To have the IP, there is likely high costs in order to own the IP or knowledge. Meaning that the use of AI, and the ~~user's~~ ability to make a company/people smarter, will remain only to an elite group of companies/people.
- Likely that companies or people will protect their data/information from being used for model training. This would have diminishing returns on "AI making people smarter".

Figure 28: Created scenarios workshop 3 (07-07-2023)

- 15:40 – 15:50 Discuss scenarios

The activity commenced with the participants presenting and explaining the scenarios to the other participants and the facilitator. Group A, consisting of participants 1 to 3, started by explaining scenario 1, followed by an explanation of scenario 4. Then, group B, comprised of participant 4 to 6, began with explaining scenario 2, following by an explanation of scenario 3. The participants came up with names for the scenarios during the presentation process, which were utilised in addition to their number designations to set them apart. Table 7 below lists the scenario's names along with the related axes:

Scenario	Title	x-axis	y-axis
1	Facebook effect	AI makes dumber	IP ownership Model User
2	Human centric	AI makes smarter	IP ownership Model User
3	Copywrong	AI makes dumber	IP ownership Model Vendor
4	Knowledge inequity	AI makes smarter	IP ownership Model Vendor

Table 7: Overview created scenarios workshop 3 (07-07-2023)

During the presentation, there was the opportunity for reactions and feedback from the remaining participants. During the presentations, a constructive atmosphere developed, with participants offering compliments and additions to the scenario's presented. For instance, Participant 3 summarised their perception of scenario 1: *"So in summary basically a shift right, from ideation and conceptual innovation to more validation"* (Participant 3, on scenario 1, workshop 7 July 2023). Participant 2 acknowledge the value of scenario 3 by stating: *"The dependence on the company, that's a very good one, I didn't think of that"* (Participant 2, on scenario 3, workshop 7 July 2023). Moreover, the participants posed clarifying questions: *"So your output will become more of a hygiene factor and about the relationship side?"* (Participant 3, on scenario 2, workshop 7 July 2023).

- 15:50 – 15:55 individually rank scenarios

After the deliberation on the scenarios, the facilitator provided the participants with paper templates to complete the impact-likelihood matrix. Each participant was tasked with individually ranking the four created scenarios. After the distribution there were no questions raised by the participants, and they immediately begin the process of filling out the matrix. Upon the completion of their own matrix, participants 1 and 2 engaged in a comparison of their completed matrices and they observed that they had significant overlap in their ranking. Meanwhile, the remaining participants were still in the process of completing their matrices.

- 15:55 – 16:10 Final impact-likelihood matrix

Following the completion of the individual impact-likelihood matrices by each participant, the objective was to collectively construct a final impact-likelihood matrix incorporating input from all individual matrices. The facilitator presented a large impact-likelihood matrix on the flipboard and asked one participant where they had placed a specific scenario. Subsequently, other participants were given room to respond on the initial placement and engage in a discussion. After every participant had been given the opportunity to express their opinion, a group consensus had to be reached on where to rank the scenario. These steps were repeated for the remaining three scenarios. Ultimately a final impact-likelihood matrix was created, reflecting a consensus among all participant regarding the positioning of the scenarios. This matrix is presented in Figure 29, with the original matrix included in the appendix E5.

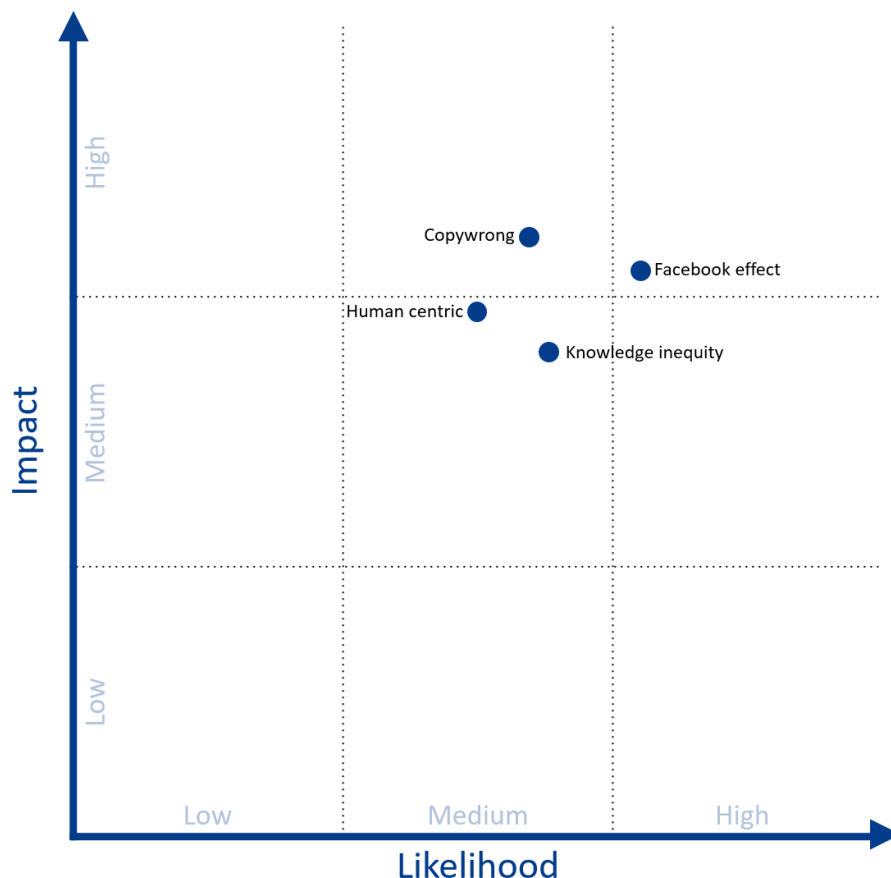


Figure 29: Impact-likelihood matrix workshop 3 (07-07-2023)

During the discussion of the placement of the first scenario, a debate emerged on how people had ranked and interpreted the likelihood, with participants 1 and 2 noting that they already believed people’s cognitive abilities are currently being impaired by technology. As a result, they assigned higher rankings on the likelihood scale to both the scenarios wherein AI makes people dumber, as they argued that this is already occurring. Although consensus regarding the placement of the scenarios was reached quickly, considerable discussion ensued around whether AI truly makes people dumber and what ‘dumber’ exactly means. However, this was more due the participants’ curiosity rather than its relevance to the placement of the scenarios. At a certain point, the facilitator decided to conclude the discussion as it was time to proceed to the next stage. Notably, throughout the proceedings of the individual impact-likelihood exercises, no participants had their laptop open or utilised ChatGPT.

○ 16:10 – 16:15 Answer key question

With the final impact-likelihood matrix displayed on the board, the Facebook effect scenario appeared to be the most impactful and likely according to the participants. Within this context, the participants revisited the key question and explored potential strategies for KPMG.

Firstly, KPMG should minimise the risk of AI making people dumber by ensuring a minimal level of quality in its output. Additionally, the distribution of liability should never rest on the shoulders of the employees. All the participants agreed that Generative AI provides value by streamlining the creative process and enabling a greater focus on building personal relationships with clients. Furthermore, it was deemed wise to invest as soon as possible to prevent lagging behind competitors. As participant 6 expressed: *“The best time to plant a tree was 50 years ago, the second-best time is now”*. Ultimately, it was decided that KPMG should invest in the discussed strategies while actively mitigating the identified risks associated with liability while also providing training to employees to enhance their customer relationship management skills.

- 16:15 – 16:25 Complete questionnaire

After answering the key question, the facilitator distributed the questionnaire on paper and asked the participant to complete it individually. During the distribution, participant 6 humorously inquired if they could use ChatGPT to fill out the questionnaire, but the facilitator informed them that it was not allowed. Subsequently, participant 5 asked if they could also complete the questionnaire in Dutch, to which the facilitator responded affirmatively. After these questions the participants began filling out the questionnaire. After participants 1 and 4 had finished completing the questionnaire, the facilitator announced that after participants had completed the questionnaire, they were free to leave because the workshop had ended.

- 16:25 – 16:30 Thank you & Closing

After the announcement that the workshop had concluded, the participants gave the facilitator a brief round of applause, and several participants expressed their appreciation for the structure, preparation, and overall flow of the workshop.

The facilitator expressed his gratitude for the participation of the participants and their involvement throughout the workshop. Afterwards, a few participants stayed behind engaging in further discussions regarding the covered topics, while the facilitator cleared away the utilised frameworks and writing materials.

Workshop Evaluation

This section provides a reflective analysis of the workshop's proceedings and results, with a focus on the key takeaways and areas of improvement. This section is divided into two subsections: one presenting the participants' perspective, gathered through the completed questionnaires and observations and the other exploring workshop-specific learnings and insights from a facilitators' viewpoint.

Questionnaire Results

This subsection presents the results of the questionnaire. All six present participant completed the questionnaire. The questionnaire template can be found in appendix B5. The questionnaire consisted of open-ended questions and statements that were answered on a 5-point Likert scale. In the questionnaire for this workshop, specific questions concerning ChatGPT were included because one participant utilised ChatGPT as support during the workshop. Initially, we will review the results of the open-ended questions, followed by an exploration of the statements and ending with the results of the questions about ChatGPT.

Workshop Experience

The participants indicated that they had fun during the workshop and expressed their satisfaction with the workshop's structure. One participant summarised their perspective: *"The workshop was well structured, and I enjoyed the journey of ideation and prioritisation with the group"* (participant, remark in questionnaire). The overall remarks illustrate the participants positive experience of the workshop. One of the participants noted: *"The varying methods of brainstorming and collaboration, such as working in groups and individually were very effective"* (participant, remark in questionnaire). Another participant stated, *"The use of post-its and stickers facilitated a creative thinking process and encouraged active participation in the workshop"* (participant, remark in questionnaire). All participants expressed their willingness to hold this workshop again within the organisation. One participant provided the following reason: *"The workshop helped us develop a strategy and with discussing what is happening in the world around us"* (participant, remark in questionnaire).

Method

Two participants had prior experience with a scenario planning method but mentioned that they had only focussed on the scenario creation without going through the preparatory steps implemented in this workshops design. The participants appreciated the structure the scenario planning provides and the framework that helped facilitating meaningful discussions. One participant stated: *"Scenario planning is a good way to critically think about a subject with a multitude of questions"* (participant, remark in questionnaire). Another participant mentioned that scenario planning helped him with thinking outside the box when searching for answers. Other participants found the creation of scenarios based on critical driving factors to be very positive and prove guidance: *"You think about the extremes, which provides a broader perspective and could lead to strategic considerations"* (participant, remark in questionnaire) and *"Exploring specific directions, based on selected scenarios allows for an in-depth analysis of these scenarios"* (participant, remark in questionnaire).

However, limitations of scenario planning were also indicated by the participants. One participant mentioned: *"You assume four scenarios that are quite extreme, which means you could overlook important aspects"* (participant, remark in questionnaire). Another participant made a similar point, stating: *"You only really focus on two axes in much detail"* (participant, remark in questionnaire), a third participant expressed: *"As with any model, scenario planning has its own boundaries that can potentially restrict our human creativity"* (participant, remark in questionnaire), while a fourth participant noted: *"When creating the scenarios, we only looked at a limited number of influential factors, in our case two"* (participant, remark in questionnaire). Four out of the six participants

remarked the restriction that occurred with only selection two factors, from the extensive list of identified factors during the PESTLE-analysis. Selected only two factors for a 2x2 matrix is a fundamental step in the scenario planning process, but the limitation could be addressed by conducting the second part of the workshop more frequently, allowing for the selection of different factors and creating scenarios with different boundaries.

Figure 30 illustrates the participants’ evaluations of the statements. The statements can be categorised into two sections. The first two statements address the insights gained in the workshop, while the other eight statements focus on the workshop’s structure and compositions. The horizontal axis represents the number of experts that voted.

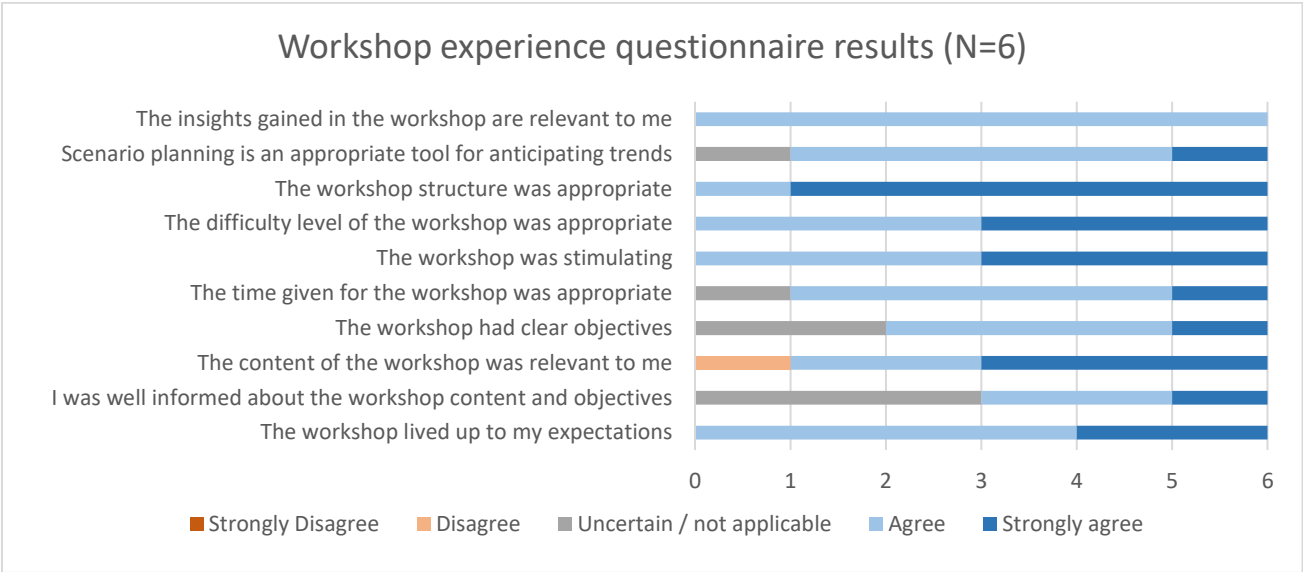


Figure 30: Workshop experience questionnaire results workshop 3 (07-07-2023)

The outcomes of the workshop’s statements were positive. The only statement that one participant disagreed with was: ‘The content of the workshop was relevant to me’. The participant expressed a lack of personal involvement with Generative AI and did not believe that KPMG would use Generative AI, so although he found it interesting to brainstorm about Generative AI it ultimately would not make a difference. Moreover, the participants were highly satisfied with the workshop’s structure, particularly how it was facilitated during the discussion and the comprehensive explanation of each step along with the implications of certain choices the participants had to make.

ChatGPT

The responses obtained from the questionnaire aligned with the discussions held and how the users engaged with ChatGPT during the workshop. Participants used ChatGPT more frequently at the start of the workshop, but the usage dwindled as the workshop progressed to later stages. In general, participants made limited use of ChatGPT's support during the workshop, as exemplified by one participant's remark: *"I used ChatGPT only once at the start, so almost everything was originally created by me"* (participant, remark in questionnaire). Participant described the support of ChatGPT as more of a 'nice to have' saying things like: *"Interesting but nothing ground-breaking"* (participant, remark in questionnaire) and *"It was good but not critical, we could have gone without the use of ChatGPT"* (participant, remark in questionnaire). Some participants expressed even stronger reservations and expressed their desire to exclude ChatGPT from future workshops stating: *"I think it should be banned because a workshop is meant for human brainstorming and discussions"* (participant, remark in questionnaire).

Despite the reservations, many participants acknowledged that ChatGPT provided support during the workshop. Mentioned advantages are: *"Providing different perspectives and insights to critically reflect on my own thought process"* (participant, remark in questionnaire) and the role of ChatGPT as an *"additional source of contact which is great to spearhead some ideas on when stuck"* (participant, remark in questionnaire). Several participants highlighted that ChatGPT's aided in creativity and generated ideas and new input across a broad spectrum.

On the other hand, participants were critical of the use of ChatGPT. They frequently observed that the use of ChatGPT led to diminishing discussions among participants. Using ChatGPT also led to reduced personal input illustrated by the following statements from participants: *"It is easy to use, making it tempting to stop thinking for yourself"*, *"Using ChatGPT blocks your own thoughts because you have a laptop at your disposal"* and *"It reduces originality from a human perspective"* (participants, remarks in questionnaire). Additionally, the participants emphasised the importance of selecting appropriate prompt when using ChatGPT, as the answers occasionally appeared to be repetitive and generic.

The questionnaire included additional statements about the usage of ChatGPT, the results are presented in Figure 31.

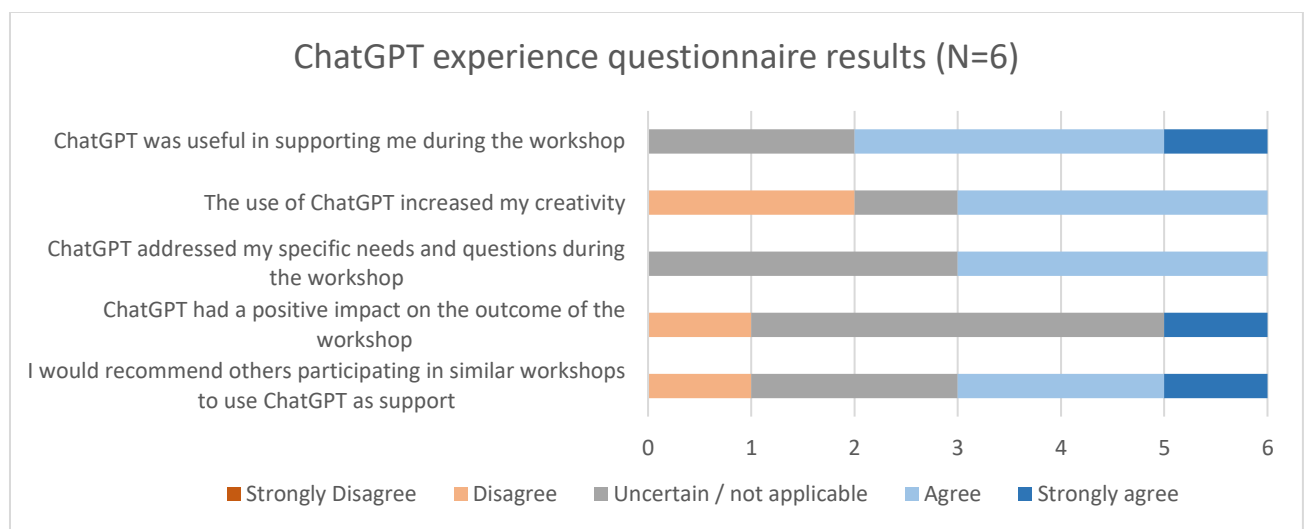


Figure 31: ChatGPT experience questionnaire results workshop 3 (07-07-2023)

The statements indicate that in general participants found ChatGPT useful in supporting them during the workshop. However, two participants did not find it beneficial in enhancing creativity. One participant articulated his reason for disagreeing with the statement *"It did not increase my creativity, but it replaced my creativity"* (participant, remark in questionnaire). This was a recurring observation among the participants. They highlighted the challenge in optimally utilising ChatGPT as support during the workshop, with the usage swinging back and forth between over-reliance on ChatGPT or barely using it.

During discussion in the workshop, ChatGPT struggled to keep up with specific questions asked by the participants. However, its contribution to scenario creation and factor identification was appreciated by the participants. In the end participants remained uncertain about ChatGPT's impact on the workshop outcomes. Despite the uncertainty the participants exhibited a positive view of its overall support during the workshop. These statements indicate that the participants believe that the workshop's results would have been similar with or without the support of ChatGPT. This is summarised in the following *"It was good but not critical and we could have gone without it"* (participant, remark in questionnaire). Notably, one participant firmly opposed the use of ChatGPT as support in future workshops, stating: *"I didn't use it much, and thus feel neutral about my overall experience. I found the workshop stimulating without it at thus would rather not use it in the future"* (participant, remark in questionnaire).

Overall, the results from the statements and the questionnaire do not give a definitive answer concerning the added value of the support of ChatGPT during a workshop. While most participants acknowledged ChatGPT support during the workshop, it did not consistently aid in the creativity of the participants, and in some cases may even have hindered participants' creativity. Additionally, half of the participants would recommend using ChatGPT in future workshops, whereas the remaining participants expressed uncertainty regarding its added value. Overall, the participants exhibited hesitancy about the utilisation of ChatGPT during the workshop. One participant offered the following recommendation about a nuanced approach to ChatGPT utilisation: *"I would suggest using ChatGPT prior to the workshop to delve deeper into the subject at hand and be better prepared. During the workshop, use it only for generating factual information, but prohibit the use of laptops during discussions as this doesn't lead to any advantages"* (participant, remark in questionnaire). This recommendation encapsulates the questionnaire's findings effectively.

Workshop-specific learnings and insights

A workshop with six participants turned out to be productive and efficient from the facilitator's point of view. Due to the small group size, everyone was able to actively participate and express their opinions. However, even with six participants some people were more reserved in their contributions than others. It was interesting to note that when the group was divided into subgroups of just three people during the scenario creation phase, individuals who were originally quieter became more vocal. This suggests that adding more participants would not significantly enhance the quality of the workshop because not everyone would be able to give their opinion. Consequently, this implies that the maximum number of participants to conduct this workshop, ensuring everyone has sufficient time to express their opinions and staying within the designated time frame, is six participants.

Another noteworthy finding was the limited usage of ChatGPT throughout the session. Its usage was mostly restricted to the stages of factor creation and scenario creation. However, during the scenario creation phase, the participant stopped discussing among themselves and only utilised ChatGPT. After a long silence the facilitator intervened and encouraged the participants to engage in a discussion with the other participants. Following this intervention almost all the laptops closed and ChatGPT was not used for support for the other phases of the workshop.

4.4 Evaluating

This chapter aims to reflect on the research process and the obtained results. The first section will summarise all the questionnaire results of the workshops and highlight key aspects across the workshops. The second section concentrates on evaluating the barriers and benefits associated with integrating ChatGPT into the scenario planning workshop based on participants' responses and observations in the workshop. The third section establishes a connection with existing literature and examine general lessons that can be derived from the research. Finally, potential limitations of the research will be discussed.

4.4.1 Cross-workshop results

A total of 14 participants participated the workshops, distributed across 3 sessions. The workshop experience questionnaires of the workshops have been combined in Figure 32 below. The most notable results are evaluated.

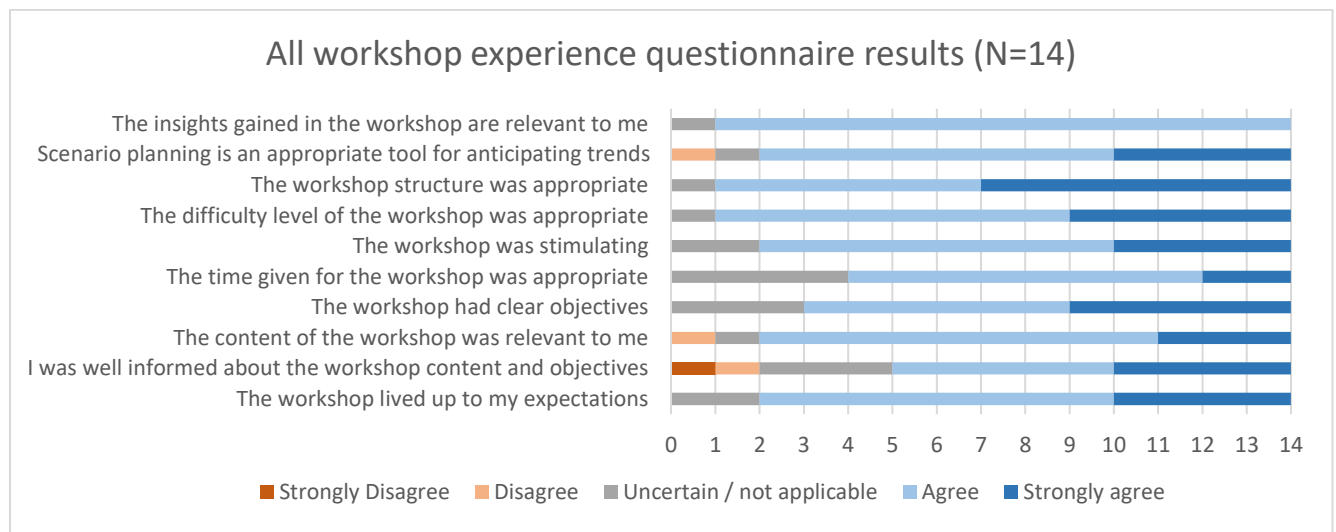


Figure 32: All workshop experience questionnaire results

In general, all participants expressed satisfaction with the execution of the workshop. The ambiance during the workshops was pleasant throughout, and the facilitator received numerous compliments for the workshops' structure and execution. The most notable results of the questionnaire are statements where participants disagreed or strongly disagreed, these will be briefly addressed.

During the first workshop one participant disagreed with the statement that scenario planning is an appropriate tool for anticipating trends. The participants explained that he did consider scenario planning an appropriate tool for elaborating on trend but not for the selection of trends. At the third workshop one participant disagreed with the statement that the content of the workshops was relevant. The participant expressed a lack of personal involvement with Generative AI and did not believe that Generative AI would be used in the organisation. During the second workshop two participants disagreed with being well informed about the workshop content and objective. The reason given was that they did not read the invitation mail which included information about the content and objective of the workshops. Overall, the participants were satisfied with the workshop, suggesting its potential for further implementation in the organisation as a method for technology forecasting.

In Figure 33 illustrated below all the statements about the experience of using ChatGPT during the workshop are merged.

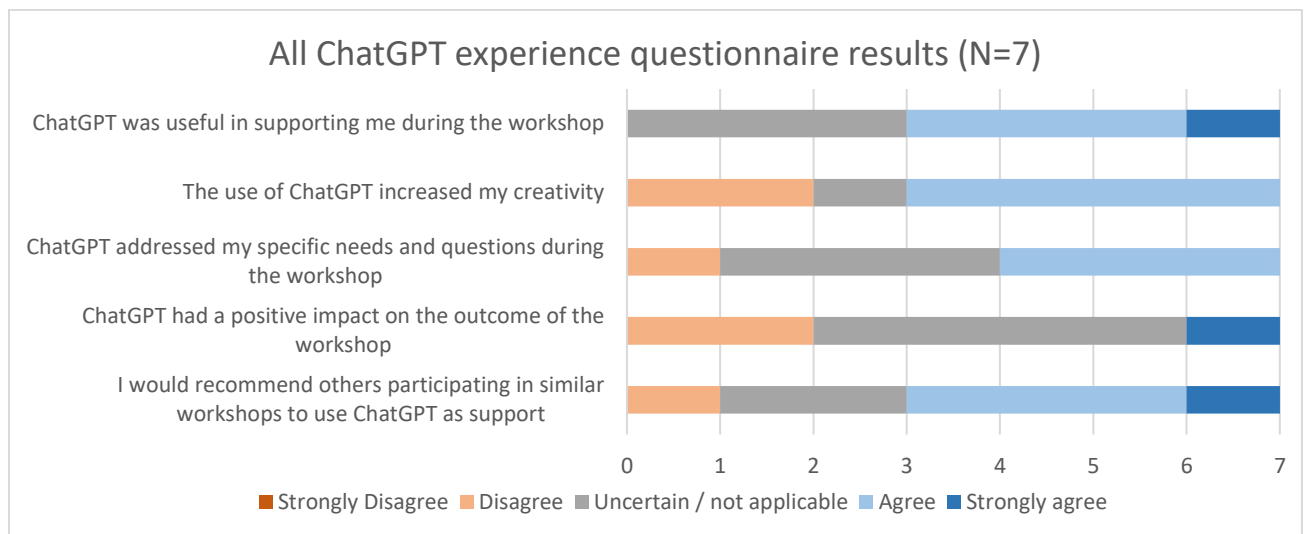


Figure 33: All ChatGPT experience questionnaire results

The results regarding the utilisation of ChatGPT during the workshop are mixed. Participants appear to agree on the usefulness of the support of ChatGPT during the workshop. However, the participants are unclear about ChatGPT having a positive influence on the workshop's outcomes. This sentiment aligns with a participant's remark, indicating that the same workshop's results could have been reached without the support of ChatGPT. In the end, participants do recommend the use of ChatGPT in similar workshops

4.4.2 ChatGPT as support for scenario planning

This section discusses the barriers and benefits associated with employing ChatGPT to support scenario planning as a technology forecasting method.

Barriers to using ChatGPT to support scenario planning

Reducing personal thinking. Access to ChatGPT can promote overall creativity, but at the same, it may reduce personal creativity *“It did not increase my creativity, but it replaced my creativity”* (participant, remark in questionnaire, workshop 3). When participants have access to ChatGPT, there is the risk of excessive reliance on its support, which can lead to a decrease in their own creative thinking *“It is easy to use, making it tempting to stop thinking for yourself”* (Participant, remark in questionnaire, workshop 3). Rather than enhancing their creative process, ChatGPT may begin to replace it, resulting in a dependence on the generated responses rather than self-generated ones *“ChatGPT distracts you and reduces your own thinking process because you expect ChatGPT’s answer to be better”* (participant, quote in workshop, workshop 2). Consequently, the utilisation of externally generated AI content could lead to a reduction in personal thinking and human innovative problem-solving, limiting the effectiveness of the workshop.

Reliability of the answers. Several participants identified the reliability of ChatGPT’s answers as a disadvantage. Unlike human participants, ChatGPT lacks the ability to clearly specify the sources of information for its responses. This lack of transparency could lead to doubts about the credibility of ChatGPT’s answers among the participants. The uncertainty surrounding the origin of ChatGPT’s answers could undermine the credibility of the technology as a dependable supportive tool for scenario planning.

Distraction. A barrier of utilising ChatGPT in scenario planning workshops is the potential distraction caused by participants heaving a laptop in front of them during the workshop. Having laptops present can lead to distractions from incoming notifications and tempt participants to multitask, leading to a diversion of their attention from the brainstorming during the workshops. Particularly during the generation of prompts for ChatGPT, participant can encounter difficulties in remaining engaged in the discussions. *“When trying to use ChatGPT, I missed the discussion because I was focusing on the prompts”* (participant, remark in questionnaire, workshop 2). The distraction caused by ChatGPT can reduce the effectiveness of the support of ChatGPT in the context of scenario planning.

Joining discussions and complex questions. An obstacle to using ChatGPT as support in scenario planning is its lack of active participation in discussions or the brainstorming process during the workshop as stated by a participant: *“it could not follow the pace of the discussions”* (participant, remark in questionnaire, workshop 2) ChatGPT’s strength lies in providing answers to simple questions, but it falls short when aiding with complex questions. *“Only useful during simple questions not able to utilise later in the workshop”* (participant, remark in questionnaire, workshop 3). The limited ability to contribute to discussions hinders its effectiveness as a supportive tool for scenario planning, especially when dealing with complex and multifaceted topics that require extensive discussions.

Benefits of using ChatGPT to support scenario planning

Increase creativity. An important advantage of using ChatGPT as support during scenario planning lies in its potential to enhance participants' creativity. By utilising the data and knowledge resources at its disposal, ChatGPT is able to offer diverse perspectives on future scenarios, encouraging participants to explore new ideas and innovative approaches. *"ChatGPT gives a lot of different perspectives"* (participant, remark in questionnaire, workshop 3). Furthermore, ChatGPT serves as a valuable tool for generation factual information, contributing to the quality of discussions and enhancing the factors considered during the workshop. The wealth of knowledge inside ChatGPT provides participants with a solid foundation to validate and refine their ideas. The rapid and efficient generation of suggestions was frequently given as an advantage of ChatGPT, as it contributed to the advancement of the scenario planning process. In essence, the creative contribution of ChatGPT in scenario planning can yield novel insights and expand the scope of participants' discussion and ideas, making it a valuable addition to the scenario planning toolkit.

Less dependent on experience of participants. The utilisation of ChatGPT as support for scenario planning leads to a decreased reliance on the participants' experience. In scenario planning workshops having a certain level of expertise in the workshops' subject is beneficial for participants to effectively contribute to the workshop. Through the support of ChatGPT, participants can prepare for the workshop or utilise ChatGPT during the session, ensuring that all participants have at least a minimum level of knowledge of the Workshop's subject through knowledge of ChatGPT. By facilitating this knowledge, ChatGPT contributes to levelling the playing field and creates the opportunity for every participant to actively engage and contribute to the scenario planning workshop, regardless of their previous experience with the subject.

Critically reflecting own thoughts. Using ChatGPT during scenario planning provides each participant with a potential valuable sparring partner. Having ChatGPT as a sparring partner contributes to idea developments and encourages critical reflection on individual thought processes *"Provides insights to critically reflect on my own thought process"* (Participant, remark in questionnaire, workshop 3). Engaging in a dialogue with ChatGPT enables participants to exchange ideas with the chatbot, leading to a deeper exploration of the concepts and an enhanced brainstorming process. *"Additional source of contact which is great to spearhead some ideas on when stuck"* (Participant, remark in questionnaire, workshop 3). Additionally, ChatGPT's support can help participants in formulating their opinions more accurately, leading to clearer contributions. The collaboration with ChatGPT not only enriches the creative aspect of the scenario planning process but also enhances the overall decision-making process.

4.4.3 Specifying learning

Dilemma in augmenting creativity or replacing creativity

One of the most valuable contributions of ChatGPT to scenario planning is its ability to assist in scenario generation and creativity (Spaniol & Rowland, 2023). The designed workshop which used ChatGPT to support scenario planning showed an interesting duality regarding the effect of ChatGPT concerning the creativity of the participants.

On one hand, participants reported an increase in creativity with the support of ChatGPT. *“ChatGPT helps with generating new ideas”* (participant, remark in questionnaire, workshop 3), *“ChatGPT promotes creativity in responses to simple questions”* (participant, remark in questionnaire, workshop 2). And the support of ChatGPT helped participants with highlighting new perspectives. *“Providing different perspectives and insights to critically reflect my own thought process”* (participant, remark in questionnaire, workshop 3). On the other hand, participants expressed concerns that the support of ChatGPT could lead to a reduction in personal thinking and human creativity. *“ChatGPT reduces originality from a human perspective”* (participant, remark in questionnaire, workshop 3), *“It is easy to use, making it tempting to stop thinking for yourself”* (participant, remark in questionnaire, workshop 3) and *“ChatGPT does not increase creativity but replaces human creativity”* (participant, remark in questionnaire, workshop 3).

This duality is also evident in the literature, there are both examples highlighting how AI can enhance human creativity (Marrone et al., 2022) and examples emphasising the key challenges and risks associated with AI (Kasneci et al., 2023). Some examples highlighting the positive impact, “Assist in Idea Evaluation” and “Support Idea Refinement” (Eapen et al., 2023) were also observed in the workshop. However, the key challenges and risks highlighted in literature were also observed during the workshop with user becoming dependent on the model and diminishing their personal thinking (Kasneci et al., 2023).

The observations in combination with the literature emphasise the importance of using a balanced approach when integrating ChatGPT in scenario planning. Where particular attention should be paid to combining the strengths of human intelligence and the strengths of AI (Geurts et al., 2022). One practical implementation is to use ChatGPT during the preparation phase of the workshop and possibly during dedicated phases of the workshop as suggested by a participant *“I would suggest using ChatGPT prior to the workshop to delve deeper into the subject at hand and be better prepared. During the workshop, use it only for generating factual information, but prohibit the use of laptops during discussions as this doesn’t lead to any advantages”* (participant, remark in questionnaire, workshop 3). In the preparation phase ChatGPT can contribute by giving the participants more knowledge about the workshops’ subject so that they can make more informed contribution during the workshop. The use of ChatGPT during dedicated phases gives participants a clear distinction when they should use their own creativity and critical thinking and when they can use the support of ChatGPT. This way we still have the potential augmentation of creativity with the support of ChatGPT but reduce the risk of overreliance on ChatGPT because participants are obliged to use their own creativity and critical thinking.

Regarding the topic of creativity, a dilemma exist between augmenting or replacing the creativity, and this dilemma can be found in other domains as well. Webber et al. (2019) conducted a research to explore whether AI could assist with resolving team challenges and improving team effectiveness. The results unveiled that a hastily adoption of new technologies like AI could actually lead to a reduction in team effectiveness. The authors suggested that organisations should focus on coaching employees to enhance team productivity rather than relying on AI tools to solve the issues. Another study investigated how team coordinate with AI while playing games. Even in tasks where AI outperformed

humans, the study found that the overall team performance suffered. This was attributed to the challenge of coordinating with AI while playing and an overall decrease in team trust (Dell'Acqua et al., 2020). However, (Ransbotham et al., 2021) discovered contrasting outcomes in his research investigating possible cultural benefits when integrating AI in the organisational culture. The study highlighted that the integration of AI depends on the culture established by the management team. However, when this culture is design while taking AI into considerations. AI can contribute to an improved culture for both the team and the organisations as a whole. In the end, integrating AI presents a dualistic landscape with its strengths and weaknesses. A successful integration of AI within an organisation, where it can enhance the culture and team performance, relies on the culture created by the individuals and organisation.

Distrust in ChatGPT and the validity of its responses

An interesting observation was made during the workshops. Participants reacted differently on answers and ideas that were generated by ChatGPT than on answers that were generated by the participants. Whenever a response or statements was well-articulated. Whenever an answer or response was well-articulated the participants inquired if this response was generated with the assistance of ChatGPT. Participants expressed doubt about the reliability of the answers generated by ChatGPT because they couldn't trace the source of the information. *"But if it is generated by ChatGPT, should we trust it?"* (participant, quote in workshop, workshop 2). This contrasted with the way how participant provided answers, the participants contributions were done in a brainstorming session, and no one ever questioned the source behind the information or idea of a participant's contribution. Consequently, we can state that there was a scepticism among the participants towards the answer's generated by ChatGPT. This aligns with the findings from Chu and Liu (2023) about the scepticism towards narrative's generated by ChatGPT. This research concludes that there is a public scepticism towards AI and especially language models such as ChatGPT (Chu & Liu, 2023). How the answers are treated based on if it was generated by or with the support of ChatGPT and the free brainstorming of participants could hinder a successful integration of ChatGPT in scenario planning workshops. Diving deeper in how to overcome this scepticism is a crucial aspect for successful integration of ChatGPT in an organisation.

Distrust towards technology and particularly towards AI, is not a recent phenomenon but has its roots to the early stage of AI research (Müller, 2023). However, around 2009 the discussion surrounding AI gained public traction along with a growing fear of loss of control over AI systems (Fast & Horvitz, 2016). This fear reached a climax in 2015 with an open letter supported by numerous distinguished researchers and scientist (Russell et al., 2015) . The letter promoted the idea of creating a robust AI system which aligned with human intentions. Subsequent to this open letter, a period of relative quietness followed in the discussions about AI. However, the emergence of technologies like ChatGPT reignited the public debate which let to another open letter aimed at a temporary pause in the progression of large language models due to their opacity (Future of Life Institute, 2023). The reasoning for the pause is to evaluate the impact of large language systems and formulate strategies for guaranteeing their safety. When an organisation is planning to adopt a technology like ChatGPT or another form of AI, they should consider the distrust and the public debate surrounding the subject. The organisation should also be aware of the potential risks associated with AI and establish clear guidelines for responsible AI usage. In the end, there are a lot of possibilities for AI but handling them responsibly is crucial and the responsibility of every user.

Challenge of embedding scenario planning in the organisation

During the process of holding workshops to identify barriers and benefits of using ChatGPT to support scenario planning as a technology forecasting the question was asked to participants if they would run the workshop more often in the organisation. All the fourteen participants expressed that they would like to run the workshop more often because a lot of driving factors remained unexplored because during the scenario creation only two factors were selected for the following steps. *“When creating the scenarios, we only looked at a limited number of influential factors, in our case two”* (participant, remark in questionnaire, workshop 3). Running the workshop more often would increase the effectiveness of forecasting activities according to Vanston (1996). Sometimes it is useful to conduct a special forecast on a specific technological advancement but most of the time technology forecasting activities are the most effective when they are conducted on a regular basis (Vanston, 1996). However, the question arises how to effectively embed the workshop in the organisation. Scenario planning are already frequently used with clients (Interviewee A), but the challenge lies with finding the resources and time to implement it for internal purposes.

Another challenge that makes the integration of scenario planning within an organisation difficult is that organisations already have established methodologies for strategizing and making decisions (Doz & Kosonen, 2010). The transition from the established traditional step-by-step planning method to a more exploratory and open-minded mindset can lead to internal resistance. Additionally, organisations often focus on achieving short-term objectives and easily obtainable goals while scenario planning is oriented on the long term (Volkery & Ribeiro, 2009). This is exemplified in the difficulty that many companies face in achieving the climate targets and shifting into an environmental friendly organisation (Millar et al., 2012). The mismatch between the short-term goals of most organisations and the long-term focus of scenario planning can hinder the embedding of scenario planning in the organisation.

4.4.4 Limitations

A limitation of this research is that only one action research cycle was used with the overall workshop structure remaining consistent throughout the three given workshops. Incorporating multiple action research cycles could have enhanced the research by allowing iterative improvements on the workshops' design. By gathering feedback of participants from previous iterations of the workshop, the overall design and method could be finetuned leading to a better exploration of the barriers and benefits of using ChatGPT to support scenario planning.

One limitation that appears while using action research is the lack of impartiality of the researcher. Since the researcher is actively involved in the research process, they can influence the participants' behaviour or responses. The researcher is shaping and telling the story and needs to consider to what extent details about the research are valid to share or when details are a biased version. If participants know too much of the researcher's goals, they can modify their responses and compromise the validity of the findings of the research.

Participants did not use ChatGPT as a preparation tool for the workshop. ChatGPT has the chance to enhance the knowledge of participants about the workshop's subject when if the participants use it when preparing for the workshop. This research did not instruct participants to prepare for the workshop with the support of ChatGPT. By encouraging participants to utilise ChatGPT prior to the workshop we could increase their trust in ChatGPT and enhance their knowledge and ideas about the subject.

Another limitation is that the workshop that was used for scenario planning was not specifically tailored for utilising ChatGPT as a tool during the workshop. The workshop was designed that it could be run without the support of ChatGPT as well as with the support of ChatGPT. Running this workshop design led to a dynamic nature of discussions with a lot of interactions between participants, in these situations ChatGPT could not be utilised. This could be solved by designing a workshop with a structure that complements the capabilities of ChatGPT which could result in new insights about barriers and benefits of using ChatGPT in scenario planning workshops.

5. Conclusion

In a world that is rapidly evolving through technological advancements, forecasting emerging technologies have become increasingly important for organisations. New technologies show great potential to improve current technology forecasting methods. This goal of this research was to design a workshop that investigates the combination of a new technology with an existing forecasting method. This research specifically focusses on the barriers and benefits associated with the use of free ChatGPT 3.5 to support scenario planning. The research took place during a six-month period in which the current situation was diagnosed by interviewing experts, the workshop was designed and executed three times and the results were evaluated. The research contains a template of the workshop design, a list of barriers and benefits of using ChatGPT to support scenario planning and the main findings while executing the action research.

The study revealed a dilemma when using ChatGPT in scenario planning. On one hand the participants felt that it enhanced their creativity by generating new ideas and providing diverse perspectives. On the other hand, the participants expressed their concern about the reduction of personal thinking and replacing human creativity. A balanced approach combining human intelligence augmented by the support of ChatGPT should be the goal when integrating ChatGPT in forecasting methods. A practical implementation is to use ChatGPT in preparation and dedicated workshops phases to allow its creative augmentation while mitigating the risk of overreliance on ChatGPT. Another finding was the difference in reaction from the participants to ChatGPT and human-generated responses. Participants expressed a natural scepticism towards answers generated or supported by ChatGPT due to the lack of sources. This was in contrast with the trust given to every idea generated by the participants during the workshop. In order to successfully integrate ChatGPT in scenario planning, it is important to overcome the scepticism towards ChatGPT. The last finding was the difficulty in embedding an internal technology forecasting method in the organisation. All participants expressed a strong interest in running the scenario planning workshop supported by ChatGPT more often in the organisation. However, the challenge lies in finding resources and time to implement the method internally.

In the end, ChatGPT shows great potential for supporting scenario planning workshops due to its extensive knowledge about almost every subject and its ability to contribute to human creativity at certain moments. AI is here and is here to stay, this urges us to embrace AI and try to integrate it in our lives. We should embrace both the challenges but especially the opportunities it presents for a brighter future.

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Appendix

Appendix A - Interview questions

Personal:

Could you give me a short introduction about yourself?

Make sure they mention the following:

- What is your academic background in terms of formal education?
- What is your internal responsibility within the company

Diagnosing:

- 1) What is the way your team looks to the future digital trends and how do you decide on business opportunities? Which method is used?
- 2) If you must make a prediction on the further development of digital business opportunities, how do you proceed?
 - a) Could you give a step-by-step description?
 - b) How is the responsibility shared for these steps?
 - c) What is your role in this process?
- 3) How would you rate the current process for thinking about digital business opportunities, based on how satisfied you are (on a scale of 1 to 10)?
 - a) Which parts work well?
 - b) Which steps could be improved?
- 4) How important do you think this process is to make your company future proof?
- 5) In which ways could the current process be optimised?
- 6) What tools do you use in the current process?
- 7) Do you use forecasting methods, for example Scenario planning or the Delphi method in the decision-making process?

General:

- 1) Are you available for follow up questions?
- 2) Do you have any remarks about forecasting or work methodologies or directions I should investigate?

Appendix B – Workshop preparation

Appendix B1 – Observer Briefing

The objective of the workshop is to assess the barriers and benefits of using ChatGPT to support scenario planning as a technology forecasting method.

The observations of the facilitator and the participants are part of this research and lends validity to the research. The goal of observing the participants is to give a reality to the workshop and create a unique understanding about the workshop's atmosphere. The goal of observing the facilitator is to verify compliance with the designed workshop structure.

Please keep the following points in mind when observing the facilitator:

- *Overall communication and adaptability.* Observe the facilitator's communication skills and adaptability. How does the facilitator react to unexpected situations or distraction to the workshop flow? How clear are the explanations of the facilitator?
- *Time management.* Pay attention how the facilitator manages the time during the workshop. Is the facilitator adhering to the schedule?
- *Compliance with designed workshop structure.* Is the facilitator following the designed workshop structure? Is he skipping steps or adding discussions?

Please keep the following points in mind when observing the participants:

- *Look at participant engagement.* Observe how actively the participants are engaged in the activities and discussions during the workshops. Are they asking questions? Are they contributing to the discussion?
- *Body language.* Observe the body language of the participants as they can reveal their interest or comfort in the workshops. Are they constantly checking their phone? Are they looking out of the window?
- *Verbal communication.* Listen to what the participants say during the workshop. Note the questions they ask to the facilitator and notable statements during discussions.
- *Non-verbal communication.* Observe non-verbal communication, this is different than body language. Look at clues like eye contact, facial expressions, and posture. Observe if they sit up straight or are sitting slumped.
- *Interaction between participants.* Observe how the participants interact with each other. Are they discussing vigorously or listening well to each other? Is there a conflict or tensions?

In the end don't be afraid to miss an observation, your goal is to set the stage of the workshops' atmosphere.

Good luck!

Appendix B2 – ChatGPT user Briefing

Welcome,

During this workshop you will be allowed to use ChatGPT as a supportive tool to possibly enhance your exploration of scenarios, identification of key driving factors and discussions about the possible investment in the future.

Please keep the following points in mind as you interact with ChatGPT:

- 1) Tool for Idea Generation: ChatGPT is here to assist us in generating potential ideas, insights, and perspectives. It helps us with offering alternative viewpoints and the potential implication related to the scenarios we explore.
- 2) Critical evaluation: While ChatGPT can offer valuable insights, it is important to critically evaluate its responses. Consider ChatGPT as a tool that sparks ideas and helps in further discussion, but do not blindly accept its outputs without a thoughtful analysis from yourself.
- 3) Engage in Dialogue: You could treat ChatGPT as a conversational partner to prompt deeper reflections and discussions. Feel free to ask probing questions and seek diverse perspectives from ChatGPT to spark engaging conversations with the other participants.
- 4) Explore and learn: This workshop is an opportunity to experiment and learn with and from ChatGPT. Feel free to ask different types of questions, explore various scenarios and be open to the possibilities that emerge through the interaction with ChatGPT.

Remember, the primary goal of using ChatGPT is to enhance the workshop experience and foster creative thinking. It is to be used as a supportive tool that can contribute to our exploration of scenarios and the possibilities of the future of work but use ChatGPT as a supporting tool and don't let it completely replace you.

Now let's begin with the workshop!

P.S. When using ChatGPT please start a new chat at the beginning of the workshop and in the end export the chat and share the whole conversation with the facilitator.

Scenario Template

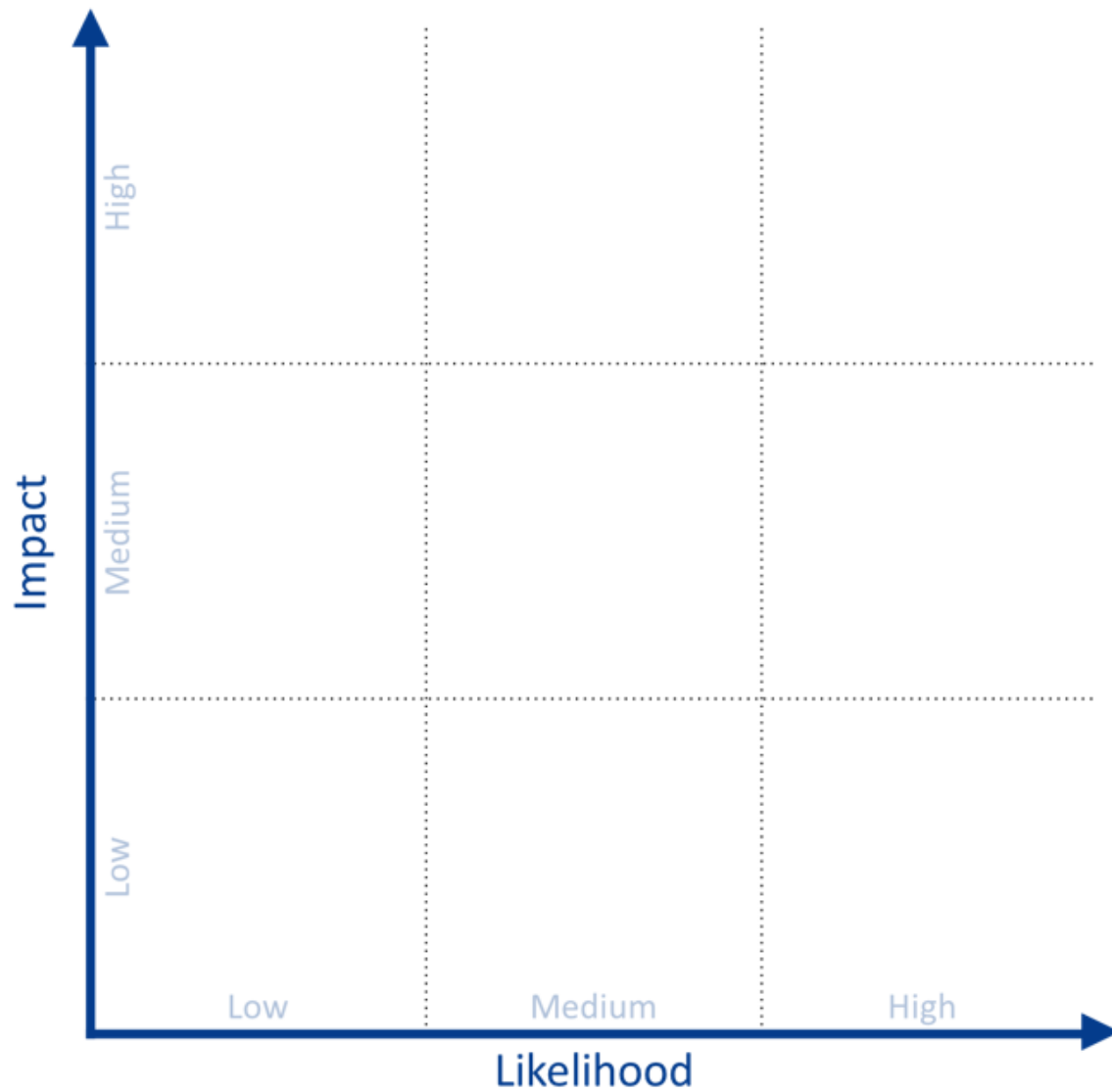
Scenario ...

Participant:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Impact-likelihood matrix

Participant:



Workshop Questionnaire

..5..5...

This questionnaire aims to gather your feedback on various aspects of the workshop experience and strive to enhance future sessions. In this questionnaire we will focus on exploring your thoughts opinions regarding the workshop content, structure, and delivery.

The questionnaire contains open-ended questions, which provide an opportunity to share detailed feedback and suggestions, and a 5-point Likert scale statements ranging from strongly disagree to strongly agree, which will enable you to indicate your level of agreement or disagreement with specific statements concerning the workshop.

Your answers will be completely anonymous.

1) How did you experience the workshop?

2) What were strengths of using scenario planning as method for a workshop for predicting and anticipating trends?

3) What are limitations or challenges of using scenario planning as method for a workshop for predicting and anticipating trends?

- 4) What aspects of the workshop's methodology or presentation, related to scenario planning, did you find particularly effective or engaging?

Workshop

Rate the following statements on a scale from strongly disagree to strongly agree

	Strongly disagree	Disagree	Uncertain / not applicable	Agree	Strongly agree
1. The insights gained in the workshop are relevant to me.					
2. Scenario planning is an appropriate tool for anticipating trends.					
3. The workshop structure was appropriate.					
4. The difficulty level of the workshop was appropriate.					
5. The workshop was stimulating.					
6. The time given for the workshop was appropriate.					
7. The workshop had clear objectives.					
8. The content of the workshop was relevant to me.					
9. I was well informed about the workshop content and objectives.					
10. The workshop lived up to my expectations.					

Room for comments or additional remarks about the given statements above

Other

1) Would you run this workshop more often in the organisation?

2) Were the tools and frameworks provided during the workshop helpful in facilitating the scenario planning process for technology forecasting?

3) Do you have any additional tools, frameworks, or recommendations that you would recommend incorporating into future workshops on technology forecasting?

ChatGPT

1) What is your opinion using ChatGPT as support during the workshop

2) What did you experience to be advantages and disadvantages of having ChatGPT as support during the workshop?

Advantages:
Disadvantages

ChatGPT user:

1) How would you describe your overall experience using ChatGPT to support you during the workshop?

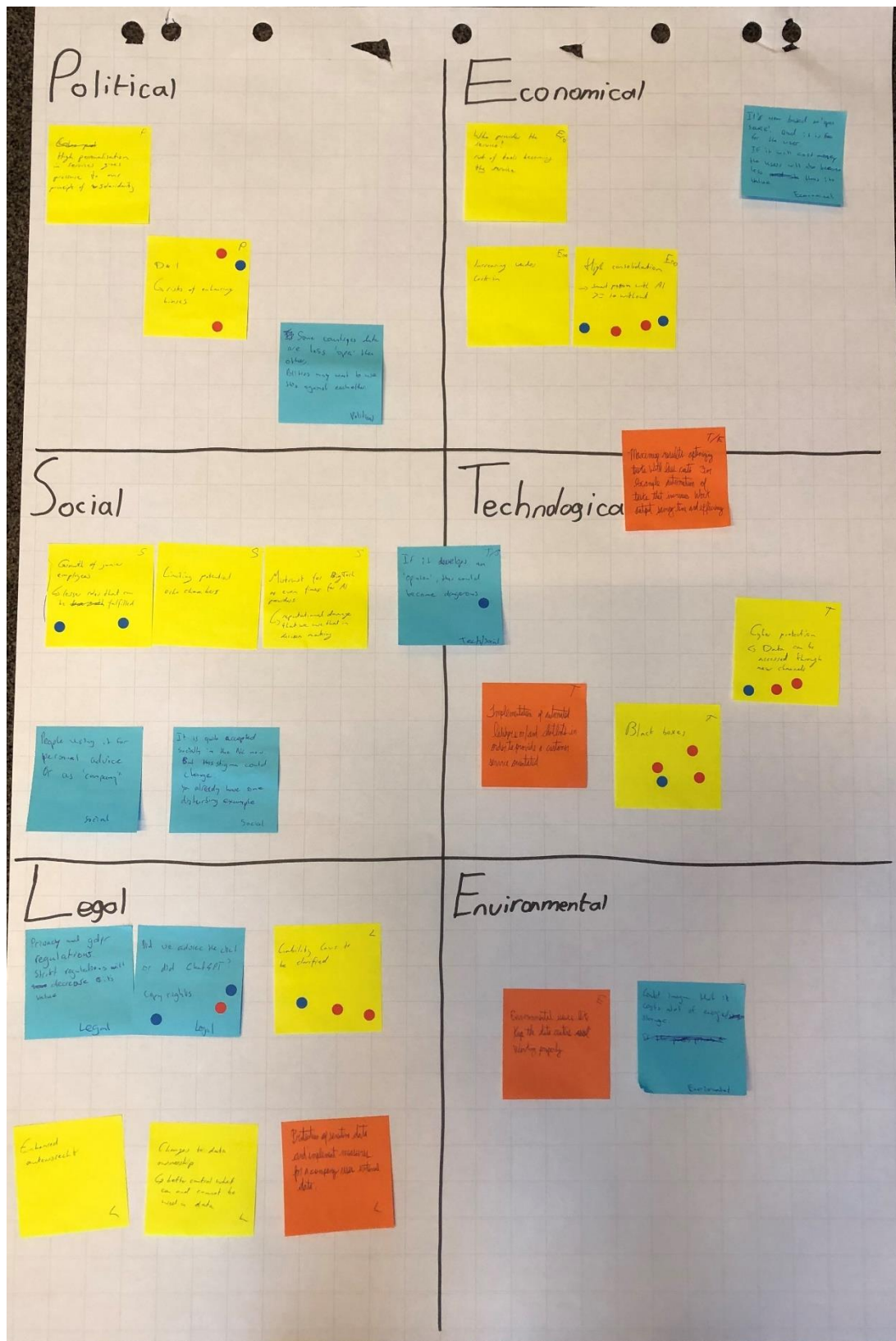
- 2) Did the use of ChatGPT enhance your productivity or effectiveness in completing workshop tasks?

- 3) To what extent do you feel that you were able to utilise your own creativity while using ChatGPT during the workshop?

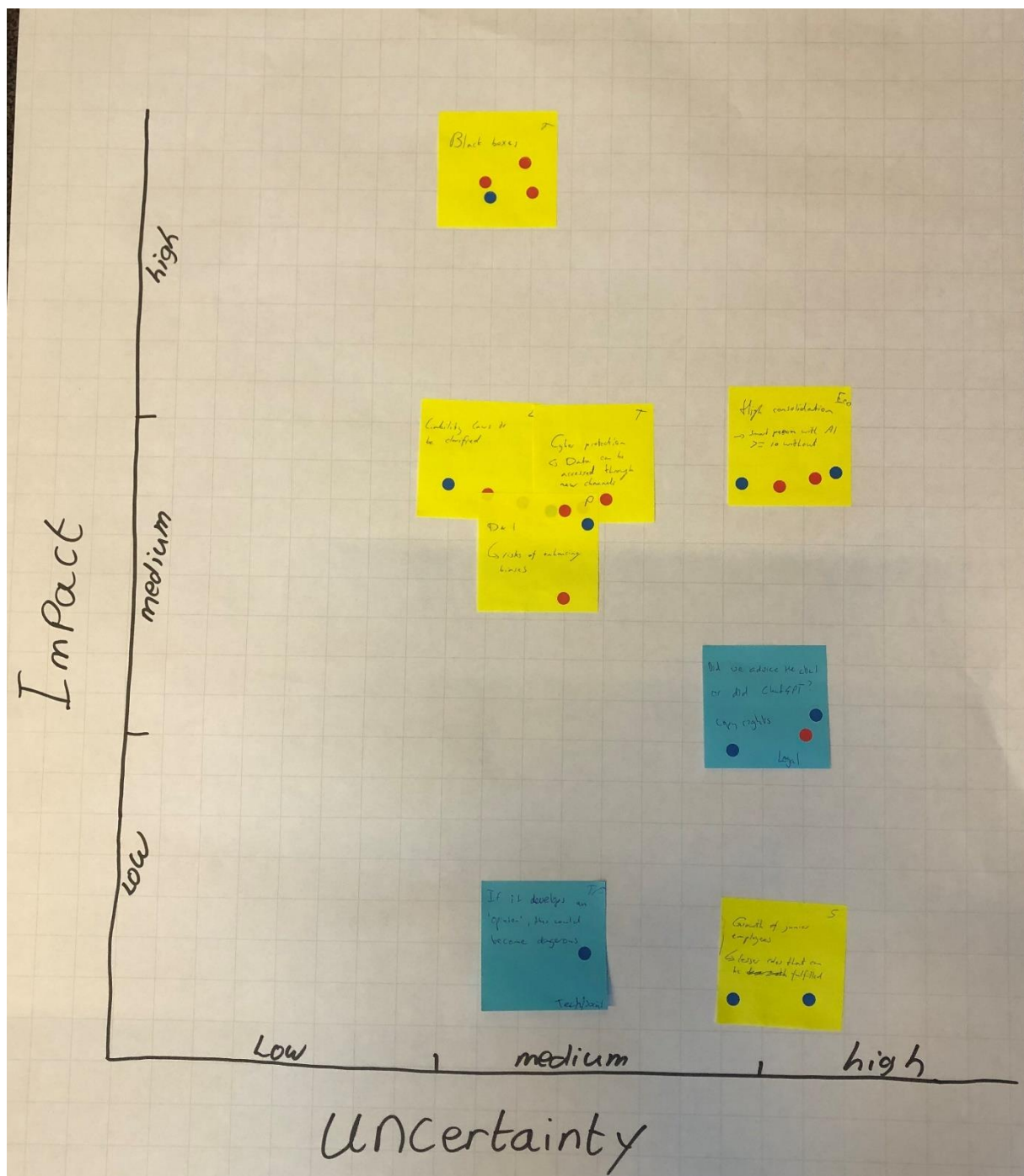
	Strongly disagree	Disagree	Uncertain / not applicable	Agree	Strongly agree
1. ChatGPT was useful in supporting me during the workshop					
2. The use of ChatGPT increased my creativity					
3. ChatGPT addressed my specific needs and questions during the workshop					
4. ChatGPT had a positive impact on the outcome of the workshop					
5. I would recommend others participating in similar workshops to use ChatGPT as support					

Appendix C – Workshop 1 results

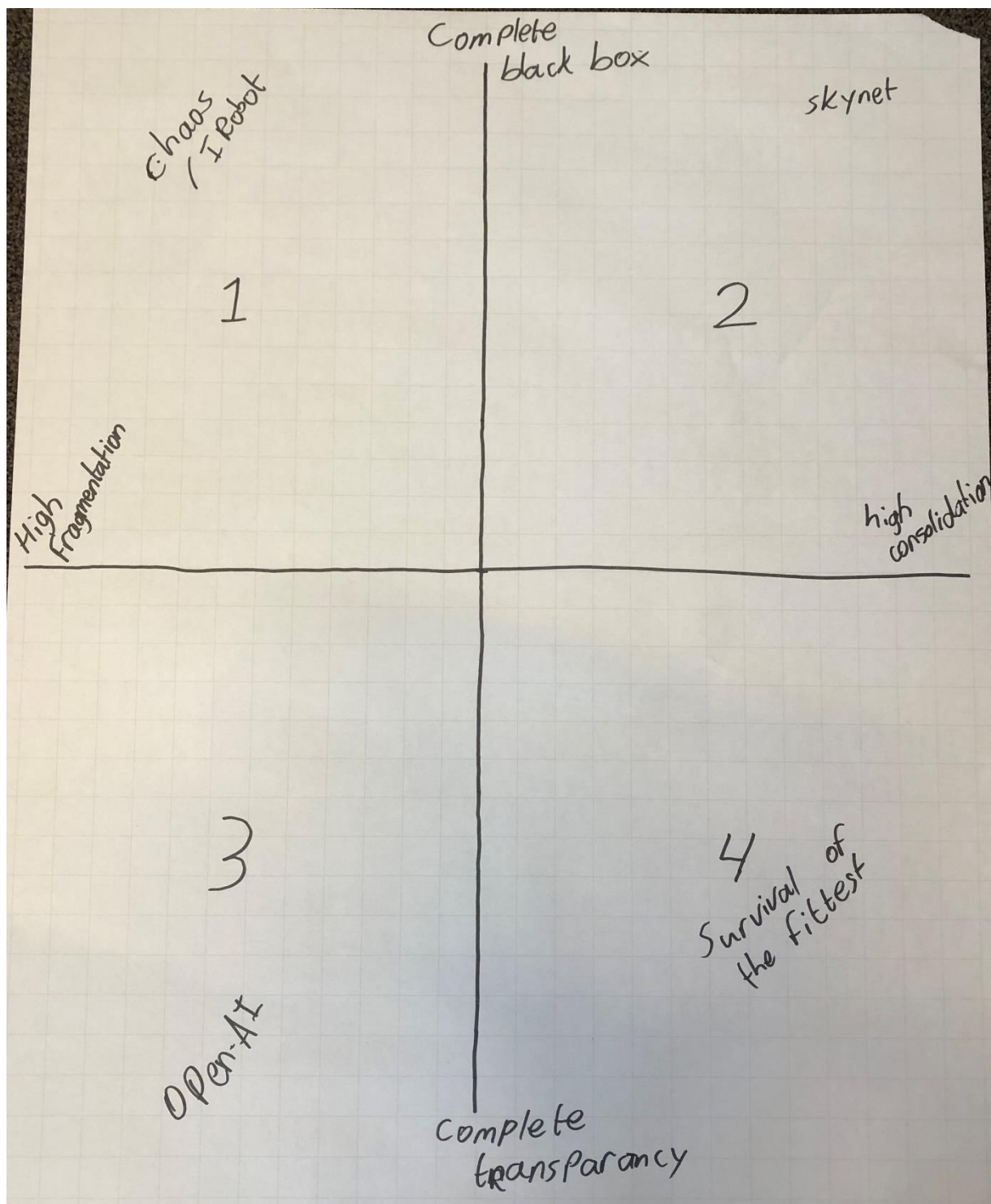
Appendix C1 – PESTLE-analysis



Appendix C2 – Impact-uncertainty matrix



Appendix C3 – 2x2 matrix



Scenario Template

Scenario 1 ~~Fragmented box~~
J-Robot

Participant:

- Opportunity for KMPG: create transparency for auditing

- ~~Very~~ a lot of distrust, ~~why~~ now body ~~can~~ knows why?

~~Opportunity~~ Risks for mortgages and insurance when the
can't explain why certain groups get certain rates.

~~Uncertainty~~ uncertainty: Algorithms check algorithms.

Risk: less clients with high fragmentation.

Risk: more competition in consultancy sector (high fragmentation)

Scenario Template

Scenario? sky net

Participant:

~~Changes~~ Increases reliance on other firms

Opportunity: Trust becomes even more important. Good for KPMG.

Increase in distrust big company.

Scenario Template

Scenario 3: open AI

Participant:

AI = a public service

* Opportunity: advice in which AI's to use in ~~which~~ situation. which

Risk: Employees may leave and ~~start~~ start own firm.

Opportunity: for tech audit, as it is easier to use for chats.

Scenario Template

Scenario 4. survival of the fittest Participant:

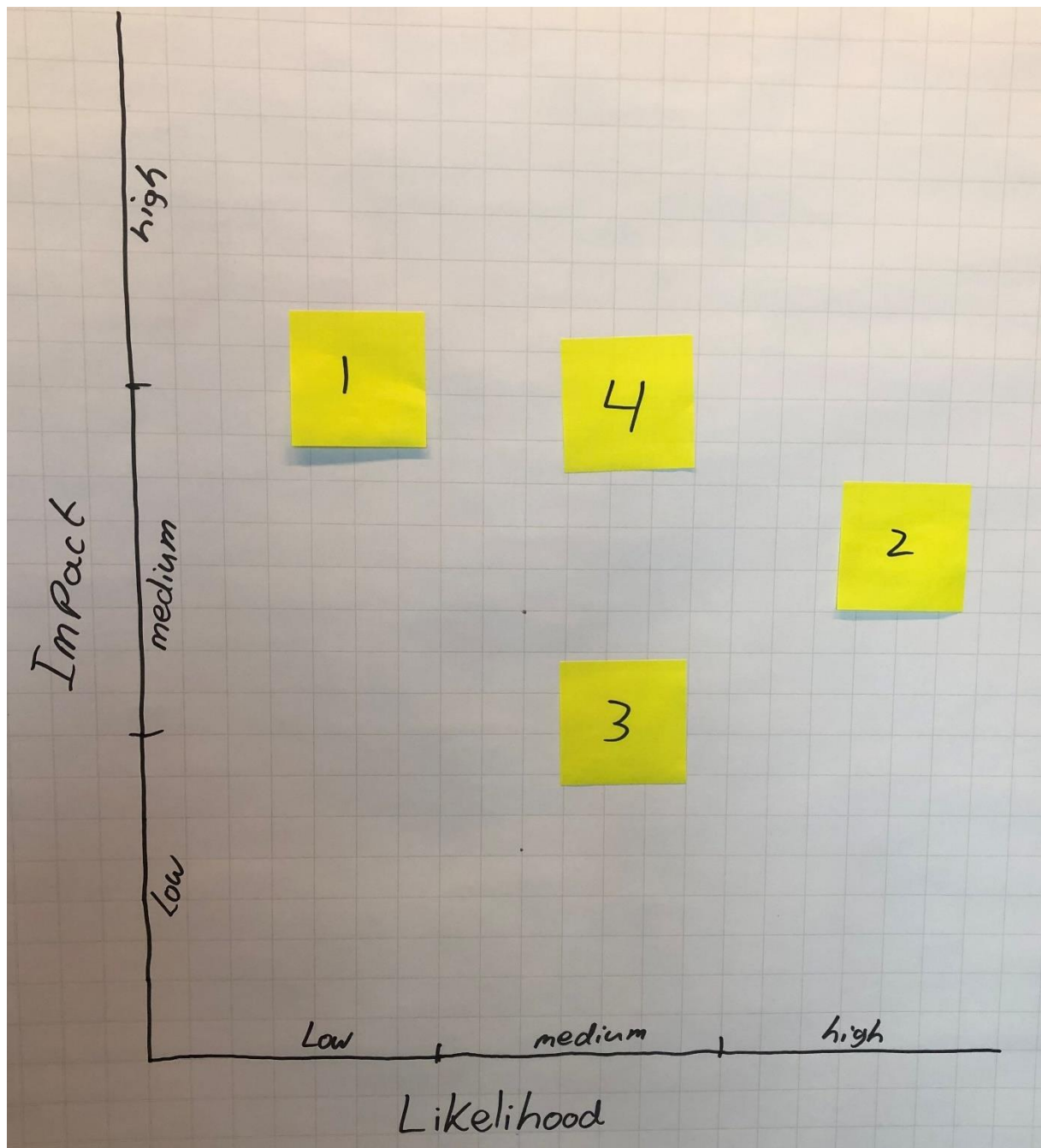
AI will become very asset heavy.
(high maintenance, high certification costs)

More users the more value

opportunity BPMG: manage trustworthy service

Risks: IT becomes a knowledge center.

Appendix C5 – Impact-likelihood matrix



Appendix C6 – Observations

14:00-14:05 Introduction workshop & agenda

Time	Observation	Activity	Actor
14:01:00	Participant 1 en 2 zijn aanwezig, Participant 3 en 4 nog niet	Er is een gesprek over het leven gaande	1,2,3
14:05:00	Participant 3 komt aan	Facilitator doet deur dicht	3,f
14:05:00	Participant 3 werkt door op zijn laptop, Participant 2 zet zijn telefoons uit.	Facilitator doet televisiescherm aan en start de presentatie	2,3,f
14:06:00	Participant 3 werkt door op zijn laptop, Participant 1 en 2 kijken naar de facilitator	Facilitator vertelt de agenda	1,2,3,f
14:08:00	Participant 1 en 2 knikken bevestigend aan het einde van de agenda		1,2

14:00-14:05 Communicate goal

Time	Observation	Activity	Actor
14:08:00	Participant 3 werkt op zijn laptop, maar kijkt af en toe op naar het scherm		3
14:08:00	Participant 1 en 2 kijken naar Facilitator	Facilitator legt het doel uit van de workshop	1,2,f
14:08:00	Participant 3 knikt terwijl hij kijkt naar zijn laptop		3
14:08:00	Participant 3 geeft aan dat hij eerder ervaring heeft met scenario planning		3
14:09:00	Participant 3 knikt	Facilitator benoemt Midjourney en ChatGPT als voorbeelden van Generative AI	3,f
14:09:00	Participant 1 verplaatst zijn sleutel en kijkt daarna weer naar de facilitator		1,f
14:10:00	Participant 1 drinkt		1
14:10:00	Iedereen knikt	Facilitator vraagt of het doel duidelijk is	f

14:10-14:15 Present key question

Time	Observation	Activity	Actor
14:10:00	Participant 3 draait zich weg van zijn laptop en draait zich naar het scherm	Facilitator bespreekt de key question	3,f
14:11:00	Participant 1 zegt: "Eigenlijk gebruikt iedereen ChatGPT al"		1
14:11:00	Participant 3 werkt weer op zijn laptop, Participant 1 en 2 kijken naar facilitator		1,2,3,f

14:15-14:30 *Identify driving factors*

Time	Observation	Activity	Actor
14:11:00	Participant 1 pakt direct de memo blaadjes en maakt ze open	Facilitator legt uit dat we memo blaadjes gaan gebruiken om de key factors op te schrijven	1,f
14:11:00	Participant 1 stelt een verduidelijkingsvraag: 'What would impact Generative AI or what would impact KPMG?'	Facilitator beantwoordt de vraag met Generative AI	1,f
14:12:00	Facilitator vraagt of de participanten al bekend zijn met PESTLE en legt daarna kort de PESTLE analyse uit		f
14:12:00	Alle participanten bevestigen dat ze wel eens de PESTLE-analyse hebben gebruikt of van hebben gehoord		
14:12:00	Participant 1 begint met schrijven, Participanten 2 en 3 maken memo's open		1,2,3
14:13:00	Participant 3 krijgt het pakje niet open, Participant 2 biedt zijn hulp aan, de overige participanten lachen, Participant 1 is al aan het schrijven	key factors opschrijven	1,2,3
14:13:00	Facilitator legt uit dat de bedoeling is om 1 factor per briefje op te schrijven		1,f
14:13:00	Participant 1 en 3 schrijven, Participant 2 denkt en schrijft niet	key factors opschrijven	1,2,3
14:14:00	Participant 1 tikt met zijn voet op de grond	key factors opschrijven	1
14:14:00	Participant 2 heeft 1 briefje opgeschreven	key factors opschrijven	1,2
14:14:00	Participant 2 verfrommelt zijn tweede briefje	key factors opschrijven	2
14:15:00	Participant 3 is bezig met zijn derde briefje	key factors opschrijven	3
14:15:00	Participant 1 heeft 2 briefjes af	key factors opschrijven	1,2
14:15:00	Participant 2 verfrommelt z'n eerste briefje	key factors opschrijven	2
14:15:00	Participant 2 stelt een verduidelijkingsvraag: "mag ik ook factoren als vragen opschrijven?")	key factors opschrijven	2
14:16:00	Participant 1 luistert naar antwoord en vraag, participant 2 schrijft door	Facilitator beantwoordt de vraag	1,2,f
14:16:00	Facilitator geeft nog extra verduidelijking	key factors opschrijven	f
14:16:00	Participant 3 stopt met schrijven en kijkt naar buiten	key factors opschrijven	3
14:16:00	Facilitator gaat wcpapier halen omdat hij bloed aan zijn vinger	key factors opschrijven	f
14:17:00	Participant 2 verfrommelt derde briefje	key factors opschrijven	2
14:17:00	Participant 2 opent zijn laptop en begint met typen	key factors opschrijven	2
14:17:00	Participant 3 heeft 6 briefjes geschreven, Participant 1 heeft 4 briefjes geschreven	key factors opschrijven	1,3
14:17:00	Participant 2 doet laptop verder dicht en gaat verder met schrijven, heeft 1 briefje geschreven nu	key factors opschrijven	1,2
14:18:00	Facilitator komt terug van de gang	key factors opschrijven	f
14:18:00	Participant 3 kijkt naar buiten	key factors opschrijven	3
14:18:00	Participant 2 zucht als hij klaar is met zijn 2 briefjes		2
14:19:00	Participanten 2 en 3 maken oogcontact		2,3
14:19:00	Participant 3 mompelt 'how do you call that' en typt iets op zijn laptop		3

14:19:00	Participant 2 checkt telefoon en gaat typen op laptop		2
14:19:00	Participant 3 typt op laptop		3
14:19:00	Participant 1 maakt even klakgeluidje en gaat daarna weer verder schrijven		1
14:20:00	Facilitator geeft aan dat het niet de bedoeling is om internet te gebruiken		f
14:20:00	Participant 2 zegt dat hij zijn mail checkt		2
14:20:00	Participant 3 zegt dat hij zoekt naar een bepaalde term maar deze niet te binnen schiet		3
14:21:00	Participant 1 doet een suggestie voor de term draagkracht		1
14:21:00	Participant 3 weet de term: solidariteit		3
14:21:00	Participant 3 geeft aan dat zijn factor misschien niet helemaal KMPG's ding is		3
14:21:00	Participant 3 vraagt: "Vanuit welk perspectief moet ik het bekijken"		3
14:21:00	Participant 1 vraagt of hij alvast de briefjes op mag plakken		1
14:22:00	Participant 3 kijkt even op en schrijft daarna verder		3
14:22:00	Facilitator geeft aan dat hij wil dat ze wachten met het opplakken totdat iedereen klaar is	Participant 2 is nog aan het schrijven	2,f
14:22:00	Participant 3 staat op en gaat plakken, Participant 1 zit op zijn telefoon, Participant 2 schrijft		1,2,3
14:23:00	Participant 2 schrijft	Participant 1 en 3 plakken hun briefjes op het bord	1,2,3
14:23:00	Participant 1 gaat nog een extra factor opschrijven	Participant 3 is aan het plakken	1,3
14:24:00	Participant 3 legt uit wat D&I is	Participant 2 schrijft nog aan zijn factoren en Participant 1 plakt zijn nieuwe briefjes op	1,2,3
14:24:00	Participant 2 bekijkt iets op zijn laptop		2
14:25:00	Participant 1 en 3 glimlachen		1,3
14:25:00	Participant 3 zegt dat AI van nature biased is	Participant 2 schrijft nog en Participant 1 zit op instagram	1,2,3
14:25:00	Participant 3 verteld een anekdote die aangaf dat AI biased was		3
14:26:00	Participant 3 krijgt een berichtje binnen en zijn laptop maakt geluid		3
14:26:00	Participant 1 zit nog steeds op zijn telefoon	Participant 3 gaat verder met zijn anekdote tegen de Facilitator	1,3,f
14:27:00	Participant 2 is nog steeds aan het schrijven		2
14:27:00	Participant 1 gooit zijn telefoon weg op tafel		1
14:27:00	Participant 2 gaat de stickers opplakken		2
14:27:00	Participant 1 rekt zich uit	Participant 3 vertelt zijn anekdote	1,3
14:28:00	Participant 3 schrijft nieuw briefje en plakt het op	Participant 1 is bezig met zijn horloge,	
14:28:00	Participant 3 geeft aan dat hij moeite heeft om een naam te bedenken en hij weet niet of het bij political hoort	Participant 2 plakt zijn briefjes op	1,2,3
14:29:00	Participant 3 plakt nog een nieuw briefje op		3
14:29:00	Participant 1 doet toevoeging: AR verzamelt al het nieuws en kan niet onderscheiden tussen slecht en goed nieuws		1

14:30-14:45 Discuss key driving factors

Time	Observation	Activity	Actor
14:30:00	Alle participanten verzamelen zich voor het bord		1,2,3
14:30:00	Participant 1 gaat zijn eerste factor uitleggen		1
14:30:00	Participant 3 verplaatst een factor omdat het dezelfde factor is als die van participant 1		1,3
14:31:00	Participant 3 reageert op de factor van Participant 1		1,3
14:31:00	Participant 1 legt zijn tweede factor uit	Facilitator knikt, Participant 2 en 3 kijken toe	1,2,3,f
14:31:00	Participant 3 verplaats er eentje en zegt dat ze een beetje dezelfde zijn		3
14:31:00	Participant 3 gaat nog een nieuw briefje schrijven		3
14:31:00	Participant 2 legt een briefje uit		2
14:32:00	Facilitator stelt verduidelijkingsvraag		f
14:32:00	Participant 1 geeft antwoordt		1
14:32:00	Participant 1 leest een kaartje en zegt "ohja"		1
14:32:00	Participant 3 plakt een extra briefje op	Alle participanten kijken geïnteresseerd naar het bord	3
14:32:00	Participant 3 licht iets toe over AI in hospitals en hij stelt een vraag over digital triage, if the AI says you can stay home, and you die, who is responsible"	Participant 1,2 en de facilitator luisteren	1,2,3,f
14:34:00	Participant 2 zegt dat het een grote discussie is		2
14:34:00	Participant 1 doet nog een uitstapje en zegt dat iemand mentally ill was, committed suicide, because of the advise of chat gpt		1
14:35:00	Participant 3: Misschien moeten sommige types van ChatGPT gecertificeerd maken		3
14:35:00	Facilitator geeft aan dat we door moeten gaan met de factoren en vraagt naar een factor van Participant 2 in de environmental gedeelte		2,f
14:35:00	Participant 2 antwoordt		2
14:35:00	Participant 1 zegt dat die van hem bij environmental een beetje hetzelfde is, hij verplaatst het briefje naar het briefje van Participant 2		1,2
14:36:00	Facilitator vraagt Participant 3 om te praten over de Social factors		3,f
14:36:00	Participant 3 vertelt over een factor over lower education, starters, lower capability	de rest luistert en Participant 1 verplaatst een briefje tussen social en technological	1,3
14:37:00	Participant 3 zegt dat het ook hoort bij economical, als sommige mensen een programma wel kunnen gebruiken en anderen niet		3
14:37:00	potential echo chambers wordt toegelicht door Participant 3	de rest luistert	3
14:38:00	Participant 2 knikt als Participant 3 praat		2,3
14:38:00	Participant 3 geeft een voorbeeld over een consultancy bureau dat een hype heeft en iedereen kijkt daarna, als dat gebeurt kan AI zeggen dat het hyped is en nog meer hyped wordt		3
14:38:00	Participant 3 licht de factor van mistrust uit		3
14:39:00	Participant 1 hmmmt en knikt bevestigend		1
14:39:00	Participant 2 knikt als Participant 3 praat		2,3

14:39:00	Participant 3 legt uit als een product niet goed is beveiligd etc.		3
14:39:00	Facilitator vraagt of iets erop lijkt van 1		1,f
14:40:00	Participant 1 legt zijn eerste factor bij social uit		1
14:40:00	Participant 1 vertelt iets over de tweede factor, is het sociaal acceptabel of niet		1
14:40:00	Participant 1 legt iets uit over de factor die tussen social en technological staat	de anderen luisteren	1
14:41:00	Facilitator geeft 2 de beurt om iets over zijn factoren bij technological te vertellen		2,f
14:41:00	het kan bij tech, maar ook bij economical zegt Participant 2		2
14:42:00	Facilitator verplaatst de factor tussen economical en technological, iets met black boxes		f
14:42:00	Participant 3 geeft een toevoeging over een twitter AI die heel racistisch was, wat als het minder expliciet was, hadden we het dan ook door gehad?		3
14:43:00	Participant 3 licht een factor van cyberprotection toe	de rest kijkt naar hem en luistert	3
14:43:00	Participant 3 geeft nog een voorbeeld bij cyberprotection, AI kan allemaal werk doen dat illegaal en crimineel is		3
14:44:00	Participant 1 glimlacht		1
14:44:00	Participant 3 geeft een voorbeeld van zijn moeder die een fake bericht krijg vanuit hem	Participant 1 en 2 lachen	1,2,3
14:44:00	Facilitator naar economical factors		f
14:44:00	Participant 3 biedt aan gelijk verder te gaan, omdat hij er veel heeft. Hij legt uit		3
14:45:00	Participant 3 benoemt heel kort extreme consolution		3
14:45:00	ook heel kort funcer locker		
14:45:00	Facilitator geeft Participant 1 de beurt voor zijn factor bij economical		1,f
14:45:00	Participant 1 zegt dat hij moeite had met de formulering van deze factor		1
14:46:00	Facilitator helpt met verduidelijken		f
14:46:00	Participant 3 legt zijn political factor uit: assurance, providing health care		3
14:47:00	Facilitator doet aanvulling: hypotheek		f
14:47:00	Participant 3 antwoordt iets met morbid, maar verstond het niet		3
14:47:00	Participant 1 legt zijn laatste factor uit		1
14:47:00	Participant 3 reageert op deze factor met een voorbeeld	Participant 2 knikt terwijl Participant 3 dit vertelt	2,3
14:47:00	Participant 2 lacht en knikt		2

14:45-14:55 *Prioritise driving factors*

Time	Observation	Activity	Actor
14:48:00	Facilitator legt dots uit en geeft iedereen er een aantal		f
14:48:00	Participant 1,2,3 kijken naar de PowerPoint	uitleg over wat te doen	1,2,3
14:48:00	Participant 1 vraagt: dus positive impact?	Participant 3 plakt al een dot	1,3
14:48:00	Facilitator geeft uitleg over wat hij precies bedoelt: high impact	Participant 3 plakt nog een sticker	3,f
14:49:00	Participant 1 vraagt wat uncertainty is?		1
14:49:00	Facilitator beantwoordt vraag van Participant 1	Participant 2 en 3 plakken stickers	1,2,3,f
14:49:00	Participant 3 mompelt een beetje en plakt daarna een	stickers plakken	3
14:50:00	Participant 3: ik ga er denk ik geen 5 plakken (dat zegt hij als hij een blauwe plakt)		3
14:50:00	Participant 1 stelt een vraag over een kaartje van Participant 3 bij social		1,3
14:51:00	Participant 3 is klaar met plakken en gaat op zijn laptop kijken	Participant 1 en 2 plakken nog stickers	1,2,3
14:51:00	Facilitator is het moeilijk om ze eraf te krijgen?		f
14:51:00	Facilitator aan Participant 1 als hij gaat zitten: heb je ze allemaal geplakt?	Participant 2 plakt nog stickers	1,2,f
14:51:00	Participant 1 zegt dat hij er 7 heeft geplakt		1
14:52:00	Participant 1 op telefoon, Participant 3 op laptop	Participant 2 stickers plakken	1,2,3
14:52:00	Participant 2 vraagt: how many stickers, 5?		2
14:52:00	Facilitator bevestigt dat het er 5 zijn		f
14:52:00	Participant 2 zegt dat hij ook klaar denkt te zijn		2
14:53:00	Facilitator zegt dat er een kleine pauze is		f
14:53:00	Participant 1 vraagt wat er nu is?		1
14:53:00	Facilitator zegt pauze		f

14:55-15:00 Break

Time	Observation	Activity	Actor
14:53:00	Participant 1 maakt grapje dat hij nu gaat praten met chat gpt	Facilitator haalt het blad van de flipover af	1,f
14:53:00	Facilitator zegt dat er bij eentje die iedereen opschreef geen stickers zijn geplakt		f
14:54:00	Participant 1 en 2 op telefoon en 3 op laptop in stilte	Facilitator is dingen aan het opschrijven	1,2,3,f
14:54:00	Participant 2 loopt de ruimte uit		2
14:55:00	Participant 3 kijkt naar het bord	Facilitator is blaadjes op het bord aan het plakken met veel stickers	3,f
14:55:00	Participant 1 rekt zich uit en kijkt wat Facilitator aan het doen is		1,f
14:56:00	Facilitator zegt dat Participant 3 het het beste heeft gedaan		3,f
14:56:00	Participant 3 maakt blije bewegingen en gooit met verpakkingen		3
14:56:00	Participant 1 en 2 lachen hard hierom		1,2
14:57:00	Facilitator vraagt om pleister		f
14:57:00	Facilitator en Participant 1 praten over nagelbijten en nagelriemen		1,f
14:57:00	Participant 2 komt terug met drinken		2
14:57:00	Facilitator legt het grote blad op tafel	Participant 1 zit op telefoon, Participant 3 achter laptop te typen	1,3,f
14:58:00	Participant 2 zit op telefoon		2
14:58:00	Facilitator stelt voor dat we ook verder kunnen gaan zodat we eerder klaar zijn		f
14:58:00	Participant 2 vraagt om een extra minute zodat hij iets kan checken	Participant 1 zit op mail, Participant 3 zit achter laptop	1,2,3
14:59:00	Participant 1 steekt duim op naar Facilitator		1,f
14:59:00	Participant 2 is klaar, Facilitator vraagt of Participant 3 er ook klaar voor is		2,3,f

15:00-15:05 *Select two critical driving factors*

Time	Observation	Activity	Actor
14:59:00	Facilitator legt uit wat hij heeft gedaan en wat nu de bedoeling is		f
14:59:00	iedereen kijkt naar het blad		1,2,3,f
15:00:00	Facilitator flipt het ding om en legt uit wat er gebeurt als ze een factor kiezen		f
15:00:00	Participant 3 stelt verduidelijkingsvraag		3
15:00:00	Facilitator: hebben jullie voorkeur voor een factor?		f
15:00:00	Participant 3: it won't drive a scenario, because it's very certain (weet niet over welke factor het gaat?)		3
15:01:00	Participant 1: is it certain?		1
15:01:00	Facilitator legt het uit aan Participant 3		3,f
15:01:00	Participant 3 it is very certain (het gaat over de black box)		3
15:01:00	Participant 3: we maken toch scenario's over de toekomst die onzeker zijn?		3
15:02:00	Facilitator vat mening van Participant 3 samen		3,f
15:02:00	Participant 3 legt het verder uit	Participant 1 en 2 kijken toe	1,2,3
15:02:00	Participant 3 zegt: Oh uncertainty?		3
15:02:00	Participant 3 komt erachter dat hij het heeft gedaan met certainty de blauwe dots		3
15:03:00	Participant 1 en 2 zeggen dat ze het wel hebben gedaan zoals de ppt		1,2
15:03:00	Participant 1 stelt een vraag		1
15:03:00	veel interactie, tussen Participant 3 en Facilitator, en tussen Participant 1 en 2		1,2,3,f
15:04:00	er is consensus over the black box en de grootte van bedrijven		
15:04:00	Facilitator haalt het blad eraf		f
15:04:00	Participant 3: de verticale as is full transparency en full black box	Facilitator schrijft de bovenkant en onderkant van de verticale as op	3,f
15:04:00	Facilitator vraagt wat er op de horizontale as komt		f
15:05:00	Participant 3 geeft antwoord op hoe hij het zegt		3
15:05:00	Participant 1 geeft een aanvulling		1
15:05:00	Participant 3: misschien moeten we het anders definiëren? High consolidation of labour		3
15:06:00	Facilitator vraagt wat ze daarmee bedoelen		f
15:06:00	Participant 1 en 3 leggen dit uit	Participant 2 zit elke keer te knikken	1,2,3
15:06:00	Facilitator vraagt wat ze dan op de andere as gaan zetten en doet een voorstel		f
15:06:00	Participant 3 zegt consolidation en fragmentation		3
15:07:00	Participant 2 en 3 lachen		2,3

15:07:00	Participant 3 praat over de twee uitersten van de axes	Facilitator schrijft de twee axes op	3,f
15:07:00	Participant 3 stelt een vraag (niet helemaal gevolgd):		3
15:07:00	Participant 2 is aan het nagelbijten ;)		2
15:08:00	Participant 1 luistert/kijkt naar Participant 3 terwijl hij vertelt, Participant 2 kijkt ook naar Participant 3 maar is aan het nagelbijten		1,2,3
15:08:00	Participant 1 rolt aan zijn horloges		1
15:08:00	Participant 2 zegt ja op iets wat Participant 3 zegt over retail en bol.com		2,3
15:09:00	Facilitator: ze zijn niet helemaal uitersten, maar ze zijn wel goed genoeg van elkaar te scheiden?		f
15:09:00	Participant 3 legt het nog 1 keer uit en Participant 2 knikt heel hard		1,2,3

15:05-15:10 Create 2x2 matrix

Time	Observation	Activity	Actor
15:04:00	Facilitator haalt het blad eraf		f
15:04:00	Participant 3: de verticale as is full transparency en full black box	Facilitator schrijft de bovenkant en onderkant op	3,f
15:04:00	Facilitator vraagt wat er op de horizontale as komt		f
15:05:00	Participant 3 geeft antwoord op hoe hij het zegt		3
15:05:00	Participant 1 geeft een aanvulling		1
15:05:00	Participant 3: misschien moeten we het anders definiëren? High consolidation of labour		3
15:06:00	Facilitator vraagt wat ze daarmee bedoelen		f
15:06:00	Participant 1 en 3 leggen dit uit	Participant 2 zit elke keer te knikken	1,2,3
15:06:00	Facilitator vraagt wat ze dan op de andere as gaan zetten en doet een voorstel		f
15:06:00	Participant 3 zegt consolidation en fragmentation		3
15:07:00	Participant 2 en 3 lachen		2,3
15:07:00	Participant 3 praat over de twee uitersten van de axes	Facilitator schrijft de twee axes op	3,f
15:07:00	Participant 3 stelt een vraag (niet helemaal gevolgd)		3
15:07:00	Participant 2 is aan het nagelbijten ;)		2
15:08:00	Participant 1 luistert/kijkt naar Participant 3 terwijl hij vertelt, Participant 2 kijkt ook naar Participant 3 maar is aan het nagelbijten		1,2,3
15:08:00	Participant 1 rolt aan zijn horloges		1
15:08:00	Participant 2 zegt ja op iets wat Participant 3 zegt over retail en bol.com		2,3
15:09:00	Facilitator: ze zijn niet helemaal uitersten, maar ze zijn wel goed genoeg van elkaar te scheiden?		f
15:09:00	Participant 3 legt het nog 1 keer uit en Participant 2 knikt heel hard		1,2,3

15:10-15:45 *Creating the scenarios*

Time	Observation	Activity	Actor
15:10:00	Facilitator legt de bedoeling uit		f
15:10:00	er wordt samen bepaald dat Participant 1 gaat schrijven en ze lachen om het slechte handschrift van Participant 2		1,2
15:10:00	Facilitator legt uit		f
15:10:00	Participant 3: wat bedoelen we met stakeholders? Uit welk perspectief?		3
15:10:00	Facilitator legt uit dat het vanuit KPMG is		f
15:11:00	Participant 1 zit op telefoon	uitleg over stakeholders	1
	Scenario 1		1
15:11:00	Participant 3 noemt risks en opportunities van 1		1,3
15:12:00	Participant 1 schrijft iets op		1
15:12:00	Facilitator zegt dat hij eerst een beschrijving wil		f
15:12:00	Participant 3: Oh je wil een beschrijving?		3
15:12:00	Participant 1 stelt verduidelijkingsvraag: oh dus we moeten opschrijven hoe scenario 1 eruit ziet?		1
15:12:00	Participant 3 geeft suggestie: veel untrust		3
15:13:00	Participant 1 geeft ook een aanvulling		1
15:13:00	Participant 2 kijkt naar buiten		2
15:13:00	Participant 1 en 3 praten over het scenario en Participant 2 kijkt toe		1,2,3
15:13:00	Participant 3 kijkt Participant 2 aan terwijl hij praat, Participant 2 knikt en lacht mee		2,3
15:13:00	Participant 2 checkt telefoon	Participant 1 is aan het schrijven,	1,2,3
15:13:00	Participant 3 zegt 'stakeholders' en kijkt op..	Participant 3 geeft nog meer aanvullingen	
15:14:00	Hij denkt na		3
15:14:00	Participant 3 begint een verhaal tegen Participant 2 over hoe annoying iets gaat zijn		2,3
15:14:00	Participant 3 gaat praten tegen Facilitator over legislation en audit en hoe het nu gaat	Participant 1 is aan het schrijven op het blaadje	1,3,f
15:15:00	Facilitator vraagt iets aan Participant 3 over legislation		3,f
15:15:00	Participant 3 legt het verder uit		3
15:15:00	Facilitator zegt: dit is dan ook een uncertainty die we kunnen toevoegen		f
15:15:00	Participant 1 gaat het opschrijven		1
15:15:00	Participant 1 vraagt wat hij moet opschrijven en Participant 3 antwoordt: algoritmes check algoritmes		1,3
15:16:00	Participant 3 denkt hardop na over wat ze vanuit high fragmentation zouden kunnen opschrijven vanuit het perspectief van KPMG		3
15:17:00	Participant 2 is aan het nagelbijten		2

	Participant 2 mengt zich voor het eerst in het gesprek en zegt iets in reactie op Participant 3		2,3
15:17:00	Participant 2 en 3 praten samen		2,3
15:17:00	Facilitator zegt iets over smaller firms		f
15:17:00	3 reageert dat ze niet de scope moeten verkleinen		3
15:18:00	Facilitator vraagt of ze ook niet naar smaller companies moeten kijken		f
15:18:00	Participant 3 legt uit waarom dat niet kan en dat ze te duur zijn		3
15:18:00	Participant 2 pakt zijn telefoon even, Participant 1 tikt op tafel		1,2
15:18:00	Participant 1 onderbreekt Participant 3 en geeft een toevoeging: increased competitie		1,3
15:19:00	Participant 1: is dat een risk?		1
15:19:00	Participant 3 lacht en zegt van wel: voor KPMG		3
15:19:00	Participant 2 lacht ook mee		2
15:19:00	Participant 3 pakt zijn laptop erbij	Participant 1 is aan het schrijven	1,3
15:19:00	Facilitator vraagt of ze een naam hebben voor het scenario		f
15:20:00	Participant 2 doet suggestie, Facilitator zegt, hoe ga je dan die eronder noemen		2,f
15:20:00	Participant 1 zegt fragmencybox, Participant 2 knikt		1,2
15:20:00	Facilitator wil het op het bord schrijven, dan zegt Participant 3 'chaos'		3,f
15:21:00	Participant 3 komt ook nog met skynet		3
	Scenario 2		2
15:21:00	Facilitator zegt dat er veel overgenomen kan worden, Participant 1 gaat gelijk schrijven		1,f
15:21:00	Participant 1 zegt vragend: vanuit het KPMG perspectief?		1
15:21:00	Participant 1 en 3 praten samen over dat perspectief		1,3
15:21:00	Participant 2 doet een aanvulling		2
15:22:00	Participant 3 reageert hierop	Participant 1 is aan het schrijven	1,3
15:22:00	Facilitator zegt : is het niet een risico en kans?		f
15:22:00	Participant 3 reageert daarop		3
15:23:00	Participant 2 en 3 kijken naar de matrix	Participant 1 is aan het schrijven	1,2,3
15:23:00	Participant 2 checkt zijn telefoon		2
15:23:00	Participant 3: wat is een goede naam voor 3 en 4?		3
15:23:00	Participant 1 niest		1
15:23:00	Facilitator zegt dat ze eerst moeten focussen op scenario 2		2,f
15:23:00	Participant 1 gaat over scenario 2 praten		1,2
15:24:00	Participant 3 reageert hier op		3

	Facilitator: is dat vanuit KPMG of het hele grote plaatje?	f
15:24:00	Participant 1 antwoordt het grote plaatje	1
15:24:00	Participant 3 doet een toevoeging	3
15:24:00	Facilitator stelt een vraag aan 3	3,f
15:25:00	Participant 3 denkt na en weet niet of dit negatief of positief is	3
15:25:00	Participant 2 checkt zijn telefoon	2
15:25:00	Participant 1 checkt zijn telefoon, Participant 3 en Facilitator zijn aan het praten	1,3,f
15:25:00	iedereen weet het niet meer en kijkt naar elkaar	
	Scenario 3	3
15:26:00	Participant 3 vat het scenario samen: AI is een public service	3
15:26:00	Participant 1 gaat schrijven	1
15:26:00	Participant 3 denkt na over een naam	3
15:26:00	Facilitator zegt: open AI?	f
15:26:00	Participant 2 gaapt, interactie tussen Participant 2, 3, en Facilitator over de naam	2,3,f
15:27:00	Facilitator schrijft de naam op, Participant 3 kijkt naar buiten, Participant 1 naar de matrix en Participant 2 bijt nagels	1,2,3,f
15:27:00	Participant 1 stelt een vraag die Participant 3 beantwoordt	1,3
15:27:00	Participant 1 doet suggesties voor wat op te schrijven	1
15:28:00	Participant 3 vult Participant 1 aan en bevestigt het	1,3
15:28:00	Facilitator zegt wat het grootste verschil is tussen 3 en ik denk 4?	3,f
15:28:00	Participant 1 en 3 bevestigen dit	1,3
15:28:00	Facilitator: we hebben nu geen wetten erin meegenomen, maar wat als we dat wel zouden doen?	f
15:28:00	Participant 1 geeft zijn mening hierover	1
15:29:00	Participant 3 zegt dat je moet opletten wat je op de axes zet, want soms is het niet logisch en correleren ze met elkaar	3
15:29:00	Facilitator vraagt of Facilitator dit hier het geval is	f
15:30:00	Participant 3 zegt dat ze hier genoeg unrelated zijn	3
15:30:00	ze lachen allemaal ergens om	
15:30:00	Participant 3 gaat weer op zijn laptop zitten	3
15:30:00	Participant 1 vraagt of ze door kunnen naar de volgende?	1
15:30:00	Facilitator benoemt dat ze steeds korter worden	f

15:30:00	Participant 1 gaat verder dingen opnoemen die erbij kunnen, Participant 3 zit nog steeds op laptop, Participant 2 kijkt voor zich uit en bijt op zijn nagels	1,2,3
15:31:00	Participant 3 lacht achter zijn laptop Participant 3 zegt: sorry wat? Waar? Nadat Facilitator iets had aangewezen (hij keek op zijn laptop)	3
15:31:00	Facilitator legt het uit en praat daarna erover met Participant 3	3,f
15:31:00	Participant 2: is dit misschien ook een mogelijkheid voor audit?	3,f
15:32:00	Participant 3 antwoordt bevestigend, Participant 2 praat verder en Participant 1 knikt	2
15:32:00	Facilitator zegt dat hij geniet van de namen	1,2,3
15:32:00	iedereen lacht	f
15:32:00	Participant 3 rekt zich vrij breed uit en iedereen denkt over een naam voor scenario	
15:32:00	4	3
Scenario 4		
15:33:00	Participant 1 is aan het appen	1
15:33:00	Participant 3 en Facilitator praten over het scenario	3,f
15:33:00	Participant 2 lacht en benoemt de axes van het scenario	2
15:34:00	Participant 2 en 3 denken na, Participant 1 zit op telefoon	1,2,3
15:34:00	Participant 3: het is een beetje een vreemde, it becomes asset heavy, like shell	3
15:34:00	Participant 1 bevestigt dit, Participant 2 bijt op zijn nagels en gaat verzitten	1,2
15:35:00	Participant 2 checkt zijn telefoons	2
15:35:00	Participant 1 en 3 praten over het scenario en Participant 1 gaat dingen opschrijven	1,3
15:35:00	Participant 2 gaat op zijn laptop	2
15:35:00	Participant 1: betekent dit iets voor KPMG? Participant 3 praat over het scenario en Heineken (zal jij ook wel kunnen gebruiken met deze warmte), Participant 1 luistert en	1
15:36:00	Participant 2 zit op zijn laptop te scrollen ik heb even iets gemist, maar jullie praatten gewoon over het scenario	1,2,3
15:37:00	Participant 2 klapt zijn laptop dicht	2
15:37:00	Participant 3 praat over consolidation en Participant 1 schrijft iets op	1,3
15:38:00	Participant 1 zegt 'ja' en gaat weer iets opschrijven	1
15:38:00	Facilitator: dit zijn manieren om van het midden naar high consolidation te komen	f

15:38:00	Participant 3 bevestigt dit en Participant 1 vraagt wat als dit scenario er is?		1,3
15:38:00	Participant 3 weet het niet goed en denkt hard na met zijn ogen dicht en handen voor zijn oog		3
15:39:00	Participant 2 knikt als 'trustworthy management services' zegt	Participant 1 schrijft het scenario op	1,2
15:39:00	Participant 3: than we become a knowledge center, that's a tricky business		3
15:40:00	Participant 1 en 2 lachen, Participant 1 schrijft dit risico op		1,2
15:40:00	Facilitator praat ergens over wat ik niet meer weet		f
15:40:00	Participant 3 werkt op zijn laptop		3
15:40:00	iedereen lacht		
15:40:00	Facilitator vraagt naar de naam		f
15:40:00	iedereen denkt na over een naam		
15:41:00	Participant 2 vraagt wat er nu opgeschreven is, Participant 1 leest dit voor en Participant 3 zit op zijn laptop te werken		1,2,3
15:41:00	Facilitator zegt survival of the fittest		f
15:41:00	Participant 1 en Facilitator schrijven dit op en Participant 2 gaat weer op zijn laptop werken, Participant 3 deed dit al		1,2,3,f
15:42:00	Participant 1 pakt ook zijn laptop		1
15:42:00	Facilitator: zijn we happy met de scenario's?		f
15:42:00	Participant 3 is aan het kijken naar movie AI		3
15:42:00	Participant 1 , 3 en Facilitator praten over de naam		1,3,f
15:43:00	Participant 2 zit op zijn telefoon en Participant 3 kijkt voor een naam op zijn laptop		2,3

15:45-15:45 *Discuss scenarios*

Time	Observation	Activity	Actor
15:43:00	Facilitator legt uit dat er nu geen discussie is, omdat ze het met elkaar gedaan hebben		f

15:45-15:50 *Individually rank scenarios*

Time	Observation	Activity	Actor
15:43:00	Participant 1 en 2 kijken naar Facilitator, Participant 3 kijkt naar zijn laptop		1,2,3,f
15:43:00	Participant 3 kijkt nu ook naar Facilitator	Facilitator geeft uitleg over het ranking	3,f,f
15:44:00	Participant 3: we hebben dat al gedaan?		3
15:44:00	Facilitator legt uit dat het anders is dan bij de factoren		f
15:44:00	Participant 1 helpt hem met het uitleggen		1
15:44:00	Participant 3: is het nu niet de multiple?		3
15:45:00	Facilitator legt iets uit over de likelihood		f
15:45:00	Participant 1 zegt: we moeten kijken over 10 jaar		1
15:45:00	Participant 1 gaat gelijk schrijven, Participant 3 denkt even na en zet daarna cijfers neer		1,3
15:46:00	Participant 2 doet niks en Facilitator geeft nog extra verduidelijking over wat de bedoeling is aan Participant 3		2,3,f
15:47:00	Participant 3 werkt op zijn laptop	ranking scenarios	3
15:47:00	Participant 2 zegt dat hij moeite heeft met scenario 4		2
15:48:00	Participant 1 zegt dat hij het moeilijk vindt		1
15:48:00	Participant 1 en 2 vinden allebei 4 het moeilijkst		1,2
15:48:00	Facilitator trekt het blad er nu wel goed af, maar mist een klein stukje		f

15:50-15:55 *Create final impact-likelihood matrix*

Time	Observation	Activity	Actor
15:48:00	Facilitator vraagt aan Participant 1 waar hij scenario 1 heeft gezet	scenario 1 ranken	1,f
15:49:00	Facilitator vraagt of Participanten 2 en 3 het daar ook mee eens is		2,3,f
15:49:00	Facilitator verplaatst het kaartje een beetje op basis van Participant 2 zijn antwoord		2,f
15:49:00	Participant 3 antwoordt de vraag van Facilitator wat hun gedachten erbij zijn		3,f
15:49:00	Participant 1 zegt waarom hij het medium vindt, omdat ze er nu al een beetje zijn		1
15:50:00	Facilitator zegt iets wat ik niet meer weet, Participant 3 zit op laptop en de rest is actief mee aan het doen		3,f
15:50:00	er is een gesprek tussen Participant 1, 2 en Facilitator over scenario 1		1,2,f
15:50:00	Participant 1 en 2 zeggen dat hij nog iets hoger moet en dat doen ze		1,2
15:51:00	Participant 2 zegt waar hij scenario 2 heeft geplaatst	scenario 2 ranken	2
15:51:00	Participant 1 heeft dat ook,		1
15:51:00	Participant 3 is het er ook mee eens		3

15:51:00	Participant 3 zegt waar hij scenario 3 heeft geplaatst	scenario 3 ranken	3
15:51:00	Participant 1 zegt waar hij het heeft gedaan en Facilitator verplaatst hem een beetje		1,f
15:52:00	Participant 1 vertelt waar hij scenario 4 heeft gedaan (high impact, low likelihood)	scenario 4 ranken	1
15:52:00	Participant 3 zegt dat hij het tegenovergesteld heeft gedaan		3
15:52:00	Participant 2 zegt dat hij medium medium deed omdat hij het niet weet		2
15:52:00	Participant 3 zegt wat het compromis is van alle drie hun plaatsingen		3
15:52:00	Participant 1 vraagt aan Participant 3 waarom hij hem daar geplaatst heeft (ik denk low impact en high likelihood, maar weet ik niet zeker)		1,3
15:53:00	Participant 3 legt dit uit, Participant 2 bijt weer nagels		2,3
15:54:00	Participant 2 en 3 bevestigen dat het een moeilijke is als Participant 1 dat zegt		1,2,3
15:54:00	Participant 1 zegt dat hij het misschien ergens anders had gedaan 5 min later		1
15:54:00	Participant 1 checkt zijn telefoon, Participant 2 klapt zijn laptop open, Participant 3 zit achter zijn laptop		1,2,3
15:54:00	Facilitator zegt wat de meest waarschijnlijke is: scenario 2		2,f

15:55-16:05 Answer key question

Time	Observation	Activity	Actor
15:55:00	Facilitator legt het scenario 2 (gekozen) uit en laat de key question zien		2,f
15:55:00	iedereen kijkt naar de matrix		
15:55:00	Participant 3 werkt op zijn laptop		3
15:55:00	Participant 1 antwoordt dat vindt dat er moet geïnvesteerd worden, daarna is hij lang stil, hij praat weer verder		1
15:55:00	Participant 3 is het ermee eens		3
15:56:00	Facilitator : wat zijn de beste stappen om te ondernemen?		f
15:56:00	Participant 3 zegt gelijk partnerships, alliance partners, hij legt dit verder uit		3
15:56:00	Participant 1 checkt zijn telefoon		1
15:56:00	Participant 3 kijkt Participant 2 aan als hij praat, Participant 2 knikt meerdere keren, Participant 1 zit nog steeds op telefoon		1,2,3
15:57:00	Facilitator lacht en vat samen wat Participant 3 zei		3,f
15:57:00	Participant 3 zegt ja, en dat doen we ook al: partnerships aangaan met de grote spelers		3

15:57:00	Participant 1 friemelt aan de stickertjes en is klaar met zijn telefoon	1
15:58:00	Participant 2 stelt een verduidelijkingsvraag aan 3	2,3
15:58:00	Participant 3 antwoord op de vraag en Participant 1 en Participant 3 lachen	1,3
15:58:00	Participant 3 zegt dat ze dit nu eigenlijk al doen	3
15:59:00	Participant 2 zegt dat het misschien een makkelijke vraag was, hij vertelt iets over het verschil met Brazilië en verduidelijkt dat hij dus wilde weten hoe het hier gaat en of dat anders is	2
15:59:00	Participant 3 licht dit verder toe	3
16:00:00	Participant 1 en 2 knikken	1,2
16:00:00	Facilitator stelt een vraag over atos	f
16:00:00	Participant 3 antwoordt hierop	3
16:01:00	Facilitator: don't we think that they are going to consolidate?	f
16:01:00	Participant 1 zit op zijn telefoon op de website van KPMG over digital services er is een gesprek tussen Participant 2, 3 en Facilitator	1 2,3,f
16:01:00	Participant 1 zit op whatsapp	1
16:02:00	Facilitator stelt een vraag over hoe iets nu gaat?	f
16:02:00	Participant 3 legt dit uit en Participant 2 knikt	2,3
16:02:00	Participant 2 geeft extra toelichting, Participant 1 is er weer bij en weg van zijn telefoon	1,2
16:02:00	Participant 3 gaat op zijn telefoon	3
16:02:00	Facilitator vat het antwoord op de vraag samen: yes, with partnerships	f
16:03:00	Facilitator zegt dat dit het einde is	f

16:05-16:20 Complete questionnaire

Time	Observation	Activity	Actor
16:03:00	Participant 1 zegt: geen mentimeter?		1
16:03:00	Facilitator deelt de vragenlijsten uit		f
16:03:00	Participant 3 vraagt wat er met de eerste vraag bedoelt werd en geeft mogelijke antwoorden: zittend, wakker etc.		3
16:04:00	iedereen lacht		
16:04:00	Participant 3 vraagt wat hij voor antwoorden zoekt		3
16:04:00	Facilitator legt wat meer uit van de vraag		f
16:04:00	Participant 2 maakt een opmerking over de anonimiteit en dat Facilitator nu weet hoe iedereen schrijft		2,f
16:05:00	iedereen lacht		
16:05:00	Facilitator legt uit wat hij met de vragenlijsten gaat doen		f
16:05:00	Facilitator loopt weg	iedereen is druk aan het schrijven	f
16:05:00	Participant 3 kijkt even op, verder is iedereen aan het schrijven		3
16:05:00	Participant 1 kijkt voor zich uit	Participant 2 en 3 schrijven	1,2,3
16:06:00	Facilitator komt terug en heeft nu zijn blouse aan		f
16:06:00	Facilitator gaat op een stoel zitten en beweegt even zijn nek heen en weer	Participant 1, 2 & 3 schrijven	1,2,3,f
16:06:00	Facilitator staart naar buiten		f
16:06:00	Participant 1 is klaar met de eerste pagina en slaat het blad met een groot gebaar om		1
16:07:00	Participant 1 checkt hoeveel kantjes er nog zijn	Participant 2 en 3 schrijven	1,2,3
16:07:00	Facilitator zegt: veel vragen hè?		f
16:07:00	Participant 1 slaat nog een blaadje om en is nu bij pagina 3, Participant 2 en 3 zijn nog bij pagina 1		1,2,3
16:08:00	Participant 2 denkt even na over vraag 3 op pagina 1 en begint daarna te schrijven		1,2,3
16:08:00	Participant 3 kijkt naar buiten		3
16:08:00	Participant 1 is klaar met alles en gaat op zijn telefoon		1
16:09:00	Facilitator geeft hem bonuspunten voor de snelheid		f
16:09:00	Participant 2 en 3 zijn nog aan het schrijven		2,3
16:09:00	Participant 2 gaat naar pagina 2		2
16:09:00	Facilitator zit op zijn telefoon en kijkt zeer serieus	Participant 2 en 3 schrijven	2,3,f
16:10:00	Participant 3 schrijft een heel epistel bij de derde vraag op pagina 1		1,3
16:10:00	Participant 3 gaat naar pagina 1		1,3
16:10:00	Facilitator benoemt dat Participant 3 nog op pagina 1 was		1,3,f
16:11:00	Participant 2 en 3 zijn druk aan het schrijven		2,3

16:11:00	Participant 2 zucht, kijkt op en denkt even na		2
16:12:00	Participant 2 en 3 zijn nu allebei bezig met de vakjes aankruisen		2,3
16:12:00	Facilitator zit met zijn ogen dicht te chillen		f
16:12:00	Participant 2 en 3 gaan allebei naar pagina 3		2,3
16:12:00	Participant 1 pakt zijn sleutels		1
16:12:00	Facilitator zegt dat er alleen maar een dankjewel slide komt en dat hij weg kan		f
16:13:00	Facilitator en Participant 1 kletsen over tennis	Participant 2 en 3 schrijven	1,2,3,f
16:13:00	Participant 3 stopt met schrijven en reageert op het tennissen	Participant 2 schrijft	2,3
16:14:00	gesprek over tennis tussen Participant 1 en 3	Participant 2 schrijft	1,2,3
16:14:00	Participant 2 en 3 zijn aan het schrijven		2,3
16:14:00	Participant 2 en 3 denken even na en kijken naar hun papier		2,3
16:15:00	Participant 1 en Facilitator praten over de lelijke manier en		1,f
16:15:00	Participant 2 zegt over de laatste vraag: chat GPT en Participant 1 en 3 lachen	Participant 3 blijft schrijven	1,2,3
16:15:00	Participant 1 zegt: menimeter		1
16:15:00	Facilitator zegt: kahoot en doet het muziekje na		f
16:16:00	Facilitator zegt iets wat volgens mij over vraag 3 gaat en waar je aan kunt denken, maar ik let niet genoeg op		3,f
16:16:00	Participant 3: hoe hadden we de swot-analysis kunnen gebruiken?		3
16:16:00	Facilitator legt uit hoe dit had gekund		f
16:16:00	Participant 1 doet een toevoeging en Facilitator legt het nog verder uit		1,f
16:17:00	Participant 3: dan hadden we de swot analysis separate moeten doen en niet voor alle analyses?		3
16:17:00	Facilitator bevestigt dit		f
16:17:00	Participant 3 legt uit hoe hij het vaak doet, met external factorials, verschillende trends. Dit gaat over strategies meetings		3
16:18:00	Participant 2 is klaar met de vragenlijst en gaat op zijn laptop, Participant 1 zit op zijn telefoon en 3 en Facilitator praten over dingen		1,2,3,f
16:18:00	Facilitator vraagt aan Participant 3 hoe ze trends selecteren?		3,f
16:18:00	Participant 3 zegt dat ze iets doen met radars en legt zijn feedback uit aan Facilitator: participanten weten de trends vaak niet, dus zij leggen de trends al vaak voor aan de participanten en ze creëren ook al vaak scenarios's		3,f

16:19:00	Participant 3 laat zien dat hij net ook scenario's heeft lopen maken aan Facilitator		3,f
16:20:00	Participant 2 klapt zijn laptop dicht en Participant 1 zit op zijn telefoon	Facilitator en Participant 3 praten over hoe 3 scenario's maakt	1,2,3,f
16:21:00	Participant 1 doet zijn telefoon in zijn zak		1
16:21:00	Participant 3 is ook klaar, blijkbaar al even		3

16:20-16:35 Thank you & Closing

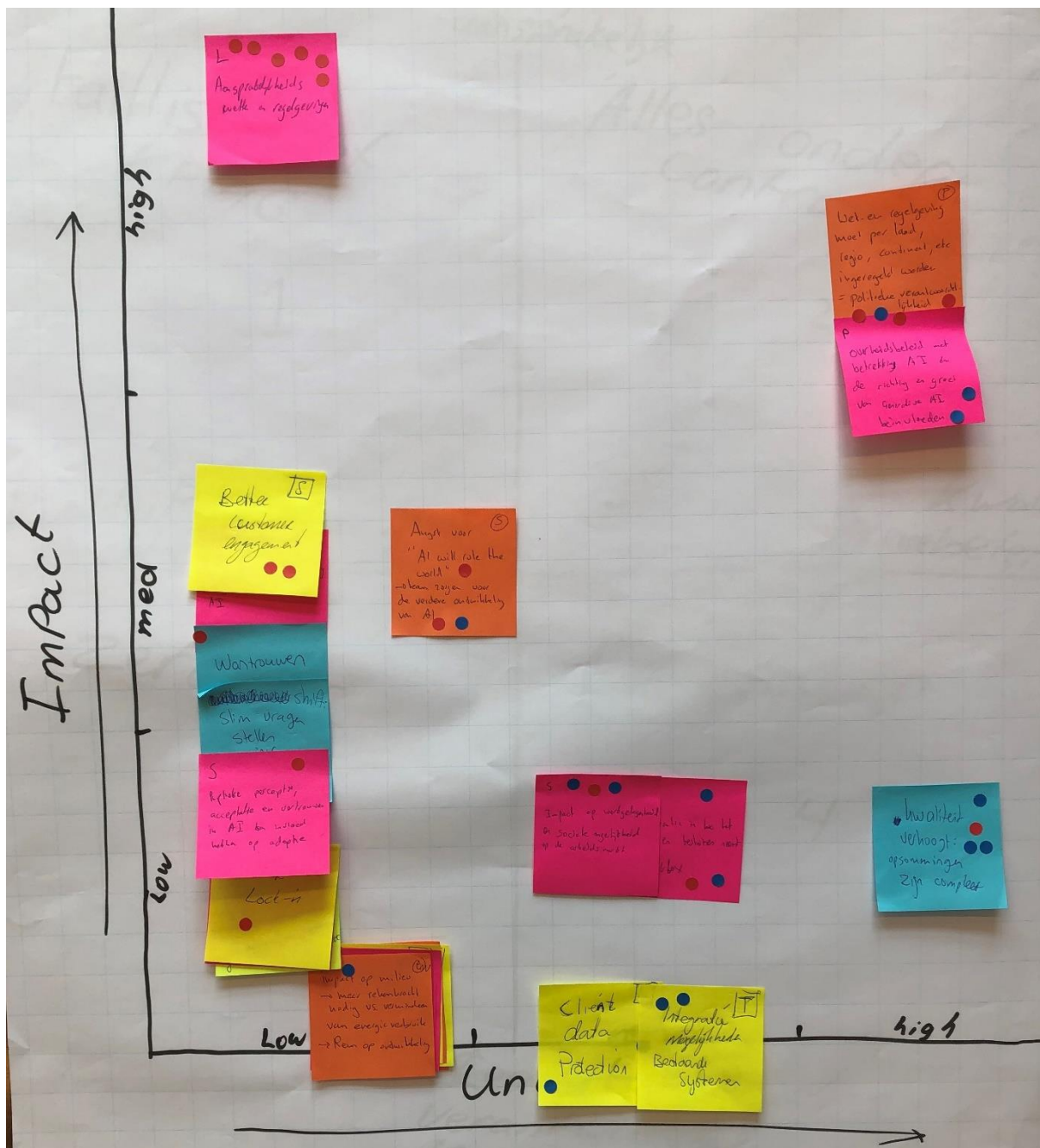
Time	Observation	Activity	Actor
16:21:00	Participant 1 en 2 ruimen op	Facilitator bedankt iedereen	1,2,f
16:21:00	Facilitator vraagt wat Participant 2 op de verfrommelde memo's had geschreven		2,f
16:22:00	iedereen gaat weg		1,2,3

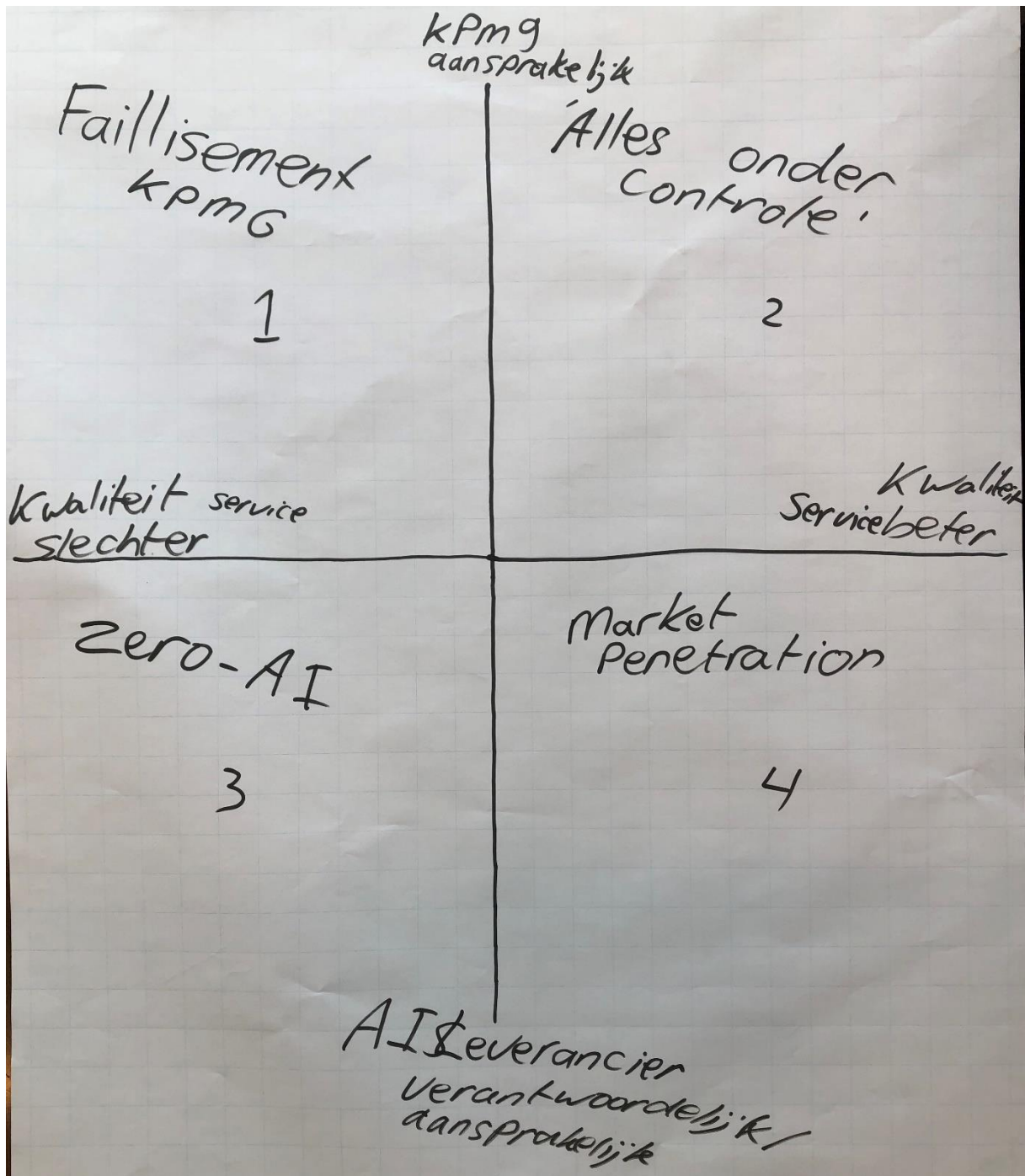
Appendix D – Workshop 2 results

Appendix D1 – PESTLE-analysis



Appendix D2 – Impact-uncertainty matrix





Scenario Template

Scenario 1

Participant: Team 1

Key issue: ^① kwaliteit KPMG dienstverlening gaat achteruit met de inzet van GenAI.
^② KPMG is volledig aansprakelijk voor ~~de~~ ^{het} geleverde advies aan de klant.

Assumptions: ^① KPMG zet voor een groot deel van haar dienstverlening GenAI in.

^① Gebruikte output (GenAI) wordt volledig voor 'waar' aangenomen.

Scenario: KPMG verliest rechtzaak, equity partners zijn al hun investeringen kwijt. KPMG vraagt haar faillissement aan, gedwongen door haar volledige aansprakelijkheid.

Scenario Template

Scenario 2: "alles onder controle"

Participant:

Risks:

- als FPMG aansprakelijk is, is er veel kans op rechtspaken bij foutieve adviezen
- Omdat FPMG aansprakelijk is, moeten ze nog meer controles en audit uitvoeren, om dit risico te mitigeren

Opportunity:

- aangezien de service verbetert, zal de klant tevredenheid ook verbeteren
- Betere geïnformeerde beslissingen
- verbeterde efficiëntie, dus je kan meer zaken tegelijk behandelen

Scenario Template

Scenario 3

"Zero AI"

Participant:

Risks:

- klant reputatie schade door slecht advies
- klantverlies, slechte kwaliteit,
- verkeerde info aan bedrijven & aanmoediging slechte bestellingsopties.

- KPMG heeft minder op audit en Rist confides & & uitvoeren aangezien ze toch wel aansprakelijk zijn

De ba alles op de provider verhalen

- De leverancier stopt ermee dus BMP's kan het niet meer gebruiken

- hmg moet eventueel extra juridische stappen ondernemen

Scenario Template

Scenario 4

Participant: Team 2

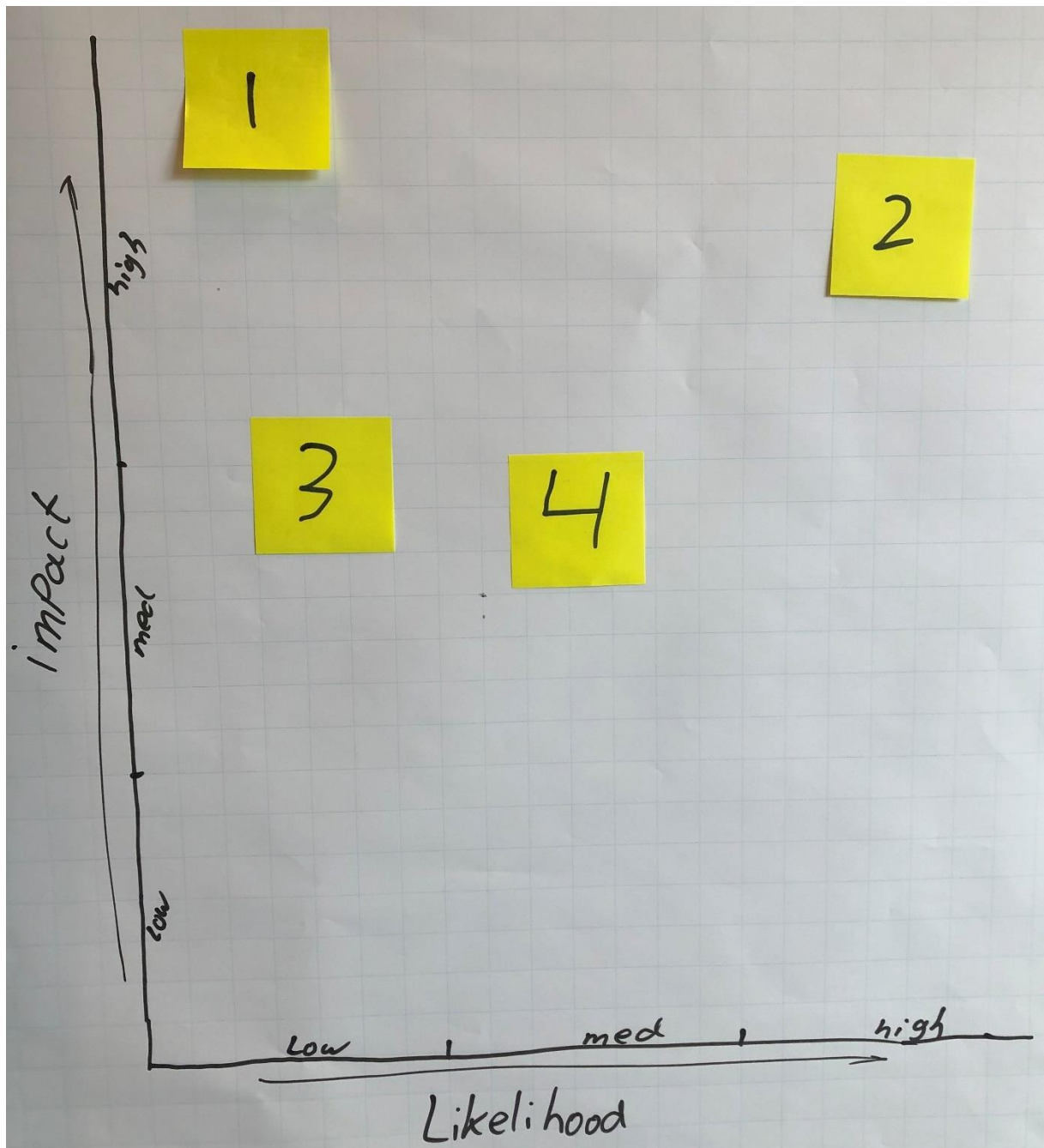
Key issues: Is het merk KPMG nog ietwaard
wanneer zij niet meer verantwoordelijk is voor
de geleverde output?

Assumptions: zie Scenario 1

Scenario: KPMG breidt service portfolio uit
met goedkope Gen AI gebaseerde dienstverlening
voor breder klantengroep (lagere segment) met minimale
invloed van menselijke tussenkomst.

Daarnaast bestaande dienstverlening op waard
geramelijk met de klant en KPMG consultants
als ultieme controleslag → inzet menselijke
analyse. Dit alles voor een hoog tarief.

Appendix D5 – Impact-likelihood matrix



Appendix D6 – Observations

14:00-14:05 Introduction workshop & agenda

Time	Observation (wat observeer ik)	Activity (wat speelt zich af)	Actor
14:05:00	Participant 1, 2, 3, 4 en 5 zijn aanwezig	Facilitator introductie	1,2,3,4,5,f
14:05:00	Participanten lachen allemaal om iets wat facilitator zegt		f
14:05:00	Participant 3 typt op zijn laptop, de rest kijkt naar facilitator		3,f
14:06:00	Participant 3 legt zijn laptop hard op tafel		3
14:06:00	Participant 5 zit een beetje aan zijn laptop		5
14:07:00	Participant 2 lacht omdat er een observator is die een sfeerimpressie maakt		2
14:07:00	Participant 1, 2, 3 en 4 kijken naar facilitator, terwijl 5 een beetje rondkijkt		1,2,3,4,5,f

14:00-14:05 Communicate goal

Time	Observation (wat observeer ik)	Activity (wat speelt zich af)	Actor
14:08:00	Participant 2 knikt op iets wat facilitator zegt		2,f
14:08:00	Participant 5 wrijft met zijn hand over zijn wang en kijkt afgeleid rond		5

14:10-14:15 Present key question

Time	Observation	Activity	Actor
14:10:00	Participant 3 speelt met zijn pasje		3
14:10:00	Participant 5 kijkt veel rond		5
14:10:00	Participant 4 deelt memoblokjes aan iedereen uit er is wat rumoer en meerdere participanten praten tegelijk		4
14:11:00	Participant 3 en Participant 4 stellen een vraag		3,4
14:11:00	Participant 4 maakt een grapje, niemand lacht		4
14:11:00	Participant 2 stelt een vraag		2
14:12:00	Participant 4 praat door een vraag van Participant 5 heen		4,5
14:12:00	Participant 4 eet iets en begint al met schrijven		4

14:15-14:25 Identify driving factors

Time	Observation	Activity	Actor
14:12:00	Participant 1 en 2 beginnen met schrijven, Participant 4 stelt een vraag, Participant 3 en 5 doen niks		1,2,3,4,5
14:13:00	Participant 5 typt op zijn laptop		5
14:13:00	Participant 2 zucht diep en stelt nog een vraag		2
14:13:00	Participant 2 verfrommelt zijn eerste memo		2

14:14:00	Participant 3 schrijft iets op een briefje en maakt er een tekeningetje op. Legt het op zijn laptop	3
14:14:00	Participant 1 heeft in stilte al drie memo's afgemaakt	1
14:14:00	Participant 5 kijkt naar zijn laptop en bord terwijl hij op een briefje schrijft	5
14:15:00	Participant 3 speelt met zijn pen	3
14:15:00	Participant 4 schrijft memo's en plakt ze bovenop elkaar	4
14:16:00	Participant 3 zucht en kijkt naar het scherm	3
14:16:00	Participant 3 begint weer met schrijven, plakt weer een briefje op zijn laptop	3
14:16:00	Participant 3 kijkt steeds lang naar het bord tussen het maken van briefjes	3
14:17:00	Participant 4 maakt nog een briefje af en plakt hem onderaan de stapel	4
14:17:00	Participant 5 heeft ondertussen drie briefjes af	5
14:17:00	Participant 1 is nog steeds stil.	1
14:18:00	Participant 1 verfrommelt zijn vierde briefje	1
14:18:00	Participant 3 en Participant 5 hebben een kort gesprekje over een eerdere ervaring en iets over strings	3,5
14:18:00	Participant 4 kijkt af bij Participant 5 en zegt dat ze klaar is	4,5
14:19:00	Participant 1 heeft zijn vierde briefje af en kijkt naar het bord	1
14:19:00	Participant 2 zucht weer en kijkt naar het bord. Hij schrijft verder	2
14:19:00	Participant 4 verfrommelt aluminiumfolie	4
14:19:00	Participant 3 vraagt of Microsoft chatgpt gekocht heeft	3
14:20:00	Participant 1 heeft nog steeds niks gezegd, heeft zijn vijfde briefje af	1
14:20:00	Participant 4 kijkt haar briefjes na	4
14:20:00	Participant 1 verfrommelt zijn zesde briefje	1
14:20:00	Participant 3 tikt met zijn vingers op zijn laptop en kijkt een beetje rond	3
14:21:00	Participant 5 heeft ondertussen veel briefjes af en gaat typen op zijn laptop	5
14:21:00	Participant 5 vraagt kort aan Facilitator of hij later nog dingen mag opschrijven	5,f
14:21:00	Participant 3 plakt nog een briefje hard op zijn laptop en speelt met zijn pen	3
14:22:00	Participant 2 zucht en rekt zich uit nadat hij zijn briefje afgemaakt heeft. Hij vraagt aan Facilitator of hij al mag plakken	2,f
14:22:00	Participant 2 zit op zijn telefoon	2

14:23:00	Participant 4 zucht en legt haar pen hard neer	4
14:23:00	Participant 1 plakt zijn briefjes heel netjes op elkaar	1

14:25-14:35 *Discuss key driving factors*

Time	Observation	Activity	Actor
14:23:00	Participant 4 presenteert haar memo's.		4
14:23:00	Participant 3 kijkt naar de grond. Participant 1, 2 en 3 kijken naar Participant 4		1,2,3,4
14:24:00	Participant 5 knikken maakt instemmende geluiden		5
14:24:00	Participant 3 fluistert iets naar Participant 2, die vervolgens instemmend geluid maakt		2,3
14:25:00	Participant 2 stelt een vraag aan Participant 4. hij beweegt veel met zijn handen		2,4
14:25:00	Facilitator en Participant 2 lachen om iets wat Participant 4 zegt		2,4,f
14:26:00	Participant 3 frummelt met zijn memo's		3
14:26:00	Participant 2 lacht naar de observator <3		2,3
14:26:00	Participant 1 luistert en kijkt aandachtig naar Participant 4		1,4
14:27:00	Participant 3 gaat staan om zijn memo's te presenteren. Hij zucht		3
14:27:00	Participant 5 lacht en tikt op zijn laptop		5
14:27:00	Participant 4 frummelt met haar vinger tegen haar tanden en met haar sieraden. Kijkt wel naar Participant 3		3,4
14:28:00	Participant 1 zucht		1
14:28:00	Participant 4 gaapt en kijkt wisselend naar Participant 3 en zijn laptop		3,4
14:28:00	Participant 3 plakt zijn laatste memo op het bord en zucht een beetje. Hij beantwoordt een vraag van f		3
14:29:00	Participant 2 gaat staan om zijn memo's te presenteren		2
14:29:00	Participant 1 frummelt weer met zijn memo's		1
14:29:00	Participant 2 legt uit dat post-its eigenlijk zijwaarts geplakt moeten worden. De rest lacht		2
14:30:00	Participant 3 frummelt met een memo-verpakking		3
14:30:00	Participant 3 en Participant 4 hebben een onderonsje over iets wat Participant 3 zegt over een memoblok. Participant 4 en Participant 5 lachen		3,4,5
14:31:00	Participant 1 zucht en kijkt moeilijk. Gaat staan om zijn dingen te presenteren. De rest praat erdoorheen		1
14:31:00	Participant 2, 3, 4 en 5 kijken naar Participant 1		1,2,3,4,5
14:32:00	Participant 2 speelt met een pen in zijn hand		2
14:32:00	Participant 3 en Participant 5 knikken		3,5
14:32:00	Participant 5 gaat staan om te presenteren		5
14:33:00	Participant 2 is aan het spelen met een memoblok		2

	Participant 5 praat over iets met zelfmoord en Italië en chatgpt. Participant 3 en 4 knikken.	
14:33:00	Participant 2 lacht	2,3,4,5
14:33:00	Participant 1 lacht om iets anders. Hij friemelt aan zijn baard	1
14:34:00	Participant 3 zit op zijn telefoon	3
14:34:00	iedereen knikt instemmend op iets wat Participant 5 zegt	5
14:34:00	Participant 4 maakt een grapje en kijkt naar Participant 3, niemand lacht	3,4
14:35:00	Participant 2 knikt zo hard dat zijn stoel heen en weer gaat	2
14:35:00	Participant 3 pakt weer zijn telefoon en typt erop	3
14:35:00	Participant 2 maakt een grapje over intelligentie van ai, Participant 3 en Participant 4 lachen	2,3,4
14:35:00	Participant 3 legt zijn telefoon hard op tafel	3
14:36:00	Participant 5 gaat weer zitten. Hij strekt zijn rug en typt op zijn laptop	5

14:35-14:45 Prioritise driving factors

Time	Observation	Activity	Actor
14:36:00	het scherm valt uit als Facilitator weer wat wil zeggen. Participant 3 zit aan de beamerding		3,f
14:37:00	Participant 2 gaat staan en een flesje uit zijn tas halen. Hij zet de tas hard op de grond		2
14:37:00	Participant 2 vraagt of iemand het raam open wil er zijn wat technische problemen.		2
14:38:00	Participant 4 zit op haar telefoon		4
14:38:00	Participant 1 frummelt met zijn verfrommelde memo's		1
14:38:00	Participant 3 speelt met een pen		3
14:38:00	Participant 4 legt haar telefoon weer weg en maakt een instemmend geluid op iets wat Facilitator zegt over de toekomst van ai		4,f
14:39:00	iedereen kijkt naar Facilitator, behalve Participant 5, die zit op zijn laptop		5,f
14:39:00	Participant 3 pakt zijn telefoon en tikt erop		3
14:39:00	Participant 2 vraagt iets, Participant 1 maakt een instemmend geluid		1,2
14:40:00	Participant 1,2,3 en 4 lopen naar het bord.		1,2,3,4
14:40:00	Participant 4 zingt		5
14:40:00	Participant 5 blijft zitten en typt op zijn laptop		5
14:40:00	Participant 2 vraagt iets aan Participant 4 over chatgtp		2,4
14:41:00	Participant 1, 2 , 3 en 4 beginnen met stickers plakken		1,2,3,4
14:41:00	Participant 5 gaat staan en typt op zijn laptop		5
14:42:00	Participant 2 stelt een vraag aan Facilitator en plakt een sticker		2,f
14:42:00	Participant 5 lacht om iets op zijn laptop		5
14:42:00	Participant 5 kijkt samen met Facilitator naar zijn laptop		5,f

14:42:00	Participant 5 gaat nu ook bij de rest staan bij het bord	5
14:43:00	er is wat discussie en gemompel	
14:43:00	Facilitator leest de verfrommelde briefjes van Participant 1	1,f
14:43:00	Participant 1 blijft een beetje achter de rest staan	1
14:44:00	Participant 3 balanceert met zijn voet op de poot van het bord	3
14:44:00	Participant 5 buigt onder de arm van Participant 3 langs om iets op het bord te plakken	3,5
14:45:00	Participant 2 fluistert iets naar Facilitator	2,f
14:45:00	Participant 2 gaat staan bij zijn stoel en typt op zijn telefoon	2
14:45:00	Participant 1 en Participant 4 gaan zitten	1,4
14:45:00	Participant 3 gaat zitten en typt op zijn telefoon	3
14:46:00	Participant 5 gaat zitten	5
14:46:00	Participant 2 gaat zitten en legt zijn telefoon weg	2

14:45-14:55 Break

Time	Observation	Activity	Actor
14:46:00	Participant 2 zucht gespeeld opgelucht dat het pauze is		2
14:47:00	Participant 3 zit met zijn hoofd op zijn hand geleund terwijl hij kijkt naar Facilitator	Facilitator legt nog wat uit over wat ze straks gaan doen	3,f
14:47:00	Participant 3 zit even op zijn telefoon		3
14:47:00	Participant 5 kijkt naar de rest		5
14:47:00	Participant 2, Participant 4 en Participant 5 gaan staan		2,4,5
14:48:00	Participant 1 pakt zijn telefoon en gaat staan en vraagt of de observator koffie wil		1
14:48:00	Participant 1 loopt weg om koffie te halen		1
14:48:00	Participant 3 pakt zijn laptop en typt erop. Maakt een gesprekje met de observator		3
14:49:00	Participant 5 komt terug in de ruimte en pakt iets uit zijn tas. Hij loopt weer weg		5
14:50:00	Facilitator plakt de post-its op de grafiek		f
14:51:00	Participant 1 en 2 komen terug met koffie. Participant 1 heeft koffie gehaald voor de observator		1,2
14:51:00	Participant 1, Participant 2 en Participant 3 hebben een gesprekje		1,2,3
14:54:00	Participant 4 en Participant 5 komen terug met ene koekje		4,5
14:54:00	Participant 4 gooit haar spullen op tafel		4
14:54:00	Participant 5 gaat weer zitten		5
14:54:00	Participant 4 legt haar telefoon op tafel en gaat weer zitten		4
14:55:00	Participant 4 opent haar laptop en typt		4
14:55:00	Participant 3 loopt uit de kamer		3
14:55:00	Participant 5 typt even op zijn telefoon		5

14:56:00	Participant 3 komt terug met koffie en gaat zitten		3
14:56:00	Participant 5 typt op zijn laptop		5
14:56:00	Participant 3, Participant 4 en Participant 5 hebben een onderonsje over rare meisjes		3,4,5
<i>14:55-15:00 Select two critical driving factors</i>			
Time	Observation	Activity	Actor
14:58:00	Participant 4 doet haar laptop dicht en kijkt naar Facilitator	Facilitator legt uit dat hij de stickers heeft geplakt	4,f
14:59:00	iedereen kijkt naar Facilitator. Participant 4 complimenteert de voorbereiding van Facilitator		4,f
14:59:00	Participant 4 tikt op haar stoel	Facilitator legt uit wat ze gaan doen en vraagt Facilitator iedereen het ermee eens is	4,f
15:00:00	er is een discussie tussen Participant 2, Participant 3 en Participant 5		2,3,5
15:00:00	er is een gesprek over aansprakelijkheid van KPMG. Participant 1 en Participant 3 praten. Participant 2 reageert hierop		1,2,3
15:01:00	Participant 4 opent haar laptop en legt hem op haar knie. Ze scrolt erop		4
15:01:00	Facilitator kraakt steeds met de deur		f
15:02:00	Participant 3 speelt met zijn pasje		3
15:02:00	Participant 1 en 2 hebben een onderonsje over de warmte en drinken koffie, ze lachen hard		1,2
15:02:00	Participant 1 stoot met zijn knie tegen de tafel		1
15:02:00	Participant 4 legt haar laptop op tafel en typt erop		4
15:02:00	Participant 4 legt haar laptop weer op haar knie		4
<i>15:00-15:05 Create 2x2 matrix</i>			
Time	Observation	Activity	Actor
15:04:00		Facilitator haalt het blad eraf en legt het op de kast	f
15:04:00		Facilitator schrijft KPMG aansprakelijk en Al leverancier verantwoordelijk op de assen	f
15:04:00	Participant 2 kijkt naar f1 uitslagen. Er ontstaat een gesprekje. Facilitator vraagt om focus	Facilitator schrijft kwaliteit beter en slechter op de assen	1,2,f

Time	Observation	Activity	Actor
15:05:00	Participant 1, 2 en 3 vormen en groep en Participant 4 en 5 vormen een groep. De Facilitator vraagt om focus	groepen worden gevormd	1,2,3,4,5,f
15:05:00	Participant 1 speelt met zijn pen		1
15:06:00	Participant 4 complimenteert Facilitator weer om zijn voorbereiding		4,f
15:06:00	Participant 5 begint gelijk met schrijven en ordent de blaadjes	Facilitator legt wat uit over kansen, stakeholders, triggers, implicaties, etc.	5,f
15:07:00		Facilitator legt uit dat ze 20 minuten hebben	f
15:07:00	Participant 1 en Participant 2 overleggen, Participant 3 zit op zijn telefoon		1,2,3
15:07:00	Participant 2 heeft zijn pen in zijn mond. Hij knikt. Participant 3 heeft zijn telefoon weggelegd en knikt ook		2,3
15:07:00	Participant 4 en Participant 5 maken grapjes. Participant 5 typt op laptop		4,5
15:08:00		Facilitator legt uit dat het gaat om de kwaliteit van het werk	f
15:08:00	Participant 2 vindt het vervelend dat hij geen template heeft en zeurt een beetje. Participant 1 en Participant 3 lachen		1,2,3
15:09:00	Participant 2 begint met schrijven		2
15:09:00	Participant 3 tikt met zijn vingers op zijn laptop		3
15:09:00	Participant 1 frummelt met zijn verfrommelde memo's		1
15:10:00	Participant 5 schrijft iets op terwijl Participant 4 verder typt op laptop		4,5
15:10:00	Participant 3 kijkt verveeld met zijn hoofd rustend op zijn hand		3
15:10:00	Participant 4 zit onderuitgezakt met haar handen in haar haar		4
15:10:00	Participant 2 zegt gezondheid als observator niest en zegt dat ze bescheiden niest		2
15:11:00	Participant 3 geeft een compliment aan Participant 2 over zijn handschrift		2,3
15:11:00	Participant 3 zijn telefoon gaat hardop af. Hij klikt de beller gelijk weg		3
15:12:00	Participant 3 tikt met zijn vingers op zijn laptop		3
15:12:00	Participant 4 en Participant 5 kijken op de laptop		4,5
15:13:00	Facilitator bladert tussen wat papieren		f
15:13:00	Facilitator vraagt en laat iets zien aan Participant 5		5,f
15:13:00	Participant 4 schuift de laptop naar haar toe en typt erop		4
15:13:00	Participant 1, Participant 2 en Participant 3 hebben een discussie		1,2,3
15:14:00	Participant 5 zit verveeld op zijn telefoon. Hij draait hem rond en legt hem daarna hard op tafel		5
15:14:00	Participant 5 kijkt verveeld rond		5

15:14:00	Participant 4 vraagt iets aan Participant 5, Participant 5 reageert niet	4,5
15:14:00	Participant 1 frummelt met zijn verfrommelde memo's	1
15:15:00	Participant 5 schrijft iets op	5
15:15:00	Participant 3 vraagt iets over de tijd	3
15:15:00	Participant 2 maakt (grappend) een steekbeweging met zijn pen naar Participant 3	2,3
15:16:00	Participant 3 maakt een grapje, Participant 1 en Participant 2 lachen	1,2,3
15:16:00	Participant 4 kijkt na wat Participant 5 opgeschreven heeft, hardop	4,5
15:16:00	Participant 3 zegt iets over het handschrift van Participant 5	3,5
15:17:00	Participant 2 begint met schrijven Participant 3 neemt het voortouw, iets over key issue	2
15:17:00	Participant 4 en Participant 5 hebben een gesprekje.	3
15:17:00	Participant 4 zegt dat ze niet helemaal tevreden is met chatgpt. Ze scheld een beetje. Ze legt haar dopper hard op tafel	4,5
15:18:00	Participant 5 schrijft wat op	4
15:18:00	Participant 1, Participant 2 en Participant 3 hebben een discussie	5
15:18:00	Participant 3 speelt met zijn pasje. Participant 1 frummelt nog steeds met zijn verfrommelde memo's	1,2,3
15:18:00	Participant 4 typt op de laptop	1,3
15:18:00	Facilitator voert een gesprekje met Participant 3	4
15:19:00	Participant 1 kijkt een beetje rond.	3,f
15:19:00	Participant 3 schrijft het scenario op	1
15:19:00	Participant 3 zit naar achteren met zijn hoofd op zijn hand	3
15:20:00	Facilitator speelt met een marker, maakt een klikkend geluid	3
15:20:00	Participant 3 speelt weer met zijn pasje	3
15:21:00	Participant 4 scrolt op de laptop, Participant 5 schrijft. Ze praten zacht met elkaar	4,5
15:21:00	Participant 5 speelt met zijn pen, maakt een klikkend geluid	5
15:21:00	Participant 5 gooit de pen op tafel en zegt er klaar mee te zijn. Hij schuift papier en pen naar Participant 4	4,5
15:22:00	Participant 4 kijkt het papier na en schrijft er nog wat op	4
15:22:00	Participant 5 zit op zijn telefoon	5
15:22:00	Participant 3 schrijft iets op papier	3
15:22:00	Participant 1 kijkt voor zich uit	1
15:23:00	Participant 2 vraagt af en toe wat. Participant 3 geeft antwoorden	2,3
15:23:00	Facilitator speelt weer met marker	f

15:23:00	Participant 4 scrolt op de laptop en speelt met de pen	4
15:24:00	Participant 4 schrijft wat op	4
15:24:00	Participant 4 vergelijkt haar handschrift met die van Participant 5. ze hebben een gesprekje erover	4,5
15:25:00	Participant 3 mengt zich in een discussie van Participant 4 en Participant 5 over IQ	3,4,5
15:25:00	mensen stellen veel vragen en lachen	het is klaar

15:25-15:35 Discuss scenarios

Time	Observation	Activity	Actor
15:26:00		Facilitator legt uit dat ze gaan presenteren	
15:26:00	Participant 3 gaat scenario presenteren.		
15:26:00	Participant 1 en 2 maken grapjes en lachen	Participant 3 presenteert	1,2,3
15:26:00	Participant 5 schrijft wat op. Hij kijkt niet naar Participant 3		3,5
15:27:00	Participant 2 kijkt om zich heen		2
15:27:00	Participant 1 frummelt NOG STEEDS met zijn memo's		1
15:27:00	Participant 2 maakt een grapje, niemand lacht		2
15:28:00	Participant 4 fluistert iets naar Participant 5. ze lachen en frummelen met hun papier		4,5
15:28:00	Participant 3 loop heen en weer terwijl hij presenteert		3
15:29:00	Participant 3 tikt op het bord		3
15:29:00	Participant 1 frummelt aan zijn horloge en trouwring		1
15:29:00	Participant 5 gaat staan om te presenteren	Participant 5 presenteert	5
15:30:00	Participant 5 kijkt naar het bord		5
15:30:00	Participant 3 geeft een papier en pen door naar Participant 2. hij knakt met zijn vingers		2,3
15:30:00	Participant 1 en Participant 4 kijken naar Participant 5. Participant 2 en Participant 3 kijken om zich heen		1,2,3,4,5
15:31:00	Participant 1 heeft zijn verfrommelde memo nog in zijn hand. Hij frummelt nu aan zijn lip		1
15:32:00	Participant 2 zit achterover gezakt en kijkt naar Participant 5		2,5
15:32:00	Participant 3 speelt met het koord van zijn pasje		3
15:32:00	Participant 4 kijkt kort op haar telefoon		4
15:33:00	er wordt geapplaudiseerd voor Participant 5		5

15:35-15:40 Individually rank scenarios

Time	Observation	Activity	Actor
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15:33:00	Participant 2 maakt een grapje of het template nu wel goed is	Facilitator legt uit dat ze nu weer individueel aan de slag gaan met een template	2,f
15:34:00		Facilitator deelt de papieren uit	f
15:34:00	Participant 2 schuift een papier door naar Participant 1. Participant 1 bedankt hem hiervoor		1,2
15:34:00	Participant 4 heeft haar pen in haar mond		4
15:34:00	Participant 3 en Participant 5 zijn aan het schrijven		3,5
15:34:00	Participant 2 beweegt op en neer op zijn stoel. Dit maakt geluid		2
15:35:00	Participant 3 legt zijn pen neer		3
15:35:00	Participant 1 schrijft		1
15:35:00	Participant 1,2 en 4 stellen vragen	Facilitator legt iets uit over chatgpt die gaat imploderen	1,2,4,f
15:36:00	Participant 3 speelt weer met zijn pasje		3
15:36:00	Participant 2 klikt zijn pen steeds open en dicht en zucht		2
15:36:00	Participant 1 en Participant 3 leggen hun pen neer en kijken naar Facilitator		1,3,f
15:36:00	Participant 1 pakt zijn pen weer op en schrijft.		1
15:36:00	Participant 1 legt zijn pen weer neer		1
15:37:00	Participant 3 steekt zijn pasje in zijn mond		3
15:37:00	Participant 2 vertelt iets heel lugubers.		
15:37:00	Participant 4 vindt het niet leuk		2,4

15:40-15:45 Create final impact-likelihood matrix

Time	Observation	Activity	Actor
15:37:00	Participant 3 wil wel beginnen en vertelt wat hij had.	Facilitator legt uit dat we alles gaan langslopen	3,f
15:38:00	Participant 2 stemt in		2
15:38:00	Participant 1 heeft iets ander en legt uit waarom		1
15:38:00	Participant 4 is een beetje afgeleid		4
15:39:00		Facilitator plakt briefje 1 op het bord	1,f
15:39:00	Participant 5 is nu aan de beurt		5
15:39:00	Participant 2 en Participant 5 verbeteren Facilitator in zijn briefplakkunsten	Facilitator plakt briefje 2 op het bord	2,5,f
15:39:00	Participant 3 en Participant 4 zitten achteruit gezakt.		3,4
15:40:00	Participant 2 neemt het woord over Zero AI. Participant 4 stemt met hem in.		
15:40:00	Participant 1 en Participant 3 niet	Facilitator plakt briefje 3 op het bord	1,2,3,4,f
15:41:00	Participant 1 frummelt met zijn memo's.		
15:41:00	Participant 3 speelt met zijn pen		1,3
15:41:00	er is discussie over de plek van het briefje.		
15:41:00	Facilitator verplaatst hem		f
15:42:00	Participant 4 gaat iets zeggen over market presentatie	Facilitator plakt briefje 4 op het bord	4,f

15:43:00	Participant 2 is het er heel erg niet mee eens	2
15:43:00	er ontstaat een discussie over het ontstaan van een discussie	
15:43:00	Participant 4 kijkt een beetje voor zich uit	4
15:44:00	Participant 1 frummelt met zijn memo en kijkt rond	1
15:44:00	Participant 3 speelt met zijn trouwring	3
15:44:00	Participant 3 maakt een grapje over een briefje dat valt van het bord	3

15:45-15:50 Answer key question

Time	Observation	Activity	Actor
15:45:00	alle participanten kijken naar Facilitator	Facilitator legt uit wat we allemaal gedaan hebben	f
15:45:00	iedereen zegt ja	Facilitator vraagt het antwoord op de vraag	f
15:45:00	Participant 2 en Participant 3 spelen met hun pen	de vraag wordt besproken door de participanten	2,3
15:46:00	Participant 1 frummelt met memo's, as always		1
15:46:00	Participant 1 en Participant 2 knikken als Participant 3 iets uitlegt		1,2,3
15:46:00	Participant 4 speelt met haar oorbel		4
15:46:00	Participant 3 gooit zijn pen op tafel		3
15:47:00	Participant 2 en Participant 3 zitten onderuitgezakt terwijl ze praten		2,3
15:48:00	Participant 5 pakt zijn telefoon en typt.		5
15:48:00	Participant 4 kijkt kort op haar telefoon		4
15:48:00	Participant 5 legt zijn telefoon weer op tafel		5
15:49:00	Participant 1 zegt iets over cyberaanvallen. Hij heeft nog steeds de verfummelde memo in zijn hand en speelt ermee		1
15:50:00	Participant 2 en Participant 3 maken een grapje over archiveren met data		2,3

15:50-16:00 Complete questionnaire

Time	Observation	Activity	Actor
15:51:00		Facilitator vraagt of de participanten een vragenlijst willen invullen	f
15:51:00	Participant 2 vraagt wat de observant doet.		
15:51:00	Facilitator geeft antwoord		2,f
15:52:00	Participant 2 en Participant 3 en Participant 4 schrijven		2,3,4
15:52:00	Participant 5 zit op zijn telefoon en schrijft niet		5
15:52:00	Participant 1 schrijft nu ook		1
15:53:00	Participant 5 typt op zijn laptop		5
15:53:00	Facilitator bespreekt resultaten van eerdere workshops		f

15:53:00	Participant 2 steekt zijn vinger op om een vraag te stellen	2
15:54:00	Participant 5 zegt dat hij iets heeft gestuurd naar de whatsapp van f	5
15:54:00	Participant 1 en Participant 2 en Participant 3 en Participant 4 zijn aan het schrijven	1,2,3,4
15:54:00	Participant 5 gaat nu ook beginnen met schrijven	5
15:54:00	Facilitator laat een prompt die Participant 5 heeft gemaakt via chatgpt zien aan de rest	5,f
15:55:00	Participant 3 vindt dat het een grote vragenlijst is. Hij zucht	3
15:55:00	Participant 3 kijkt naar de tijd op zijn telefoon	3
15:55:00	Participant 3 maakt een geluidje met zijn mond	3
15:55:00	Participant 4 fluistert de vragen hardop	4
15:57:00	Facilitator typt op zijn laptop terwijl de rest nog schrijft	f
15:57:00	Participant 5 zucht hard en wappert met zijn hand	5
15:58:00	Participant 5 zit op zijn telefoon en schrijft niet	5
15:58:00	Participant 2 vraagt wat Facilitator bedoelt met vraag 9	2,f
15:58:00	Participant 5 rekt zich uitgebreid uit	5
15:58:00	Participant 4 steekt een stekker in haar laptop en gaat op haar telefoon	4
15:58:00	Participant 4 legt haar telefoon weg en gaat weer schrijven. Ze leest mompelend voor wat op de questionnaire staat	4
15:59:00	Facilitator speelt met een stapeltje sticky notes	f
16:00:00	Participant 5 vraagt of het de vorige keer te lezen was wat hij schreef. Mensen lachen	5
16:00:00	Participant 4 tikt met haar pen op haar gezicht	4
16:00:00	Participant 1 is klaar en gooit zijn pen neer. Hij frummelt met zijn verfrommelde sticky note	1
16:01:00	Participant 3 fluit even	3
16:01:00	naar aanleiding van ene vraag van Participant 2 pakt Participant 1 weer zijn pen en past iets aan	1,2
16:01:00	Participant 4 zit op haar telefoon en schrijft niet	4
16:02:00	Participant 1 legt zijn pen weer neer en gaat weer frummelen aan de memo	1
16:02:00	Participant 1 en Participant 3 gooien hun papier naar f	1,3
16:02:00	ook Participant 2 gooit zijn papier naar Facilitator en legt zijn pen neer	2,f
16:02:00	Participant 1 en Participant 3 zitten op hun telefoon. Participant 4 ook nog steeds	1,3,4
16:02:00	Participant 2 frummelt met een memo	2
16:02:00	Participant 3 legt zijn telefoon weg en opent zijn laptop	3
16:03:00	Participant 5 gaat staan en zit op zijn telefoon	5
16:03:00	Participant 1 gaapt. Participant 2 lacht hierom	1,2

16:03:00	Participant 2 legt zijn pen weg en gaat op zijn telefoon	2
16:03:00	Participant 5 ruimt zijn spullen op	5
16:03:00	Participant 4 gaat staan en praat met Participant 5	4,5
16:03:00	Participant 4 ruimt haar spullen op	4

16:00-

16:05 *Thank you & Closing*

Time	Observation	Activity	Actor
		afsluiting door Facilitator	
16:04:00			f
16:04:00	Participant 1 en Participant 2 leggen hun telefoon weg		1,2
16:04:00	Participant 3 typt verder op zijn laptop en kijkt af en toe naar Facilitator		3,f
16:04:00	Participant 4 en Participant 5 ruimen verder op		4,5
16:04:00	Participant 2 stelt een vraag over de studie van Facilitator. Facilitator geeft antwoord		2,f
16:05:00	Participant 5 zwaait met de oplader van zijn telefoon		5
16:05:00	Participant 1 speelt met zijn pen		1
16:05:00	Participant 4 opent de deur en neemt haar spullen mee en gaat weg		4
16:05:00	Participant 4 loopt weer terug om iets te vragen aan Participant 5		4,5
16:06:00	Participant 5 en Participant 4 lopen samen de kamer uit		4,5
16:06:00	Participant 3 kijkt intens naar zijn laptop en speelt met een pen		3
16:06:00	Participant 3 klapt zijn laptop hard dicht, staat op en pakt zijn spullen		3

Appendix E – Workshop 3 results

Appendix E1 – PESTLE-analysis

Political

- (Political/Econ) Lack of accountability (i.e. in AI applications) of misuse by those with malicious intent
- Regulation may be put in place that severely affects the ability (both of S and B)
- Government funding priority #1
- Help us AI and robot so possibly governments will incentivize and subsidize the use of AI and robot
- Reduced trust in authorities and information channels due to the ease of creating fake content

Economical

- We will make a lot of profit, because we can help customers with less people
- Virtual support efficiency of tedious processes
- If we don't do this our competitors will
- Everyone will invest so don't lack behind → stay ahead of competition
- Low cost of training models from scratch and the availability of pre-trained models
- Simulator increased "realism power" in low-risk applications
- Cost of having B2B cost

Social

- Companies (clients) won't buy our stuff if they know it's made up by a robot, they need the human touch
- Will people still like to work for us when part of our work is done by robots? (they won't like the coffee cake)
- Will our clients miss the human part?
- Public opinion about what is the output of generative AI? Hallucination / Knowledge
- Copyright will influence the way we can ask questions will be asked to each of first, but to first → artificial
- May cause tension among people - not a new design of AI
- People's employment / continuity

Technological

- AI continued w/ human intelligence may increase technology adoption
- It will be easier to innovate, because generative AI will always be ahead on the larger trends
- needed risk adjustments
- ability to ensure safe handling of customer data
- lack of processing power to train and run models
- Model network doesn't only output what it has already seen
- Will improve the broader vision of the current and future tech-landscape, what can you do in your next steps

Legal

- If there will be laws that prohibit the use of generative AI we shouldn't put all our money on it
- Potential breach of customer confidentiality agreements
- Who owns the copyright of AI generated content? → J.P. Labrie
- Intellectual property / confidentiality / data (GDPR, copyright, IP, etc., etc.)
- Loss of security of certain data
- Intellectual property / confidentiality / data (GDPR, copyright, IP, etc., etc.)

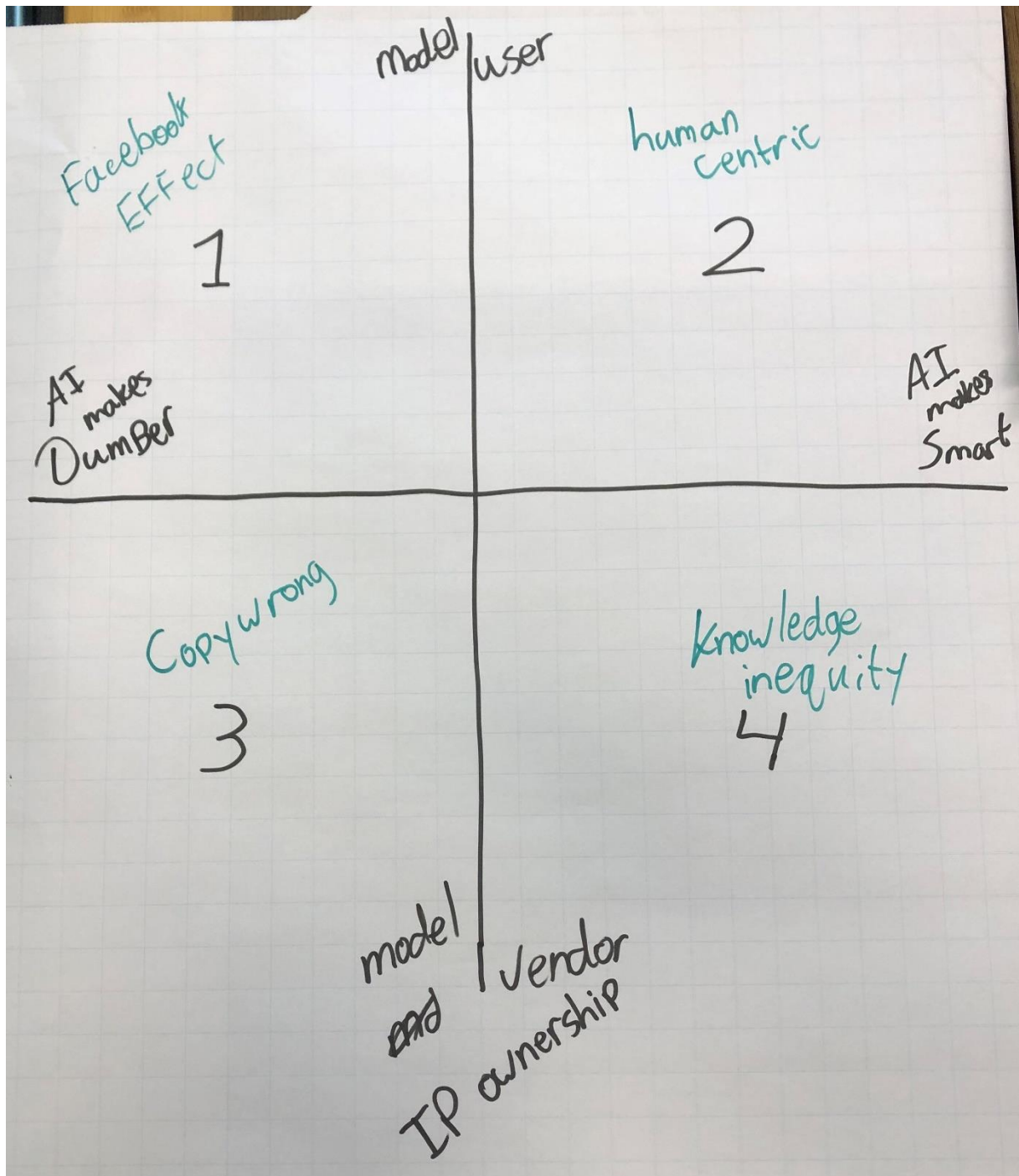
Environmental

- Lower smaller carbon footprint (less flying, commuting, office space etc.)
- Impact is minimal to green signal
- All the data centers and storage will cost a lot of energy, therefore high carbon footprint → influence image

Appendix E2 – Impact-uncertainty matrix



Appendix E3 – 2x2 matrix



Scenario Template

Scenario 1..

Participant: *[Signature]*

- Model user owned X A7 makes us
dumber

↳ Liability of user when mis-
information is spread → this
will be more likely as the
critical/cognitive ability will be lower.
Thus, if XPM6 adopts this,
it will create a major
risk overhead. Risks for employees.

↳ Because people ~~might be~~
become more lazy,
adoption and use will
increase. More liability
claims could come from it.
And A7 will hallucinate
different ideas to different
people, which will increase
number of conflicts.

Anthropocentric
Human-centric

Scenario Template — ~~Independent AI professional~~

Scenario 2

Participant: 3

Generative AI gives a good baseline for
a new one to start a task.

You got the ownership, what makes you more
conscientious, responsible and responsible for your
output → make you more engaged and therefore
smarter due to this pressure to deliver quality.

KPMG workforce is more independent
and more engaged. Anyone @ KPMG
can deliver good quality work with
little training. Increase massively
the company throughput.

Human-centric future as the
relationship development and the
client relationship becomes the
differentiable factor.

Scenario Template —

Scenario 3

Participant: 3

Copyright by the vendor means that KPRG will develop its own model and ~~unlike~~ people will execute it while being less capable of determining if the output is valuable. Reliance on centralized control ~~and~~. Increase reputation risks. Reduce the use case to very specific ~~at~~ use cases. Large value of bounded model capable of reliable outcome especially if people are less capable to assess its result. People will be dependant and Knowledge will be owned by the few companies making models

Scenario Template

Scenario ⁴...

Participant:

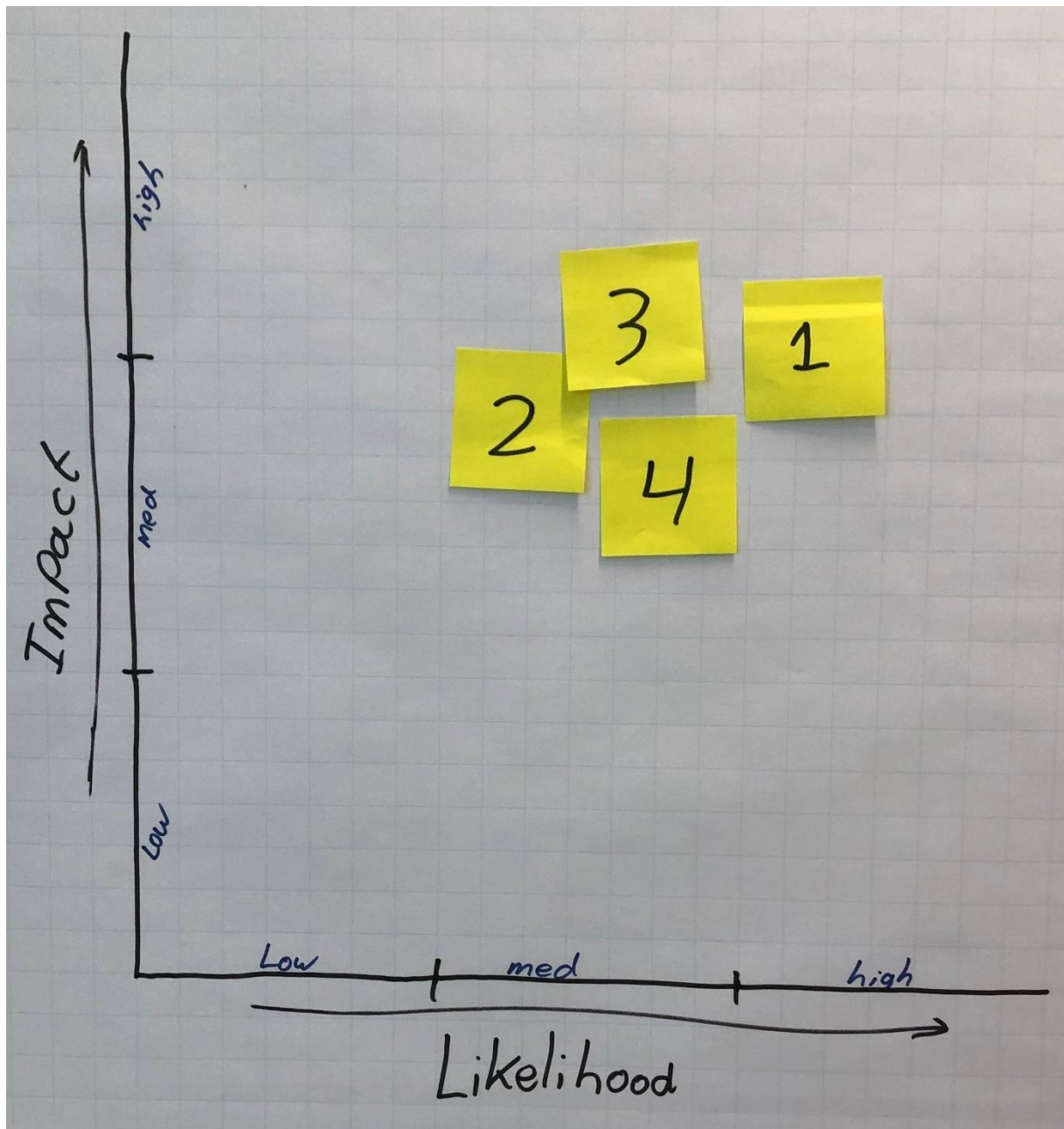
Model

Vendor owned X AI makes smarter

→ To own the IP, there is likely high costs in order to own the IP or knowledge. Meaning that the use of AI, and the ~~smart~~ ability to make a company/people smarter, will remain only to an elite group of companies/people.

→ Likely that companies or people will protect their data/information from being used for model training. This would have diminishing returns on "AI making people smarter".

Appendix E5 – Impact-likelihood matrix



Appendix E6 – Observations

14:00-14:05 Introduction workshop & agenda

Time	Observation	Activity	Actor
14:06:00	De laatste mensen gaan zitten		
14:07:00	Participant 5 komt nog binnen		5
14:07:00	Participanten 2, 3, 4 en Facilitator maken grapjes		2,3,4,f
14:08:00	Participant 2 heeft het over New Bing		2
14:09:00	Participant 4 wil de observer omkopen		4
14:09:00		introdunctie start	
14:09:00	Participant 1 kijkt op telefoon		1
14:10:00	Participanten 2 en 3 kijken op telefoon	agenda	2,3
14:11:00	Participant 2 geeft Facilitator compliment over agenda		2,f
14:11:00	de meesten knikken als Facilitator het doel uitlegt		f

14:00-14:05 Communicate goal

Time	Observation	Activity	Actor
14:11:00	de meeste mensen knikken als Facilitator het doel uitlegt		f
14:12:00	Participant 1 drinkt		1
14:12:00	Participanten 3 en 5 lachen	ethical use	3,5
14:12:00	Participant 2 zegt: got it		2

14:10-14:15 Present key question

Time	Observation	Activity	Actor
14:13:00	Participant 2 krabt zich achter het oor		2
14:13:00	Participanten 3 en 6 gaan rechter op zitten		3,6
14:13:00	Participant 3 knikt		3
14:14:00	Participant 6 geeft aan dat het een simpele ja als antwoord wordt		6

14:15-14:30 Identify driving factors

Time	Observation	Activity	Actor
14:14:00	Participant 2 zegt ok		2
14:15:00	Participant 4 stelt een vraag	begin opdracht post its (PESTLE)	4
14:15:00	Participant 2 stelt een vraag over de opdracht	Facilitator vraagt of het doel duidelijk is	2,f
14:15:00	Participant 4 deelt post its rond aan Participanten 5 en 6		4,5,6
14:15:00	Participant 2 deelt post its aan de rest		2
14:15:00	Participant 6 lacht		6
14:15:00	Participant 2 geeft aan dat hij het nu begrijpt		2
14:16:00	Participant 3 asks: factors that inhibit problems right?		3
14:16:00	Participant 6 lacht om het antwoord van Facilitator		6,f
14:16:00	Participant 3 asks if it is about generite ai or chatgpt		3
14:17:00	Participant 3 understands		3

14:17:00	Participanten 1 en 5 zijn al geruime tijd aan het schrijven zonder op de conversatie te letten	1,5
14:17:00	Iedereen schrijft gedwee :)	
14:17:00	Participanten 4 en 2 kijken omhoog om inspiratie op te doen	2,4
14:18:00	Participant 2 drinkt	2
14:18:00	Facilitator zegt dat laptops gebruikt mogen worden	f
14:18:00	Participant 2 vraagt of er "hi gezegd moet worden"	2
14:18:00	Participanten 2, 4 en 6 grappen mee	2,4,6
14:18:00	Participant 4 opent zijn laptop	4
14:19:00	Participanten 3,4 gebruiken laptop, de rest niet	3,4
14:19:00	Participant 1 heeft laptop nog steeds gesloten	1
14:20:00	Participant 1 kijkt om zich heen	1
14:20:00	Participant 5 gebruikt laptop	5
14:20:00	Participant 6 gooit briefje weg	6
14:20:00	Facilitator lacht om Participant 6	6,f
14:21:00	Participant 2 praat in zichzelf en vraagt hoe je zelfredzaamheid in het Engels noemt	2
14:21:00	Participant 3 antwoordt "self sustainable"	3
14:21:00	Participant 2 vraagt of er een timer aanstaat en drinkt	2
14:21:00	Facilitator antwoord "about 5 more minutes"	5,f
14:22:00	Participant 4 zucht	4
14:22:00	Participant 1 zucht en speelt met het blokje post its, opent zijn laptop	1
14:23:00	Participant 6 speelt met pen en kijkt naar bord	6
14:24:00	Participant 4 kijkt gefascineerd naar laptop	4
14:24:00	Participant 2 legt pen neer en legt handen op het hoofd	2
14:24:00	Participant 5 schrijft nog snel door	5,f
14:25:00	Participant 3 kijkt bij Participant 2 voor inspiratie	2,3
14:25:00	Participant 1 gebruikt laptop	1
14:26:00	Participant 2 gaapt	2
14:26:00	Participant 3 plakt briefjes op laptop	3
14:26:00	Participanten 4 en 6 plaatsen de hele tijd al hun briefjes iets aggressief op elkaar	4,6
14:27:00	Facilitator: everyone done?	f
14:27:00	Participant 4: yes	4

14:30-14:45 *Discuss key driving factors*

Time	Observation	Activity	Actor
14:27:00	Facilitator explains they need to present		f
14:27:00	Participant 1 starts hesitantly	Participant 1 presents	1
14:27:00	Participant 6 bereid zich alvast voor op zijn taak door zijn briefjes 1 voor 1 te pakken		1,6
14:28:00	Participant 2 knikt		2
14:28:00	Participant 5 kijkt naar briefjes		5
14:28:00	Participant 2 krabt achter zijn oor		2
14:29:00	Participant 4 kijkt verveeld om zich heen		4

14:29:00	Participant 5 kijkt even weg en drinkt	Participant 1 heeft het over "environmental"	1,5
14:29:00	Participant 3: dont have to commute when you are out of a job right?		3
14:29:00	Participanten 6 en 2 lachen		2,6
14:30:00	Participant 2 knikt		2
14:30:00	Participanten 3 en 4 klappen zachtjes		3,4
14:30:00	Facilitator explains factor clustering		f
14:30:00	Participant 2 knikt	Participant 2 loopt naar voren om te presenteren	2
14:30:00	Participant 5 frommelt aan briefjes		5
14:30:00	Participant 4 klikt met tong	selfsustainability	4
14:31:00	Participant 3 kijkt even om naar Participant 5 omdat hij drinkt		3,5
14:31:00	Participant 1 lacht	specific flavour of people	1
14:31:00	Participant 4 gaat rechtop zitten		4
14:31:00	Participanten 3 en 1 lachen, Facilitator zegt ja. Participant 2 zei bloggers		1,2,3,f
14:32:00	Participant 2: right? Iedereen knikt, Facilitator zegt ja		2,f
14:32:00	Facilitator vraagt of het hetzelfde is (iets met misinformation)		f
14:33:00	Participant 3: thank you		3
14:33:00	Participant 3 loopt naar voren		3
14:33:00	Participant 6 gaat rechter op zitten		6
14:33:00	Participant 3 asks Participant 2 about perspective and says his perspective is different		2,3
14:33:00	Participant 2 is engaged in the conversation		2
14:34:00	Participant 4 trekt been op stoel		4
14:34:00	Participant 1 kijkt even weg		1
14:34:00	Facilitator maakt opmerking over trust		f
14:34:00	Participant 4 zegt ja		4
14:35:00	Participant 6 vraagt iets? Participant 2 draagt bij		2,6
14:35:00	Participant 6 twijfelt over antwoord van Participant 3		3,6
14:35:00	Participant 4 lacht		4
14:35:00	Participant 6: "not a problem because they defy legal environment"		6
14:36:00	Participanten 2 en 4 lachen		2,4
14:35:00	Facilitator: you say it is sunk costs?		f
14:36:00	Participant 3 antwoordt prohibit excuse for generative ai		3
14:36:00	Participant 6 praat onder het vertellen van Participant 3		3,6
14:36:00	Participant 2 hallucination = misinformation?		2
14:37:00	Participant 3 answers		3
14:37:00	Participant 4: yes but that is misinformation		4

14:37:00	Participant 3 corrects: oh it should have been under technological		3
14:37:00	Participant 4 starts presenting	Participant 4 walks up	4
14:37:00	Participant 2: yes those are examples right here		2
14:37:00	Participant 2 schrijft mee, Participant 6 schrijft mee	needed data infrastructure	2,6
14:38:00	Participanten 3 en 6 knikken		3,6
14:38:00	Participant 3: you guys should look up what it costs to send an email		3
14:38:00	Participant 6: where you part of the mailing list?		6
14:38:00	Facilitator: lets not talk about this now		f
14:39:00	Participant 5 klikt pen en schrijft		5
14:39:00	Facilitator kijkt op horloge		f
14:40:00	Participant 4 looking for research articles which didnt exist		4
14:40:00	Participanten 2 en 3 lachen		2,3
14:40:00	Participant 2: and thank you for your presentation, lachen in zaal		2
14:40:00		Participant 5 loopt naar voren	5
14:41:00	Facilitator: green bottom one		f
14:41:00	iedereen lacht, Facilitator zegt good one, Participant 6 grapt iets		6,f
14:41:00	Participant 6 krabt achter oor		6
14:41:00	Participant 4 typt iets op laptop	Participant 5 praat over legal	4,5
14:41:00	Participant 2 gooit blokje neer		2
14:42:00	Participant 6 pakt blokje en schrijft		6
14:42:00	Facilitator vraagt how is it useful, for this or kpmg as a whole?		f
14:42:00	Facilitator: last one alexander		f
14:43:00	Participant 6: wait a second i am still writing		6
14:43:00	Facilitator and Participant 2 discuss what is already on the board	Participant 6 loopt naar voren	2,6,f
14:43:00	Participant 6: fake news		6
14:43:00	Participant 3 lacht		3
14:43:00	Participant 2 klikt met pen		2
14:44:00	Participant 5 typt op laptop	Participant 6 praat over NVIDIA chips and chip shortage	5,6
14:44:00	Participant 2 schrijft		2
14:45:00	Participant 6: what is social? Facilitator: what do you mean with that?		6,f
14:45:00	Participant 6 negeert vraag geloof ik?		6
14:45:00	Participant 5 klikt op laptop		5
14:46:00	Participant 4 sluit laptop		4
14:46:00	Participant 3 knikt		3
14:46:00	Participant 2 gaapt en drinkt		2
14:46:00	Facilitator: so, hinder creativity?		f
14:47:00	Participant 6: yes		6

14:47:00	Participant 3: so your idea has overlap with mine	3
14:47:00	Participant 2 schrijft mee	2
14:47:00	Participant 3, Facilitator en Participant 2 stemmen in met de uitleg van Participant 6	2,3,6,f
14:48:00	Participant 6: its the best thing, right?	4,6
14:48:00	Participanten 6 en 4 lachen	4,6
14:48:00	Participant 6 vraagt of Facilitator zegt welke sessie het beste is en Facilitator zegt dat het natuurlijk deze sessie is	6,f

14:45-14:55 Prioritise driving factors

Time	Observation	Activity	Actor
14:48:00	Facilitator legt de opdracht uit		f
14:48:00	Participant 4 zucht en krabt achter oor		4
14:49:00	Participant 6: do we do it on the post its?		6
14:49:00	Facilitator yes		f
14:49:00	Participant 3 or on the cluster		3
14:49:00	Participant 2 it doesnt matter on which right?		2
14:49:00	Participant 3 so you put a dot on a factor which is uncertain or has a high impact		3
14:50:00	Facilitator: yes		f
14:50:00	Participanten 1 2 en 6 staan bij het bord		1,2,6
14:50:00	Participant 4 grapt wat met Facilitator		4,f
14:51:00	Participant 4 bespreekt de presentatie van Participant 3 met Participant 3 na en Participant 2 geeft daar ook een compliment over	Participanten 3 en 4 wachten af terwijl de rest hun stippen plakt	2,3,4
14:51:00	Facilitator: dont get influenced		f
14:52:00	Participant 2 am i singled out? Participant 4 zegt en terecht		2,4
14:53:00	Facilitator zegt sorry	Participanten 1 en 2 gaan zitten en typen	1,2,f
14:53:00	Participant 4 this workshop is clearly not interesting to Participant 2, he is drawing stuff		2,4
14:53:00	Facilitator: Participant 2 you only used 4 stickers I see		2,4,f
14:54:00	Participant 2: oh I thought I used 5		2,5
14:55:00	Participant 2: asks if he can go to the toilet		2
14:55:00	Facilitator: ofcourse, the break is after this		f
14:56:00	Participanten 4 en 6 zuchten, Participant 6 gaat zitten		4,6

14:55-15:05 Break

Time	Observation	Activity	Actor
15:00:00	Participant 4 mogen wij alweer naar binnen?		4
15:00:00	Participant 2 clusteren!		2
15:00:00	Participant 4 zegt mooi getekend tegen Participant 2		2,4
15:00:00	Chaos		

Facilitator: with the sentence a geel as a canary it is a good way to
15:04:00 start again

f

15:05-15:15 *Select two critical driving factors*

Time	Observation	Activity	Actor
15:04:00	facilitator explains the graph with post its		f
15:04:00	Participant 6: it is nice right?		6
15:05:00	Participant 3 kijkt op telefoon en drinkt		3
15:05:00	Participanten 4 and 6 observe the graph and comment on it		4,6
15:05:00	Facilitator: Participant 4 you look verbaasd		4,f
15:06:00	Participant 4 yes it doesnt make sense right, that uncertainty		4
15:06:00	facilitator explains boundaries		f
15:07:00	Participanten 2, 3 and 4 have questions about the task		2,3,4
15:07:00	Participant 4: so we choose two and make scenarios? F yes		4
15:07:00	Participanten 1 en 5 minder betrokken, de rest stelt constant vragen		1,5
15:08:00	Participant 1s question wordt genegeerd		1
15:08:00	Participanten 2, 4 en 6 praten door elkaar		2,4,6
15:08:00	Participant 4 just to make a point we choose a different one		4
15:09:00	gelach		
15:09:00	Participant 6: both are strongly related to low	ai vendors and uncertainty i think?	6
15:09:00	Participant 2: that is not true, and explains		2
15:10:00	Participant 2 asks Participant 3 what his hypothesis is		2,3
15:11:00	f explains prompts and liability		
15:11:00	Participant 6 asks about liability		6
15:11:00	Participant 2 asks about what the task is now and if they are not thinking ahead to much		2
15:11:00	Participant 2 apologises to Participant 3		2,3
15:12:00	Participant 1: talked a lot about what it does to employers, nice contradiction		1
15:12:00	Participant 6 pakt briefjes		6
15:12:00	chaos	Facilitator scheurt pagina af	f
15:14:00	Participant 6 why dont we put the model vendor and the model user		6
15:15:00	Participant 3 gaat naar buiten om telefoon op te nemen		3
15:15:00	Participant 2 en Facilitator antwoorden		2,f
15:15:00	Participant 6 it depends on the scenario		6
15:15:00	Participant 2: good point	Facilitator schrijft model vendor en model user op	2,f
15:15:00	Participant 6 smart dumb axis		6
15:16:00	Participant 3 komt terug		3
15:16:00	onderlinge discussie, vooral tussen Participanten 2 en 6, verder ook met Participanten 3 en 4. Participanten 5 en 1 zeggen niks		1,2,3,4,5,6

15:16:00	Participant 2 does everybody agree? Niemand antwoord, maar Participanten 3 en 6 hebben vragen		2,3,6
15:17:00	Participant 1 kijkt naar buiten		1
15:17:00	Participant 4 kijkt twijfelachtig		4
15:18:00	discussion about employee engagement and ai		
15:19:00	Participant 4: very yellow thing to do, Participant 2		2,4
15:19:00	Participant 2: laughs: the roast of Participant 2, 7th of july		2
15:19:00	Participanten 2 en 3 praten onderling	Facilitator legt matrixopdracht uit	2,3,f
15:20:00	Facilitator vraagt of ze het meekrijgen		f

15:15-15:20 Create 2x2 matrix

Time	Observation	Activity	Actor
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15:20-15:40 Creating the scenarios

Time	Observation	Activity	Actor
15:20:00	Participanten 4 en 5 hoedje op over wie schrijft		4,5
15:20:00	Participanten 2 en 5 hebben papieren vast voor hun groepje		2,5
15:20:00	Participanten 1, 2, 3, 4 en 6 typen	Facilitator legt uit	1,2,3,4,6,f
15:21:00	Participant 5 praat tegen Participant 6 over opdracht		5,6
15:21:00	Participant 2 denkt hardop na		2
15:22:00	Facilitator neemt een slok water		f
15:22:00	Participant 5 schrijft mee en vraagt wat er op moet staan aan Facilitator		5,f
15:22:00	Facilitator dont get too focussed on your laptop		f
15:22:00	Participant 6: you dont think we are professionals?		6
15:23:00	Participanten 4, 5, 6 laugh		4,5,6
15:23:00	Participant 1 staat op en zegt: schrijf dat maar eens over Participant 2		1,2
15:23:00	Participanten 1 en 5 leiden discussie in hun groepjes	Facilitator gaat zitten	1,5,f
15:25:00	Participant 2 neemt discussie meer over in 1e groepje		1,2
15:25:00	groepje twee meer gelijkmatige discussie		
15:25:00	Participant 5 schrijft gedachten van het groepje op		5
15:25:00	Participant 2 schrijft met discussie binnen groepje mee		2
15:25:00	Participanten 5 en 4 stellen vragen aan Participant 6, die antwoord met een voorbeeld		4,5,6
15:26:00	Participanten 1 en 3 praten terwijl Participant 2 nog schrijft en niet oplet		1,2,3
15:26:00	Participant 2 leest voor wat hij schreef en iedereen valt even stil. Wil dan door naar het volgende.		2
15:27:00	groepje twee gaat weer praten		
15:27:00	Participant 3 verlaat de ruimte weer om te bellen		3
15:28:00	Facilitator: nog 2 minuten		2,f
15:28:00	Participant 3 komt terug		3
15:28:00	Participant 6 sluit laptop		6
15:30:00	Participant 1 legt gedachten uit met voorbeelden		1

15:30:00	Participanten 4 en 5 zijn in gedachten	4,5
15:31:00	Participant 2 vat het even samen	2
15:31:00	Participant 6 geeft papier door aan Participanten 4 en 5 om het even door te lezen	4,5,6
15:32:00	Participant 1 gebruikt laptop	1
15:33:00	Participant 1 sluit laptop	1
15:35:00	Participant 2 zegt dat het stom is om op te schrijven dat AI mensen slimmer maakt	2
15:35:00	Participant 5 twijfelt over openen laptop maar doet het niet	5
15:36:00	Participant 4 kijkt mee en luistert mee met andere groepje	4
15:36:00	groepje 1 heeft het intussen over sinus cosinus en tangens	1
15:37:00	groepje 2 is nog wel in een serieuze discussie verzonken	2
15:37:00	Facilitator time to wrap up	f
15:37:00	Participant 3: pennen neer	3
15:37:00	Participant 2: nee!	2
15:37:00	Participanten 2 en 6 schrijven nog haastig door	2,6
15:38:00	Participant 4 gaapt	4
15:38:00	Participanten 2, 4 en 5 hebben het over hockeyen	2,4,5
15:38:00	Participant 5 vertelt over moederdaglunch morgen	5
15:39:00	Facilitator lets talk about mothers day after	f

15:40-15:50 Discuss scenarios

Time	Observation	Activity	Actor
15:39:00	Facilitator legt uit		f
15:39:00	groepje 2 praat er doorheen		2
15:39:00	Participant 2 leest scenario voor		2
15:39:00	Participant 6 prutst aan papiertje		6
15:40:00	Participant 1 gaapt en kijkt naar bord		1
15:40:00	Facilitator neemt slok water		f
15:40:00	Participant 6 checkt eigen beker voor drinken		6
15:41:00	Participant 2: increases possible conflicts (scenario 1)		1,2
15:41:00	Participant 6 stemt in		6
15:41:00	Participant 3 legt uit met voorbeeld		3
15:41:00	Facilitator vindt het een mooi voorbeeld		f
15:41:00	Participant 3 mag de volgende doen van Participant 2		2,3
15:41:00	Participant 3: compliments on your handwriting,		
15:41:00	Participant 2		2,3
15:42:00	Participant 3 kan het toch niet lezen		3
15:42:00	iedereen lacht		
15:42:00	Participant 2 leest voor (scenario 4)		2,4
15:43:00	Facilitator laten we naar de volgende groep gaan		f
15:44:00	Participant 6: this all is an anthropocentric view		6
15:44:00	Participant 6: reads out scenario 2		2,6
15:44:00	Participant 2 kijkt op telefoons		2
15:45:00	Participant 3 knikt voortdurend		3
15:45:00	Participant 5 kijkt weg		5
15:45:00	Participant 1 krabt achter oor		1

15:45:00	Participant 3 so your output will become Hygiene, all output will just become a hygiene factor and the differentiating factor will be just relationship side		3
15:46:00	Participant 2 lijkt in gedachten verzonken terwijl hij met telefoons speelt	Participant 6 gaat door naar scenario 3	2,3,6
15:47:00	Participant 2 lets come up with a name at the end		2
15:47:00	Participanten 2 en 3 knikken		2,3
15:47:00	Participant 1 kijkt uit het raam		1
15:48:00	Participant 4: you become dependant on ? And you lose your uniqueness		4
15:48:00	Participant 5: I think the name should be copywrong		5
15:49:00	Participant 4 knakt vingers		4
15:49:00	Participant 2 complimenteerd het gecreëerde scenario en geeft aan dat hij zelfs niet aan sommige punten had gedacht, Participant 4 vindt het cool		2,4

15:50-15:55 Individually rank scenarios

Time	Observation	Activity	Actor
15:50:00	sfeer is lossier, mensen gaan rechtop zitten	Facilitator legt opdracht uit	f
15:50:00	Participant 4 sluit laptop		4
15:50:00	grapjes over stickers		
15:50:00	Participanten 1 en 5 kijken naar scenariomatrix		1,5
15:51:00	Participant 4 fronst de hele tijd		4
15:51:00	Participant 3 kijkt op telefoon		3
15:52:00	Participanten 1 en 4 zijn klaar en gaan achterover zitten		1,4
15:52:00	Participanten 5 en 1 denken lang na		1,5
15:52:00	Participant 6 lacht naar observer en zwaait		6
15:52:00	Participant 2 laat telefoon op tafel vallen		2
15:52:00	Participant 4 kijkt op telefoon		4
15:53:00	Participanten 1 en 2 vergelijken elkaars antwoorden al, terwijl Participant 6 het nog afmaakt		1,2,6

15:55-16:10 Create final impact-likelihood matrix

Time	Observation	Activity	Actor
15:53:00	Participant 2 vraagt of er stippen nodig zijn	Facilitator legt de opdracht uit	2,f
15:53:00	Participant 2 verdedigt mening van hemzelf	nummer 1	2
15:54:00	Participant 4 legt zijn perspectief uit		4
15:55:00	Participant 6 praat met Participant 4		4,6
15:56:00	Participant 5 vraagt iets terwijl Participant 6 nog praat		5,6
15:56:00	Participant 3 kijkt naar het bord		3
15:56:00	Participant 2: I thought you agreed (Participant 6)?		2,6
15:56:00	Participant 6 legt mening uit met voorbeeld		6
15:57:00	Participant 4 leunt achterover met handen op het hoofd		4
15:58:00	vooral discussie tussen Participanten 2 en 6		2,6
15:59:00	Participant 2 zoekt consensus en zegt dat hij graag de nummers op het bord wil		2
16:00:00	Participanten 4 en 3 gaan overeind zitten		3,4

16:00:00	Participant 3 kijkt op telefoon	doorgaan naar nummer 2	3
	discussie tussen Participanten 2, 3 en 6 over		
16:01:00	likelyhood		2,3,6
16:02:00	Facilitator: copywrong	doorgaan naar nummer 3	f
16:02:00	Participant 1: high impact, does everyone agree		1
16:03:00	Participant 3: no. But what does it mean again?		3
		Participanten 6 en 3 discussieren	
16:04:00	Participant 2 schrijft of tekent?	over parameters en models	2,3,6
16:05:00	Participanten 4 en 5 drinken water		4,5
16:06:00	Participant 3: or will things homogenise?		3
16:06:00	Participant 2: lets vote!		2
16:07:00	Participant 5 more invested	doorgaan naar nummer 4	5
	discussie met 4 mensen, iedereen behalve Participant		
16:09:00	1. die kijkt op telefoon en gaapt		1,4
	Participant 3 vat de discussie samen in een paar		
16:09:00	vragen		3

16:10-16:15 Answer key question

Time	Observation	Activity	Actor
	Participant 6: best time to plant a tree was 50 years ago, the best		
16:10:00	time is now		5,6
16:11:00	chaos		
16:11:00	Participant 6: KPMG should guarantee value		6
16:12:00	Participanten 1, 2, 3 en 4 knikken		1,2,3,4
16:12:00	Facilitator gaat zitten		f

16:15-16:25 Complete questionnaire

Time	Observation	Activity	Actor
	Participant ask 6 can we use chatGPT to answer te		
16:12:00	questionnaire		6
16:13:00	Participant 4 is disappointed by the length		4
16:13:00	iedereen gaat rechtop zitten om te schrijven		
16:13:00	Participant 5: moet het in het Engels?		5
16:13:00	Facilitator: nee, het mag ook in het Nederlands		f
16:14:00	Participant 6: mag het in het Frans?		6
16:14:00	Participant 3: hoe is je Nederlands, Participant 6?		3,6
		Facilitator gaat even een luchtje	
16:14:00		scheppen	f
16:14:00	Participant 4: are you just going to leave us?		4
16:15:00	Participant 4: question about the questionnaire		4
	Facilitator: answers and adds that he would like to		
16:15:00	receive the prompt as well		f
16:16:00	Participant 2: is it ok if I keep it rather short?		2
	Facilitator: yes but I would like to have more about		
16:16:00	chatGPT		f
16:17:00	STILTE		
	Participant 2: zegt dat hij altijd meepraat met		
16:18:00	schrijven etc.		2

16:19:00	Facilitator voegt nog even toe dat ze geanonimiseerd worden	f
16:19:00	Participant 1 vraagt of er nog een borrel is	1
16:19:00	Participanten 2 en 4 antwoorden	2,4
16:21:00	Participant 1 kijkt op laptop	1
16:21:00	Participant 6 pakt alvast in	6
16:21:00	Participant 1 staat op en loopt de ruimte uit terwijl zijn spullen er nog liggen	1
16:22:00	Facilitator vraagt aan Participant 6 of hij de chatgpt prompt nog mag	6,f

16:25-16:30 Thank you & Closing

Time	Observation	Activity	Actor
16:22:00	Facilitator: oh yeah, thank you		f
16:22:00	Participant 6: FINALLY!		6
16:22:00	Participant 2 ook veel herhaling		2
16:22:00	Participant 4: nice! Klikt pen en staat op om daarna weer te gaan zitten en op de laptop te kijken		4
16:23:00	Participant 2: gaan er mensen mee naar boven? Participant 4: ja		2,4
16:24:00	Participant 2: bedankt voor deze workshop f, de structuur was heel goed		2
16:25:00	afsluiting		