

Knowledge required for the training program

Introduction

The main problem is: Employees of GroupM currently have too little knowledge to effectively use generative AI in their workflow. Generative AI is a broad topic that can confuse many beginners on where to start. The purpose of this research is to narrow it down and make bite-size information for beginners to easily adjust to the topic and make them ready to effectively use it. It is important to measure the target audience's current understanding of generative AI and what information they are missing to make the workshop relevant.

This document aims to gather all the information needed on generative AI to make an effective training program for employees of GroupM.

Method: Library research, literature study (survey, day in the life)

Main question: What information do the employees of GroupM need to know/learn to effectively use generative AI in their daily workflow?

Sub Questions:

- What is the target audience's current knowledge of generative AI?
- What is general information everyone needs to know about generative AI?
- What are the possibilities for generative AI in the creative departments' workflow?
- Which are the most developed tools that can be used for creating/inspiring new content and its limitations?
- How can you use the tools to create the desired output?
- What are the legal and ethical principles to look out for when using generative AI?

What is the target audience's current knowledge of generative AI?

In the first interview rounds there was a clear difference between the employees of GroupM. There is a vast group of people that already used and experimented with generative AI, at home but also at work. They see the potential it has but still have sometimes trouble with how to effectively use it.

The other group didn't yet try generative AI. They have seen colleagues use it but didn't try it out themselves. They don't know where to use generative AI in their workflow and find it difficult to start using generative AI.

They both have similar ideas of it being just a positive tool that would help make tasks more efficient and would be happy if generative AI is implemented within GroupM.

To get a deeper understanding of what exactly their knowledge is and how they use it now I created together with Anouk Min a survey to test their knowledge. I used real-life scenarios where they would use generative AI text prompts. Based on their answers it becomes clear how advanced they are with writing effective text prompts.

In total 11 people filled in the survey. At the start of the survey we asked if they already used generative AI and others that didn't try. They will get separate questions during the survey.

The people that already used generative AI started with the questions: what AI they used, how often and where they used generative AI.

Survey

Question 1

Welke generative AI tools heb je wel eens gebruikt? Meerdere antwoorden zijn goed
6 antwoorden

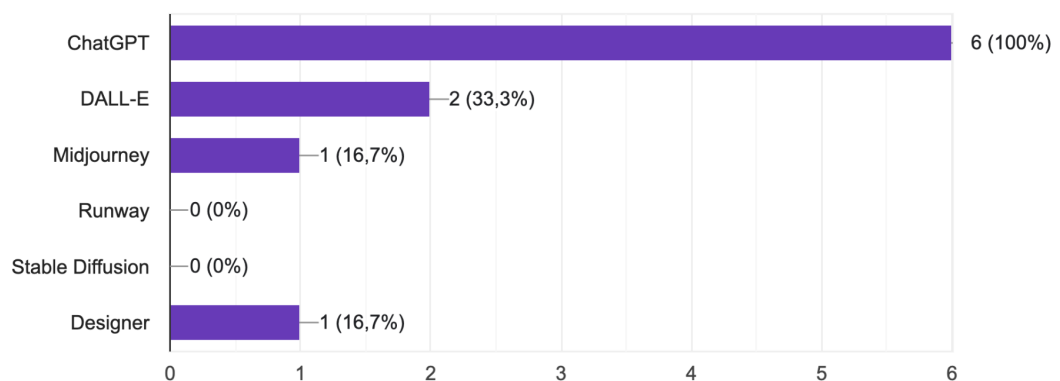


figure 1: Survey question 1 - Which generative AI have you already used?

Most people used ChatGPT and some of them already tried image generation from DALL-E, Midjourney and Designer.

Question 2

Hoe vaak gebruik je generative AI?

9 antwoorden

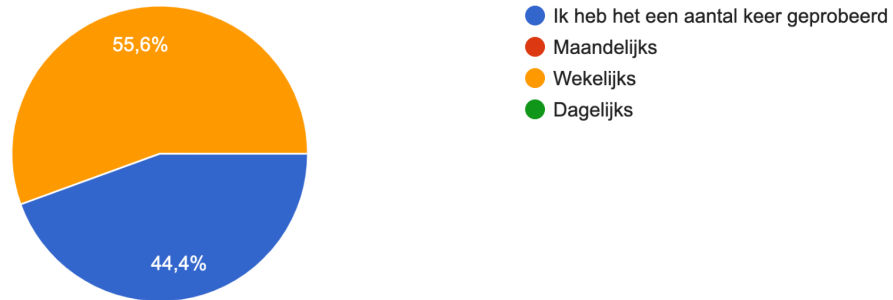


figure 2: Survey question 2 - How often do you use generative AI?

The next question was aimed at how many times they already used generative AI. The majority already use generative AI weekly but the other half only tried it a few times. Meaning that still half only experimented with it and are not using it in their own workflow.

Question 3

Waar gebruik je generative AI? Meerdere antwoorden zijn goed.

9 antwoorden

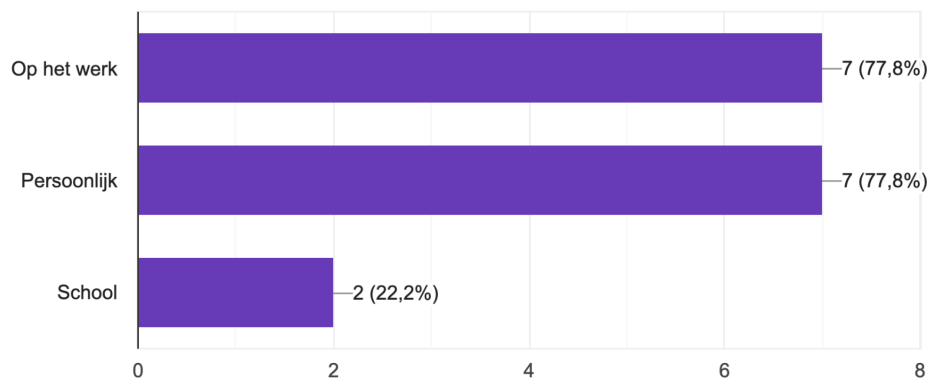


figure 3: Survey question 3 - Where do you use generative AI?

Most people answered with: at work and for personal use. Meaning that generative AI is seen for the potential it can be used at work but is also still mainly used for themselves. For the next questions it was important to get a deeper understanding where they used, what problems they encountered but also important what other things they would like to know about generative AI.

Question 4.1

For what do you use generative AI and Why?

People answered that they used generative AI for:

- Writing summaries, getting quick answers for research questions.
- Great source for quick inspiration and solving problems. Only used when they are too difficult for a simple google search.
- Writing ad copy but also like to search for recipes or vacation locations.
- Making a sportagenda
- Testing products and translating text.

In general they use ChatGPT to summarize text, write adcopy or translate but also use it to help with a starting point or solve difficult problems as chatgpt can give quick solutions. They also use it for their personal use mostly to get inspiration or summarize information.

The employees mostly use text generation for their work but not really any image generation. The reason being image generation cannot be used as an end product for a client because of legal problems it phases and the lack of detail. Although text generation has come to the point that it can be used as an end product, the reason why these employees already use it in their own workflow. Still there was a large group that only experimented with this technology. The next question will answer the problems they experienced when using generative AI.

Question 4.2

The people that didn't yet use generative AI got other questions from the ones that did try. The question for them was:

Why don't you use generative AI?

They answered that they are afraid of the legal and ethical concerns. One person said that they didn't want to use it because generative AI stole art from real designers without consent.

These people are afraid for the legal consequences and some don't use it for the ethical dilemma around AI.

Question 5

What problems did you encounter when using generative AI?

People answered with:

- I find it difficult to ask a good question that gives me the correct answers

- It is in some cases very technical and I don't have that knowledge
- Writing a good questions is often difficult
- The information is not specific for my work
- Finding the correct queries/questions to get good results.
- Translating text is not always correct

The general problem people experience is that they don't know how to write a good text prompt to get the desired result. They get generic answers not specific enough for them to use and translating is sometimes incorrect.

Question 6

What else would you like to learn about generative AI?

People answered with:

- I would like to know more about the technical aspect
- In which specific scenarios I could use generative AI for my work
- How I could use it more for my own work
- As much as possible, I find it really interesting
- How it works and what you can possibly do with generative AI.
- Legal concerns, how I could best use it, what the best way is to communicate with generative AI.
- All the possibilities with generative AI, what tools could be best used for implementation and possibly could test and make work more efficient.
- What the legal problems are and how I can use generative AI in my own work.

People mentioned a lot how they could use it for their own work. Especially in which scenarios it could be used and the possibilities. They would also like to learn more on how to best use generative AI and how you can communicate with the tool to get the best output. The last is that they would like to learn more of the legal concerns when using generative AI and how they could avoid these problems when using the tool.

Scenarios

The purpose of the survey is to test the general knowledge of people in the creative department and how they currently write prompts. To test how they write prompts there are certain scenarios created that could happen in their daily workflow. In these scenarios we ask the participant to fill in a text prompt they would use to solve the situation.

Scenario 1

Je moet een advertentie maken voor de klant Volvo. Zij willen graag een afbeelding waarbij hun auto over het strand rijdt. Hiermee willen ze de jongere doelgroep aanspreken.

Welke prompt zou je gebruiken om hiervoor een afbeelding te genereren?

People that tried generative AI answered with:

1. Volvo auto rijd over het strand, het moet de jongeren doelgroep aanspreken
2. Teens driving a blue volvo car on a beach, sunny, summer
3. A group of young people riding in a Volvo car at the beach
4. Volvo rijdend over het strand, aantrekkelijk voor jonge doelgroep
5. Luxe auto van Volvo die over het strand rijdt
6. Make me an advert that is set on a beach at the sea with a Volvo car driving on the beach include people around the age group 13 to 30
7. Volvo car riding on the beach, sunset, saturated colors, realistic photo.

People that didn't try generative AI answered with:

8. Volvo car driving at the beach at twilight
9. Een groep vrienden op het strand met hun Volvo auto.

For image generation it is important to have a clear idea of how you want your image to look like. Image generation doesn't always use natural language to make images. You can't talk to an image generator like you do with ChatGPT. It is important for image generation to include attributes, the setting, what effects or filters you want in the image.

The second and seventh prompts are the best out of these. second included the target audience, what car and in which setting with some attributes. The seventh forgot to include the target audience. The people that don't have an experience with generative AI are pretty close to some of the prompts above. Eight did well doing it in English as most models are better with the English language.

Scenario 2

Je bent gevraagd om een presentatie te geven aan scholieren op het MBO over het gebruik van traditionele media in een steeds meer digitale wereld. Je vind het lastig om de presentatie goed in te delen en vraagt je af welke onderwerpen je in je presentatie moet verwerken.

Welke prompt zou je gebruiken om hiervoor een tekst te genereren?

People that tried generative AI answered with:

1. Wat zijn belangrijke onderwerpen over traditionele media? En maak dit in presentatievorm voor studenten op het MBO.
2. Ik heb hulp nodig bij het bedenken van onderwerpen voor mijn presentatie, deze presentatie gaat over het gebruik van traditionele media in een steeds meer digitale wereld. Het is voor het mbo dus de taalgebruik moet te begrijpen zijn voor studenten van rond de 18 jaar oud. Ik zou graag 6 verschillende onderwerpen binnen behandelen. Welke 6 onderwerpen kan ik het best kiezen?
3. Wat zijn de verschillen tussen traditionele en digitale media
4. Welke onderwerpen zijn het belangrijkste in een presentatie over traditionele media in een digitale wereld
5. Ontwikkeling van traditionele media in een steeds meer digitale wereld te gebruiken voor presentatie aan MBO scholieren
6. Give me 10 subject regarding traditional media versus a digital world that I can use for a powerpoint presentation that tells a good linear story.
7. Essentiele onderdelen presentatie media
8. Generate a text which explains the use of traditional media within the digital world. Easy to understand for kids within the age of 12 and 16 years old.

People that didn't try generative AI answered with:

9. -
10. Een presentatie over traditionele media in deze moderne tijd

To make a good text prompt it is important to be clear about your target. What do you want to create, what is the context you want to write in, who are you making it for. ChatGPT uses natural language meaning that it can best respond to a normal sentence or question.

The second prompt does this very well, he gives context, the target, and for who he is writing. Also asks for alternatives where ChatGPT is best. Six is also very good as it gives the context of the text generated will be used for a presentation. Eight is also good for the same reasons above.

The people that didn't yet try generative AI make the mistake of not saying what they want or asking a question. The other one didn't even fill in an answer.

Scenario 3

Je wilt graag een ontwerp maken voor een banner van Kruidvat. Ze willen hierbij hun eigen nieuwe shampoo-lijn promoten. Je hebt deze week al een aantal ontwerpen gemaakt en je merkt dat je inspiratie op aan het raken is. Je besluit de hulp van generative AI in te schakelen om inspiratie op te doen.

Welke prompt zou je gebruiken om hiervoor een aantal afbeeldingen te genereren?

People that tried generative AI answered with:

1. Geef mij verschillende alternatieven voor shampoo banners.
2. Ik zou de bestaande afbeeldingen uploaden en vervolgens met img2img variaties genereren gecombineerd met een prompt zoals: Shampoo advertisement, professional, clean
3. Display een hoop shampoo producten op een creatieve manier
4. creatieve advertentie van Kruidvat met eigen nieuwe shampoo lijn
5. kruidvat banner voor shampoo producten
6. make me 10 new shampoo ads
7. Inspiratie advertentie banner shampoo
8. Generate a banner with Kruidvat's latest shampoo line

People that didn't try generative AI answered with:

9. funny image using shampoo
10. Modern product shots

As mentioned before it is important for image generation to be clear of what you want. For this scenario it was important to not use the name Kruidvat as the products that will be displayed are new to Kruidvat Shampoo-line. If you use generative AI it is important that you don't add unreleased content. The people that made these prompts plain about shampoo products did the best. In the situations before, the second and eighth participants made the best prompts but they made the mistake of letting unreleased content in the generative AI, making this a problem.

The problem here is that people are unaware that they cannot put unreleased content in a generative AI, making it very dangerous for client detail to leak.

Scenario 4

Je bent bezig met een mediastrategie maken voor vanHaren. Ze willen met deze campagne hun awareness met 20% verhogen. Je moet besluiten welke kanalen het belangrijkste zijn om het budget over te verdelen. Je hebt echter niet veel tijd meer en besluit om ChatGPT te gebruiken om snel te onderzoeken hoe je dit budget het beste kunt verdelen over de verschillende social media kanalen.

Welke prompt zou je gebruiken om hiervoor de juiste tekst output te krijgen?

People that tried generative AI answered with:

1. Welke social media kanalen hebben het meeste succes om hun awareness te verhogen voor het verkoop van schoenen aan een jongeren doelgroep?
2. Ik moet een mediastrategie maken die de awareness met 20% moet verhogen, op welke social media kanalen kan ik het beste hoeveel budgeteren?
3. Welke social media platforms zijn het best om schoenen te promoten
4. Maak een budgetverdeling over social media kanalen voor een campagne die het doel heeft om awareness met 20% te verhogen
5. beste budgetverdeling tussen mediakanalen voor het verhogen van merk awareness met 20%
6. What are the most rewarding platforms to put ads on to create awareness
7. Hoe moet je budget verdelen op social media kanalen voor campagne
8. Which media channels are most effective for the vanHaren brand?

People that didn't try generative AI answered with:

9. which social media is most used by budget shoe buyers
10. Welke social media kanalen hebben de grootste awareness?

In this scenario it was important that people wouldn't leak any client details again and how they would write a prompt in a difficult situation. Number one, two and four are the best. But some of them lack a clear target, the target audience, for what kind of company and more context. This is of course because the situation is not well written which makes it difficult. It was especially important to not add the vanHaren brand in your prompt. The people that didn't yet try generative AI did well asking for the good questions that needed to be answered first before they could continue with the budget and awareness campaign.

Scenario 5

De klant ICI Paris wil op Valentijnsdag hun nieuwe parfumlijn van Dior voor vrouwen promoten op social media. De afbeeldingen zijn klaar, alleen moet er nog tekst geschreven worden. De doelgroep is mannen in een relatie rond de leeftijdsgroep van 30 - 40 jaar. Je hebt geen idee hoe je een pakkende tekst schrijft voor deze advertentie. Je raadpleegt ChatGPT voor het schrijven van deze copy.

Welke prompt zou je gebruiken om een goede copy te schrijven in ChatGPT?

People that tried generative AI answered with:

1. Ik heb verschillende pakkende tekst nodig voor het verkopen van parfumlijn voor vrouwen op valentijnsdag, de doelgroep die je moet aanspreken zijn mannen tussen de 30 - 40 jaar in een relatie
2. Ik heb een pakkende tekst nodig voor een valentijnsreclame van parfum. Het doel is om mannen tussen de 30 en 40 jaar te bereiken die een relatie hebben. Het doel is om dit parfum te verkopen aan die mannen in een relatie zodat ze dit als kado kunnen geven aan degene met wie ze een relatie hebben. De pakkende tekst is bedoeld voor op social media
3. Geef me een slogan die mannen overtuigt om een parfum voor zijn vriendin/vrouw te kopen
4. schrijf een korte, pakkende tekst voor een nieuwe vrouwen parfumlijn van Dior met als doelgroep mannen in een relatie 30 tot 40 jaar
5. valentijnsdag advertentietekst van xx karakters voor ICI paris voor mannen tussen 30 en 40 jaar en een partner hebben
6. write me 10 ad lines about a woman's parfum for valentines day aimed at men that are between 30 and 40 year old.
7. Voorbeeld copy tekst advertentie valentijnsdag, parfum voor mannen 30-40
8. Text for the new fragrance line of Dior. Target group male within 30 and 40 years old whom have a girlfriend they want to treat on Valentinesday.

People that didn't try generative AI answered with:

9. what triggers man to buy perfume
10. Schrijf een promotie tekst voor mannen die vrouwen een parfum cadeau moeten doen voor Valentijnsdag

For this prompt it is important that you make it clear that ChatGPT needs to write a copy for a specific target audience and in what context it needs to write in. For writing a copy it is helpful to ask for alternatives and an amount of words the copy needs to be. This is although not specified in the scenario. Number one, two, six are good. The first to go in detail about the context it needs to be in. Six asks for a word amount together with the target audience. Again it is important because this campaign is not released content to not at any client detail or product detail. For this reason number five and eight didn't score well on the prompt.

For the people that didn't try out generative AI ten comes close but is missing some of the parameters making the prompt even better. For example the word count, alternatives, and how the text should be written.

Conclusion

In the survey the main question was to find out what the target audience's current knowledge is of generative AI text prompts. In the first stage I started with asking general questions of generative AI. One of them being what the problems they experienced. The main problem that was mentioned is that they don't know how to write a good text prompt and they would like to learn more about this. They also mentioned that they had difficulty using generative AI in very specific situations and some were afraid of the legal and ethical concerns around generative AI.

The second part of the survey there were scenarios in which the participants needed to write text prompts. In these scenarios some people wrote good text prompts while others lacked. In general they don't have the information for setting up a good text prompt. In difficult situations they found it hard to create a good text prompt to solve those specific situations. In some of the scenarios the target was to test if people would add sensitive data in a prompt. This was the case when the people that were relatively good in writing text prompts used sensitive data to create the prompt. This is a big problem if this client data is leaked.

In general the information that people need and want is:

- How to write good text prompts.
- In which work situations you can use generative AI.
- What the ethical and legal concerns are when using generative AI.

What is general information everyone needs to know about generative AI?

For people that are just starting with generative AI it is important to have a brief introduction of what it is and not too technical. They don't exactly need to know how it works but it is important how to use it.

Generative AI

Generative AI in simple terms is a type of artificial intelligence that is capable of creating new content. This technology is trained on large amounts of data and is able to see patterns in that data. Based on what you want you can create anything from new images, text, audio, videos, etc. The possibilities are endless.

Technology

If the generative AI has been trained on this data, you can give it input and it will create for example an image. It is important to be very specific so that the generative can define what you want. If you want to create an image of a flower, define what type of flower or a certain color scheme, the generative AI will generate a new image that fits the description.

GAN

For generating images they use Generative Adversarial Network (GAN), a type of neural network. GAN consists of two neural networks: a generator and a discriminator; they work together to create images. The generator will create images based on the data and patterns it has been trained on while the discriminator evaluates the quality of the generated images and provides feedback to the generator. The loop of feedback continues until the generator creates high-quality images that are indistinguishable from an image created by humans. An example of programs that use this technology are Midjourney, Dall-E, Stable Diffusion, etc.

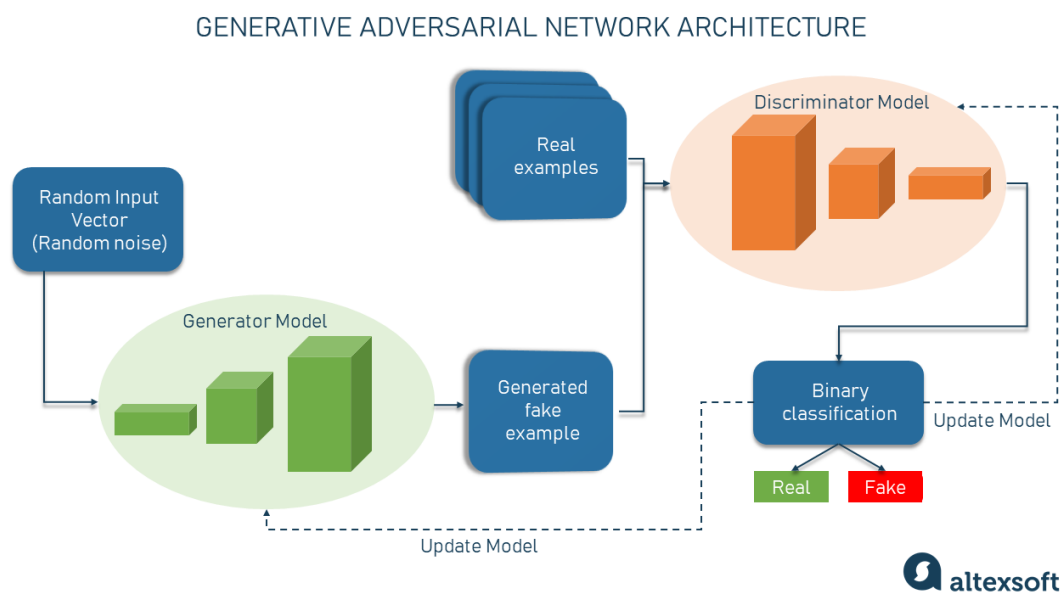


figure 4: GAN architecture diagram (AltexSoft, 2022)

Transformer

For text generations, like ChatGPT it works by using a type of neural network called a transformer. The transformer can understand language. It can figure out what the words mean and the coherence between them to make sentences. It works as follows: the transformer reads the input you have given and breaks the sentence in smaller parts called tokens. Tokens can be words or even parts of words. The transformer then looks up what this means in its data training set and will figure out what it means. After that it will give you a response. Just like the GAN the transformer learns more from language examples. It will get over time better at understanding and responding.

A neural network is a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain. (Amazon, z.d.)

Synthetic media

Synthetic media is all media created by an AI. This media is entirely created by computers using AI algorithms. Some big advantages of synthetic media is by how fast it is created and inexpensively. Meaning that there are many possible uses in a marketing industry.

One common example of synthetic media are deep fakes. A deepfake consists of multiple video frames with a person that you can manipulate in saying or doing something while this person never did it. All these frames are put together into a video. This technology can be used especially in the entertainment, marketing, and other industries but it raises concerns for the potential misuse of these technologies.

In short, synthetic media refers to all media that is created using AI algorithms.

What are the possibilities of generative AI being used within the creative departments workflow?

With every advertisement or campaign held for a client within GroupM a creative cycle is applicable for the actual development and implementation of a marketing strategy. This creative process involves several stages each with their own activities and goals. This process is used to help marketers create effective campaigns that connect with their target audience and achieve their marketing goals (KPI's).

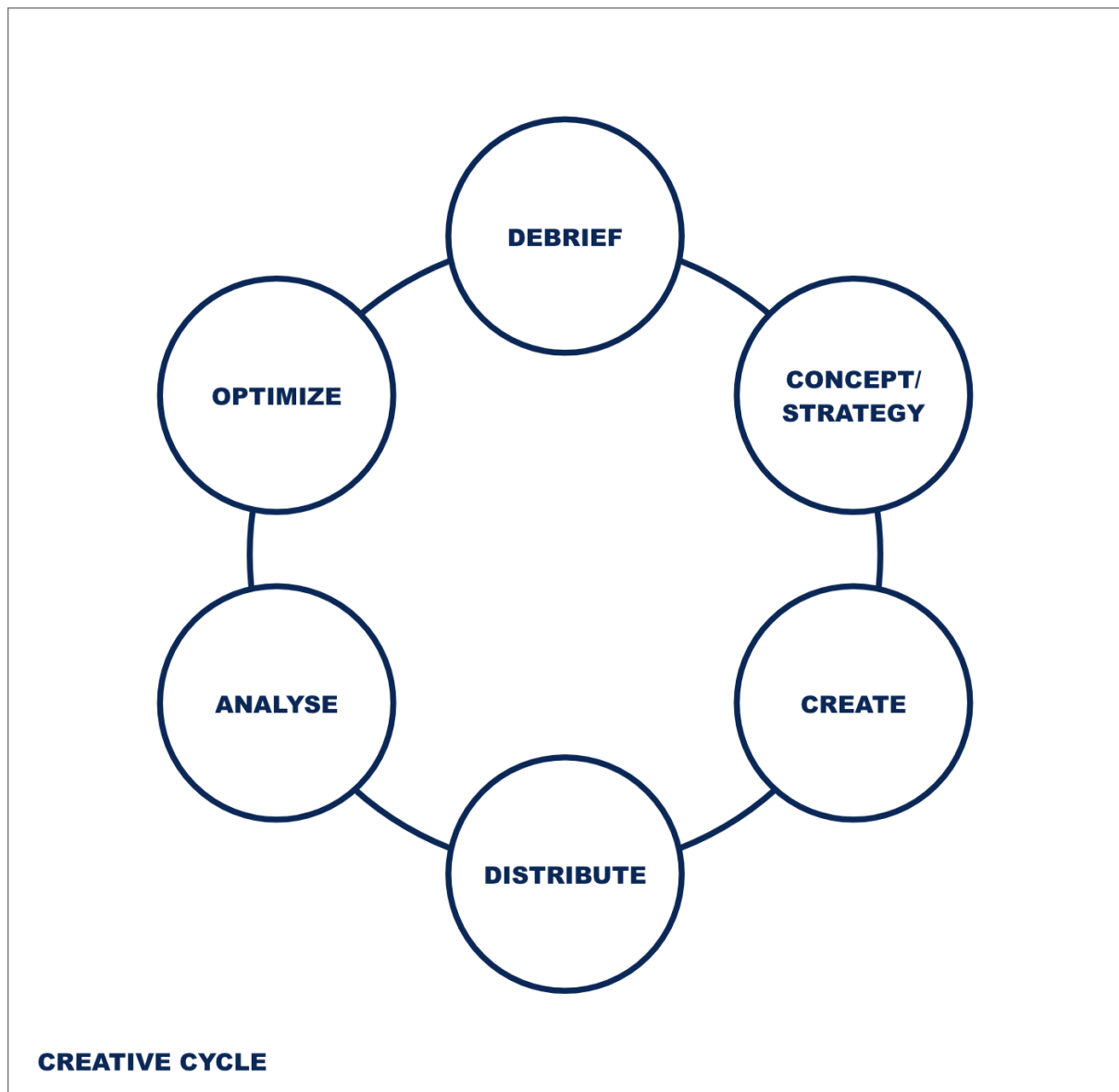


figure 5: Creative cycle of GroupM

In figure 5 you see the creative cycle of GroupM for an incoming assignment. In this cycle a product will be created. It depends on the clients' wishes and goals if the whole cycle is done by GroupM.

Debriefing: In the debriefing phase the digital producer, creative lead and sometimes other people will discuss the client's wishes and goals for the assignment. Here they will discuss what the client has so far, what their thoughts are on the matter and possibly think already of the concept. Giving advice along the way steering the client in the right direction.

The task include: gathering all the information from previous campaigns and thinking of other solutions for the client. Discussing the goals and wishes of the client. Generative AI could help with gathering information about these previous campaigns, help with asking correct questions and in general can be used for inspiring new novel ideas.

Concept & Strategy: After the client debriefing they have gathered as much information needed for creating a strategy or possible concept. In this phase a plan is created for a new campaign. Before the plan can be realized it is important to do research on previous campaigns. Again generative AI can help with the summarization but can also generate new ideas to improve the campaigns and give advice.

Most often an assignment already has a concept coming from an ATL bureau which GroupMs creative department needs to translate to the digital landscape. They use storyboarding in presentation format. This presentation's goal is to convince the client that the strategy explained and mockups that will be used in the campaigns are able to achieve the clients goals. This presentation is made in teams in which each member is working on different parts. In the presentation a recap of the former debriefing, then within the presentation there will be examples of advertisement for example in Tiktok, instagram, snapchat, etc. Why specific choices were made and they also test some of these designs on their performance. In the presentation will also be a description on how these banners, post are going to be distributed or created by another team. Generative AI can help with the setup of a presentation and can give inspiration for possible mockups for ads. It can suggest ideas on how to improve a campaign. It can also help generate a good coherent story to convince the client.

Create: In the create phase they are making the content needed for each campaign. After the storyboard is approved by the client they work parts of the campaign out. The creative department of GroupM will make the visual representation of the ads, they create the images for the social media post, banners and write copy. Generative AI would be most useful here as creating content could be used well.

For creating banners they sometimes have trouble with the format of images. Sometimes an image is too small. With generative AI you can change the scenario behind a product making the banners format correct. ChatGPT can help with writing copy and in general tasks. It can also give suggestions on how and where the advertisements would work best and why. Generative AI could help with testing and summarizing data quickly. Sometimes when content needs to be animated in large amounts ChatGPT can help write code to automate this process saving people time. Many possible use cases are applicable in the create phase.

For my project I will only focus on the creative department and how they could use it. Generative AI is applicable in every phase of the creative cycle. It is important to inspire ideas on where and how they could use it.

Which are the most developed tools that can be used for creating/inspiring new content and its limitations?

There are a vast amount of generative AI created by big companies but many more start-ups have their own generative AI tools available. Generative AI is used to create new content in all forms of media. There are so many tools out there that it has become hard to find an overview for all the tools. Sequoia has made a small overview of generative AI tools and what content they generate.

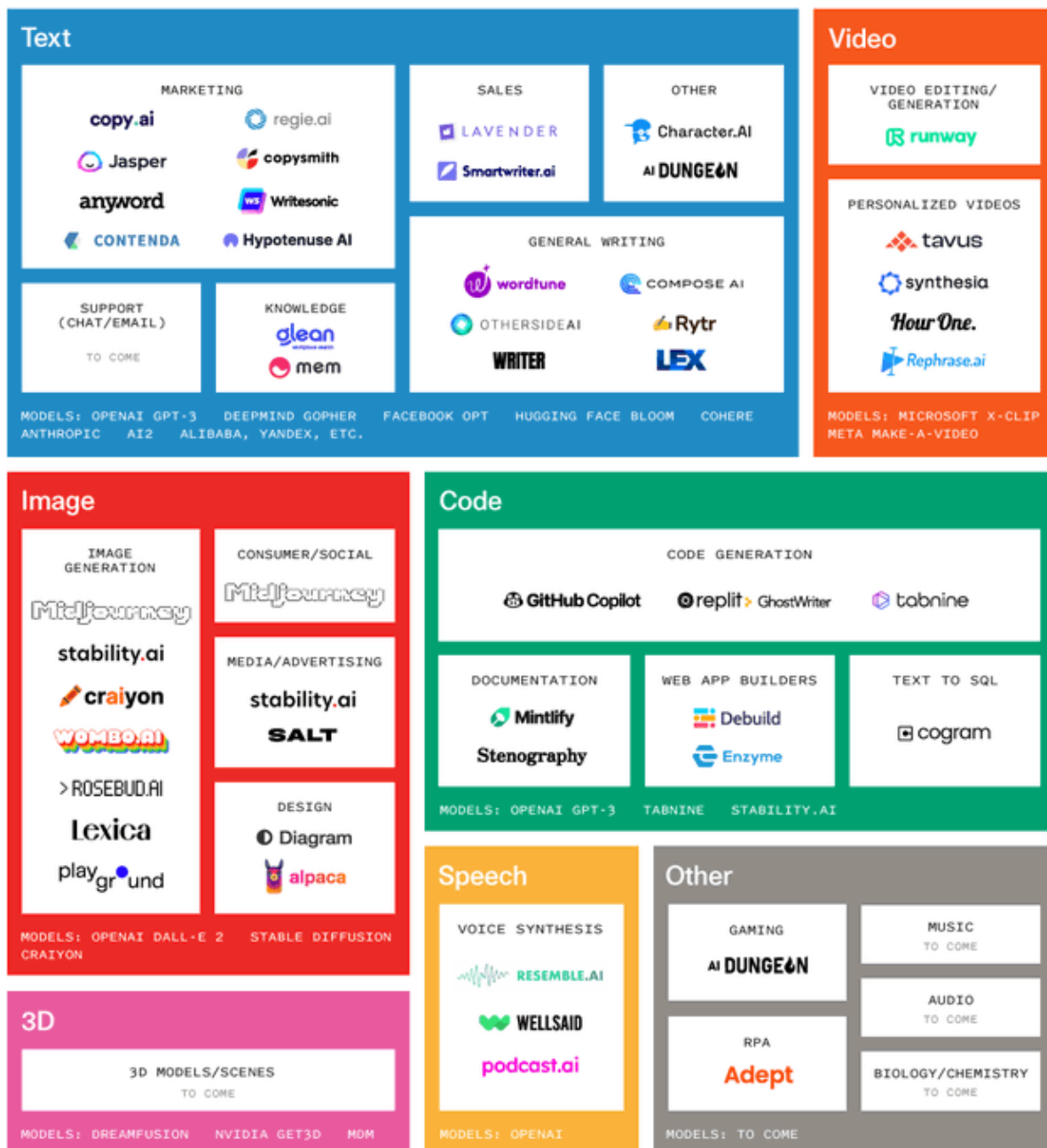


Figure 6: Sequoia the generative AI application landscape (Huang, & Grady, 2022)

This is an outdated image from 2022 about the generative AI applications but of now to date there are a ton more applications available. They are constantly evolving.

Within GroupM they already use some AI tools such as ChatGPT, Midjourney & DALL-E to create new content. I will look at these and other tools that could potentially be used within GroupM. As mentioned before, generative AI is consistently evolving and businesses are creating better tools. The tools I have chosen are now some of the best but this may change in the future. It is important to always look for new developments in this field.

Text to Text

Tool	Use cases	Problems	Cost
<p>ChatGPT: ChatGPT is a chatbot that can use NLP to create human conversational dialogue. It is created by a company called OpenAI. It was first released on 30 November 2022. Currently there is a ChatGPT-4. The latest ChatGPT also has computer vision meaning that it can detect images, what it is and even the meaning behind them.</p> <p>The things described in the columns are based on the beta version: ChatGPT-3</p> <p>There are lots of sources on how to use ChatGPT.</p>	<p>Content generation: product description, blog post, copywriting, ideas, etc.</p> <p>Translation: Automatically translate text.</p> <p>Conversational: Create intelligent chatbots, customer service, and virtual assistants.</p> <p>Writing code: Automate repetitive tasks, generate all code in different languages, debugging, code completion, etc.</p> <p>Educational: Explanations, summaries, writing presentations, etc. (Dilmegani, 2023)</p>	<p>Biased: GAI model is trained only up until 2021 and the dataset is limited making the GAI biased.</p> <p>Incorrect information: The AI wants to please the user which results in false content being generated.</p> <p>Computer power: Needs vast computer power resulting in every query costs a few cents.</p> <p>Data: Data is being stored from every query, so sending out sensitive data can be dangerous.</p> <p>Limited output: It has a limited capability of used output. You have to buy ChatGPT Plus.</p>	<p>ChatGPT-3: This version is free for the public to use.</p> <p>ChatGPT-4: Every month costs 20 dollars. (OpenAI, 2023)</p> <p><i>*Currently GroupM is working on a ChatGPT-4 Plus account.</i></p>
<p>Jasper AI: Jasper AI is a copywriting tool to write persuasive, engaging copy. It uses OpenAI's GPT-3 AI model. The difference between ChatGPT and Jasper.ai is that jasper is a more user-friendly platform that is specifically made for business use cases like marketing, sales and more.</p>	<p>Descriptions: Product descriptions, youtube, podcasts, advertising copy, marketing, etc.</p> <p>SEO: Writing more effective blog posts using SEO.</p> <p>Emails: writing better emails.</p> <p>Text content: general text</p>	<p>Technical topics: Technical topics are problematic.</p> <p>Junk content: When Jasper AI generators the incorrect content it costs you money.</p> <p>Incorrect content: You have to fact check sources.</p> <p>Plagiarism detection: When</p>	<p>It is not free to use. You have to pay for the amount of words you want to be generated and based on that it will calculate the costs.</p> <p>Starter: 20kK</p>

(Doyle, 2022)	content but most specifically on business cases.	using the plagiarism function it asks for more money. (Bitcatcha, 2023)	words for \$40/mo Boss Mode: 50K + more extras for \$82/mo Business: this has a custom plan & price. (JasperAI, 2023)
<p>Copy.ai: Copy.AI is a copywriter tool that is made for marketers and freelance writers to make detailed descriptions. It is also mostly used for business cases like Jasper AI. Copy.ai is using OpenAI's GPT-3 API.</p> <p>The difference between Copy and Jasper is that Copy is less expensive but has less functions as Jasper AI. https://yourlifestylebusiness.com/copy-ai-review/</p>	<p>SEO content creation, Ad copywriting, conversion rate optimization, social listening, review response writing, customer support, translation and language localization, dynamic pricing.</p> <p>Text content: General text content most specifically on business cases.</p>	<p>Incorrect information: The AI wants to please the user which results in false content being generated.</p> <p>Lags: There is often lag when you especially ask for smaller sections such as "Bullet Points to Blog Section".</p> <p>Long-form: Long-form content content is not optimal.</p> <p>Third-party: Third-party integrations are not available in this tool. https://yourlifestylebusiness.com/copy-ai-review/</p>	<p>You have three options to choose from.</p> <p>Free for 2000 words per month.</p> <p>Pro: \$36/mo, unlimited words and more extras.</p> <p>Enterprise: Custom price for your business and can use the API.</p>

tabel 1: Best text to text generative AI tools

For the generation of text, ChatGPT is by far the best generative AI out there. It currently lacks a good interface making it difficult for beginners to work with this tool. However the potential use cases for this tool are immense. Investing early in this technology and teaching people how to optimally use this powerful will help businesses prepare for the future of content creation.

Text to Image

Tool	Use cases	Problems	Cost
<p>DALL-E 2: DALL-E 2 can create original, realistic images and art from natural language (text prompt). It can combine concepts, attributes, and styles.</p> <p>This tool is created by OpenAI and is trained on GPT-3: trained to generate images, using a dataset of text-image pairs. (OpenAI, 2022)</p>	<p>Inspiration: It can help visualize what you want easily. Let the visualization inspire into creating better designs.</p> <p>Storyboarding: Make ideas visualize to set the mood of a story. It is also good for concepting.</p> <p>Efficient: It can generate in 10s a very detailed image.</p> <p>Produce rough layouts: generate a rough layout of what you want and make it better. (Schmitz, 2022)</p>	<p>Biased: The data is trained on a limited dataset.</p> <p>Guardrails: OpenAI is closely monitoring every outcome generated with this tool to prevent certain images violating their content policy.</p> <p>Dataset: They are filtering out images that are too explicit but they have been starting on deleting copyrighted images in their database. (OpenAI, 2023)</p> <p>Quality: Often the quality of the image is not that great but this is getting better over time.</p>	<p>The Beta is free for and you have 50 free credits for the first month. After that you will have 15 free credits every month. 1 credit is 4 images.</p> <p>Additional credit packs cost \$15 for 115 credits. (OpenAI, 2022)</p>
<p>Midjourney: Midjourney is a text to image generator that can create very realistic content and is continuously evolving. Midjourney can only be used as a Discord bot where you can use this AI to create images.</p> <p>The creator is David Holz, former Ultraleap employee. Right now it is one of the best image generative AIs out there. (Midjourney, 2023a)</p>	<p>Images: Create realistic images for websites, blogs, small business, etc.</p> <p>Mockups: Design quick and easy mockups for apps, websites and other UI.</p> <p>Logos, graphic design, posters, etc. You can get lots of inspiration using this tool.</p> <p>Quality: It can create very quality images with Midjourney.</p>	<p>Anatomy: The Midjourney 4 has difficulty with anatomy of people and animals. The hands are often the problem or with animals too many legs. Midjourney 5 is getting better and often doesn't make these mistakes.</p> <p>Editing: You can't edit the image in Midjourney self. You have to download it and do it in another program.</p> <p>Text: In general, image generators are bad at adding text in images. It is distorted and not real text. Although symbols are fine.</p>	<p>Currently there is no free version anymore. The CEO and founder of Midjourney David Holz said that they stopped the free trial because of "Extraordinary demand and trial abuse." (Vincent, 2023b)</p> <p>Basic plan: for \$10 per month and you will have 3.3 hours to generate images. Standard: \$30 15hr Pro plan: \$60, 30hr (Midjourney, 2023)</p>
<p>Stable Diffusion: Stable</p>	<p>Open source: Developers</p>	<p>Anatomy: it is not really good</p>	<p>Free and open</p>

<p>Diffusion is a text to image generator that is entirely free to use. The creator of Stable Diffusion is the founder of StabilityAI: Emad Mostaque and collaborated with RunwayML and LMU Munic, LAION, and EleutherAI.</p> <p>It is currently running on the web for people to try out this generative AI tool. (Stable Diffusion, z.d.)</p>	<p>can train and implement stable diffusion for their specific project and adapt it to their needs. Meaning that you can create your own trained model for example a client. Meaning that generative AI will only create brand images.</p> <p>Because it is open source you can have many ways of using Stable Diffusion in your favor if you have the knowledge to implement this technology in your own use cases. (Urrutia, 2023)</p>	<p>at creating humans but it is better at creating realistic photography, lightning in the photo-realistic scenes, 3D renders and designs.</p> <p>Copyright: Stable Diffusion is trained on millions of images. Sometimes when generating images there would still be a watermark visible. For this reason Getty Images is suing the creators of Stable Diffusion for scraping its content. (Vincent, 2023a)</p>	<p>source</p>
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tabel 2: Best text to image generative AI tools

For text to image generators Midjourney can create the most realistic images amongst the others and is by far the best image generator right now. However, it is not free and it can cost a lot. Stable Diffusion is free and open source. You can use this generative AI for your own use cases making it so interesting for companies to use this generative AI as you can train and create tailored images for clients. Within GroupM they are already experimenting with Stable Diffusion and what it can mean for clients.

Although the problem with image generation is that it causes some serious copyright scandals as it used copyrighted images from the web to train its datasets. Stable diffusion is open source making it easy to see what images they used but with Midjourney this is different. In general right now the best way to use image generators is to only experiment with these tools but not officially release anything as this can oppose ethical and legal problems.

How can you write effective text prompts for image and text generators to get the desired output?

ChatGPT, Midjourney, DALL-E and more generative AIs use a similar setup for creating new content. This is done via text prompting. A text prompt is a sentence describing what output you want to create. Not all generative AI tools use text prompts. You also have tools that use images as input but the more advanced generative AI tools use text prompts to give the user an output. For this reason I will only focus on text prompts.

As a text prompt decides what the output will be, it is important to have a clear understanding of how you can write an effective text prompt. I will specifically look at text to text and text to image generators. The reason for choosing these two is because of the potential it can already offer.

Text generation

For text generation there is currently one out there that has great potential, ChatGPT. I will mainly focus on ChatGPT because most text generators are based on the OpenAI model for ChatGPT. Not only that but there is a lot more information available for the use of ChatGPT and how to effectively prompt.

To begin with, how does it work? There are certain steps the tool makes to give the user an answer.

1. **the user inputs a text into the interface of ChatGPT:** The input can be a question, a sentence, a request for information or some casual conversation.
2. **The system behind ChatGPT analyzes the input through a machine learning algorithm named a transformer.**
3. **A response is formulated back to the user.**
4. **The user can give another input which ChatGPT will analyze and give a response:** ChatGPT remembers your conversation, you can hook back to earlier asked questions and fine-tune the output.

As said before a text prompt defines how well the output will be. The importance of writing a good text prompt is important to effectively use this tool. Often when you are not specific enough you will get very generic answers and will not get the specific information you needed.

Example of an **effective prompt** is:

- *Can you provide a summary of the main points from the article 'The benefits of using generative AI'?* - This prompt is providing enough information for ChatGPT to understand what it needs to do.

Example of an **ineffective prompt** is:

- *Can you help me with a presentation for school?* - The prompt does not specify a target of what it needs to do, a presentation can be many things, doesn't provide a topic and no context. With questions like this you get very generic answers.

Common issues that arise when using ChatGPT are:

- **ChatGPT doesn't understand the prompt or provides an unrelated or inappropriate response:** This happens when a prompt is unclear, ambiguous, or includes jargon or language that is unfamiliar to ChatGPT. It can also occur if there is not enough context or information to understand the prompt.
- **ChatGPT provides generic or uninformative responses:** This happens when a question is broad or open-ended, or again if the prompts lack the necessary information to understand the topic.
- **ChatGPT does not follow instructions or constraints provided in the prompt:** This can happen when the instruction or constraints are not clear or inconsistent during the conversation.
- **ChatGPT provides repetitive or unrelated responses:** This can happen if a prompt lacks guidance or if the conversation is not really focused on the topic.

There are some key things to keep in mind when writing a text prompt:

1. **Be clear & concise:** The prompt should be easy to understand and convey a clear message for ChatGPT. Avoid ambiguity and remove words that are not needed.
2. **Specify a target:** The prompt should have a clear target of what ChatGPT needs to create for you. By adding the target of what ChatGPT needs to create will give you a better end result closer to what you desired.
3. **Context:** Giving context helps ChatGPT understand the purpose and meaning behind the prompt and can generate more accurate and relevant responses. Context could be example information of the target audience, the problems they experience, market, style, etc. When the context is clear, ChatGPT can give you very accurate responses. Important to remove context that is not important for the response.
4. **Guidelines:** If you want something specific from ChatGPT it helps when you give guidelines on what the tool needs to create. For example the amount of words the response should have, specific attributes that need to be included, in what kind of style it needs to be written, write it in bullet points, in a table, etc.
5. **Ask for variations:** If you need to create something unique and you are specifically asking for inspiration on a text or product, asking variations may help. This can help with sparking new ideas from the given variations.
6. **Iterate and fine-tune:** ChatGPT remembers your previous chat. This makes it easy to fine-tune your prompts and get the answers/output you want. Iterating is therefore very important and of course asking the correct questions.
7. **Be creative, unique & experiment:** When a prompt is different from others you will get better and surprising answers. When sticking with the basics you may find yourself getting generic answers.

These factors can already help in creating better prompts. Although in some cases you are lost in what you want to ask or find it difficult to get the correct answers. Prompt patterns can help with asking better questions to the chatbot.

Prompt patterns

Prompt patterns are similar to software patterns. They provide reusable solutions to a recurring problem within a particular context. Prompt patterns are also reusable but they mainly focus on LLMs (Large-scale Language Models). These prompt patterns can be used for a variety of problems that often occur in a LLM. In the research paper five categories were found. Each category solves different problems and multiple methods can be used to solve these recurring problems in specific situations.

Pattern Category	Description	Prompt Pattern
Input Semantics	Defines how a LLM interprets input. It is useful to express ideas that are hard to define in natural language.	Meta Language Creation
Output Customization	Defines how the eventual output should be formalized in the LLM.	Output Automater Persona Visualization Generator Recipe Template
Error Identification	Identifies and resolves errors in the eventual output of the LLM.	Fact Check List Reflection
Prompt Improvement	Helps with improving the input of an user and provides additional context in the output.	Question Refinement Alternative Approaches Cognitive Verifier Refusal Breaker
Interaction	Focussed on the interaction between the user and LLM. Helps with setting up follow-up questions.	Flipped Interaction Game Play Infinite Generation
Context control	Focussed on controlling the contextual information in which the LLM operates.	Context Manager

tabel 3: Pattern categories (White, 2023)

Input semantics

Pattern 1: Meta Language Creation

This pattern is used when normal language can't describe what you want. This pattern lets you create an alternate language that an LLM can understand. It can be very effective if you don't want to continuously type for example a whole prompt but with one short keyword it will give you the answer.

Prompt outline	When I say X, I mean Y (or would like you to do Y)
Example prompts	Below is a custom language that uses a shorthand notation to describe the format of each username and password, such as: <ul style="list-style-type: none">- "U:3L,3N" means username with 3 random letters followed by 3 random numbers.- "P:4S,2N,2S" means a password with 4 random symbols, 2 random numbers and 2 random symbols. Task: U:3L,3N P:4S,2N,2S x100 https://www.linkedin.com/pulse/prompt-patterns-101-creating-your-own-shortcuts-gpt3-vamshi-velmajala/
	From now on, if I ask you to create a persona, put the output in a table.
Consequences	Important to not use ambiguities that will degrade the LLMs performance. Avoid certain prompt such as "Whenever I say 'a', I am referring to Tom"

tabel 4: Pattern 1: Meta Language Creation

Output Customization

Pattern 2: Output Automater

This pattern allows the user to generate scripts to automate certain steps of the output. This can be useful if generating output for code to let the LLM automatically do these steps for you but also for big data.

Prompt outline	Whenever you produce an output that has at least one step to take and the following properties.
	Produce an executable artifact of type X that will automate these steps.
Example prompts	From now on, whenever you generate 10 advertisement copies, generate a script in [programming language] that can put this data directly into a google spreadsheet.

Consequences	It is important to identify clearly what the limitations and the context when the output needs to be automated. When there is not enough context it will respond that it can't automate things.
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tabel 5: Pattern 2: Output Automater

Pattern 3: Persona

The persona pattern gives the LLM a role in which they need to play as. The response will be based on this viewpoint or perspective. This pattern is very handy if you want a certain opinion on things based on a professional. It is important to add context who this persona is, this way LLM can better predict the output.

Prompt outline	Act as persona X
	Provide outputs that persona X would create
Example prompts	Act as an UX-designer that has 10 years experience in the field. How would she create a workflow for a recipe app?
	Act as a Bill Gates what are the main takeaways, put this in a summary and write me what his thoughts are on this article [article here]
Consequences	When you let the LLM act as an inanimate or non-human it will make certain assumptions regarding its context. For example, it acts as a linux terminator.

tabel 6: Pattern 3: Persona

Pattern 4: Visualization Generator

LLMs can mainly produce text as of now but many text output could be better visually explained. The visualization generator pattern allows the user to generate scripts for another format. This output can be put into another tool and be visualized. You can use this well to ask for image prompts.

Prompt outline	Generate an X that I can provide to tool Y to visualize it
Example prompts	Whenever I ask you to visualize something, please create a draw.io file or DALL-E prompt that I can use to create the visualization. Choose the appropriate tools based on what needs to be visualized.
	Write me a prompt for Midjourney. The visualization I want to create is for a car website, big home banner.
Consequences	The output generated still needs to be processed by another tool.

tabel 7: Pattern 4: Visualization Generator

Pattern 5: Recipe

LLMs can mainly produce text as of now but many text output could be better visually explained. The visualization generator pattern allows the user to generate scripts for another format. This output can be put into another tool and be visualized. You can use this well to ask for image prompts.

Prompt outline	I would like to achieve X
	I know that I need to perform steps A ,B ,C
	Provide a complete sequence of steps for me
	Fill in any missing steps
	Identify any unnecessary steps
Example prompts	I am trying to create a persona for an app. I know they need to have a name, background and motivation. Provide for me a complete step-by-step plan to create a persona. Identify any unnecessary steps.
Consequences	It can be difficult for users to provide a well-specified description of what they would like to implement, construct or design.

tabel 8: Pattern 5: Recipe

Pattern 6: Template

The template pattern is used to ensure that the LLM's output follows a precise template. It can be useful if you want the output to be in a clear structured way. This could come in handy when exporting data in other programs.

Prompt outline	I am going to provide a template for your output
	X is my placeholder for content
	Try to fit the output into one or more of the placeholders that I list
	Please preserve the formatting and overall template that I provide
	This is the template: PATTERN with PLACEHOLDERS
Example prompts	I am going to provide a template for your output. Everything in all caps is a placeholder. Everytime that text is generated it should fit into the placeholders. The template will be in this file [link]. Title: "Generate a title for a project X"
Consequences	The LLM's output is filtered on the format of the template meaning that additional information is not provided that might have been

	helpful for the user. The filtering makes it also difficult to combine this pattern with others.
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tabel 9: Pattern 6: Template

Error identification

Pattern 7: Fact Check List

This pattern is used to list facts in the output that was used to generate the final output. The list of facts can help the user identify if the output generated by the LLM is made on assumptions or actual facts. It is a great way to test if the output is correct. This list can be seen as the sources where the LLM bases its answers on.

Prompt outline	Generate a set of facts that are contained in the output
	The set of facts should be inserted in a specific point in the output
	The set of facts should be the fundamental facts that could undermine the veracity of the output if any of them are incorrect
Example prompts	From now on, when you give me an answer, create a list of facts that the answer depends on. List this set of facts in bullet points at the end of the output. Only include facts that are related to the topic generative AI.
Consequences	The pattern is used when requesting information that needs to be fact checked. When requesting this fact check list for code it will not generate a response. ChatGPT can't fact check the code.

tabel 10: Pattern 7: Fact Check List

Pattern 8: Reflection

The reflection pattern's goal is to let the model explain the rationale behind the given response. This pattern informs the user how the LLM has arrived at its answers which helps the user identify/judge the answer given.

Prompt outline	Whenever you generate an answer
	Explain the reasoning and assumptions behind your answer
	(Optional) ...so that I can improve my question
Example prompts	Whenever you generate an answer, explain the reasoning and assumption behind your selection of which social media platforms are better for posting shoe ads. If possible, use specific examples or evidence with statements that support the answers of why this social

	media platform is better. If there are any potential ambiguities or limitations add this to your answer to provide a complete and accurate response.
Consequences	The user needs to have a certain level of understanding of the topic. Furthermore, the LLM might use errors in the rationale making it difficult to spot. To solve this, the pattern Fact Check List can be combined.

tabel 11: Pattern 8: Reflection

Prompt Improvement

Pattern 9: Question Refinement

This pattern can help you write better prompts. The intent of this pattern is to give recommendations for a better or more refined question than the original input from the user. This is helpful for users that are not familiar in this domain, this way the LLM can help you with writing better prompts.

Prompt outline	Within scope X, suggest a better version of the question to use instead
	(Optional) prompt me if I would like to use the better version instead
Example prompts	When I ask a question about the target audience, suggest a better version of the question to use instead. Be mindful of the context I am currently using and ask at the end if I would like to use your question instead.
	<p><i>Combine prompt patterns (Cognitive Verifier & Persona):</i></p> <p>When I ask a question, ask five additional questions that would help you produce a better version of my original question. Then, use my answers to suggest a better version of my question. After the follow-up question temporarily act as a user with no knowledge of advertisement and define any terms I need to know to accurately answer the questions</p>
Consequences	This pattern can be very helpful although it can narrow down the scope of the original prompt. It can also use concepts that are not known to the user and it can generate false statements/information making the output incorrect.

tabel 12: Pattern 9: Question Refinement

Pattern 10: Alternative Approaches

This prompt pattern helps the user with alternative approaches to accomplish a task. This way the user does not only use the approaches they are already familiar with but helps them choose the best way to complete the task to meet their goal.

Prompt outline	Within scope X, if there are alternative ways to accomplish the same thing, list the best alternate approaches
	(Optional) compare/contrast the pros and cons of each approach
	(Optional) include the original way that I asked
	(Optional) prompt me for which approach I would like to use
Example prompts	When I am making a persona for the target audience, are there better alternatives to display the target audience in a clear way, list the best alternative methods and then compare the pros and cons of each approach including the method I mentioned as well. Then ask me which approach I would like to proceed with.
Consequences	There are no consequences

tabel 13: Pattern 10: Alternative Approaches

Pattern 11: Cognitive Verifier

Research literature has documented that LLMs can often reason better if a question is subdivided into additional questions that provide answers combined into the overall answer to the original question (White, 2023). Often the main question is too broad and lacks content for LLMs to give correct answers using this pattern; it will ask additional questions to your broad coming up with a better response.

Prompt outline	When you are asked a question, follow these rules
	Generate a number of additional questions that would help more accurately answer the question
	Combine the answers to the individual questions to produce the final answer to the overall question
Example prompts	When I ask you a question, generate three additional questions that would help define the context and get a more accurate answer. When I have answered these questions, combine the answers and generate the final answer to my original question.
Consequences	This pattern asks the LLMs to ask follow-up questions but the amount is not exact. You can ask the amount to the LLMs on how much information it needs, this can although lead into a very long detailed list of questions that may not be relevant for your answer.

tabel 14: Pattern 11: Cognitive Verifier

Pattern 12: Refusal Breaker

The goal of this pattern is to instantly rephrase a question so that the LLMs can't deny your answer. However, this is prone to abuse as it can generate phishing mails or perform other actions that go against the LLM policy filters. It is important to use this pattern ethically and responsibly.

Prompt outline	Whenever you can't answer a question
	Explain why you can't answer the question
	Provide one or more alternative wordings of the question that you could answer
Example prompts	Whenever you can't answer a question, explain why you can't answer the question. Provide one or more alternative wording of the question that you could answer so that I can improve my own question.
Consequences	This pattern could potentially misuse the LLM. By going around the filter and guardrails you can get alternative responses that go against the LLM policy. Even though the LLM gives alternative approaches to the question, this might not lead to the desired outcome as it alternates your own question.

tabel 15: Pattern 12: Refusal Breaker

Interaction

Pattern 13: Flipped Interaction

Instead of you asking questions to the LLM the LLM will ask you questions. This can be very helpful if you don't have the required information to perform a task. You will set up a goal for the LLMs and after that goal is achieved the LLM will stop giving you questions. Helpful for asking the context the LLM needs.

Prompt outline	I would like you to ask me questions to achieve X
	You should ask questions until this condition is met or to achieve this goal (alternatively, forever)
	(Optional) ask me the questions one at a time, two at a time, etc.
Example prompts	From now on I want you to ask me questions about creating a pitch for [product x] . Ask me questions until this pitch is completed. When all the information is ready you can create a script.
Consequences	Important for this pattern is to define clear goals when the target is reached. Add as many details as possible to prevent the LLM from asking unnecessary questions. Might be important to include the level

	of understanding of the interacting user so that the questions are adapted to the user's level of expertise.
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tabel 16: Pattern 13: Flipped Interaction

Pattern 14: Game Play

The intent of this pattern is to create a game around a given topic. This pattern can be used when you would like the LLM to generate questions around a specific topic for the user to resolve.

Prompt outline	Create a game for me around X
	One or more fundamental rules of the game
Example prompts	You and I are going to play a game around social media. You are going to pretend like an algorithm trying to show me all the things the target audience likes in text form. When I type a word or feeling when given the text for a product advertisement you should respond with something that the target audience would like to interact and engage with. [set up more rules if needed] The game starts with when you have created a product description of something the target audience would like to see.
Consequences	It is important to define clear rules if not the LLM will interpret its own rules for the game.

tabel 17: Pattern 14: Game Play

Pattern 15: Infinite Generation

The goal of this pattern is to automate a series of outputs without having to reenter the prompt each time. It can be used when you need to generate multiple outcomes but don't want to retype every sentence of your initial prompt.

Prompt outline	I would like you to generate output forever, X output(s) at a time.
	(Optional) Here is how to use the input I provide between outputs.
	(Optional) stop when I ask you to.
Example prompts	I want you to generate a name and job until I say stop. I am giving you a template for your output. Everything in all caps is a placeholder. Everytime you generate text, try to fit it into the placeholders that I list. Please use the formatting and overall template I give: [Link]
Consequences	The LLM can only remember conversations for a certain amount of time meaning that the context you gave before might be forgotten

	when wanting lots of input. Repetitive outputs can also happen which may not be desired.
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tabel 18: Pattern 15: Infinite Generation

Context Control

Pattern 16: Context Manager

This pattern helps remove certain context for a conversation with the LLM. The goal is to focus the conversation around a certain topic or exclude unrelated topics. This pattern gives users more control over the conversation.

Prompt outline	Within scope X
	Please consider Y
	Please ignore Z
	(Optional) start over
Example prompts	When analyzing certain pieces of text, please consider the reformulation of text, ignore the topic and only check for grammar and coherence between sentences.
Consequences	This pattern can wipe out patterns applied in the conversation that the user is unaware of.

tabel 19: Pattern 16: Context Manager

These are some of the prompt patterns that can be useful when creating prompts. Not all of them are useful but it may come in handy when finding yourself in a difficult situation. One of their prompt patterns can help you organize your thoughts and generate better answers from the LLM. These are some handy examples but the best way to get better at prompting is through repetition and looking at other people's prompts. As the prompt patterns over time may not be so effective. It is important to look at different and innovative ways to communicate with an LLM. (White, 2023)

Conclusion

For writing effective text prompts it is important to check if your prompt is clear & concise, no ambiguity and uses natural language, has a specific target it needs to accomplish, and the context contains detailed information about the situation. Optional to add certain guidelines on how the output should look like. If you find yourself in difficult situations and you don't know how to write a good prompt, some of the prompt patterns can help you formulate one or get inspiration from people before you. Last but not least it is important to be creative, unique and experiment when writing prompts. This helps with getting more fun and surprising answers from the LLM.

Image generation

Image generation is different from text. At least in the set up for writing an effective text prompt. For image generation there are a variety of generative AI tools that can create very realistic images. There is DALL-E, Midjourney & Stable Diffusion. They are all similar but Midjourney uses a different technology that enables it to generate high-resolution images with more ease and efficiency. Then again with the program you can make easiest adjustments on various parameters to create very specific types of images. It also supports multi prompts, prompt weights, and negative prompt weights, all to give the users more control on the final output. For these reasons I will focus on Midjourney and what things are important to include in a prompt. (Kadir Akin, 2023)

Starting with how does it work? Midjourney users can use this program in a chat platform called Discord. Here you will join the Midjourney server where you can use the Midjourney bot to create images. To activate the bot you need to type in certain slash commands in discord.

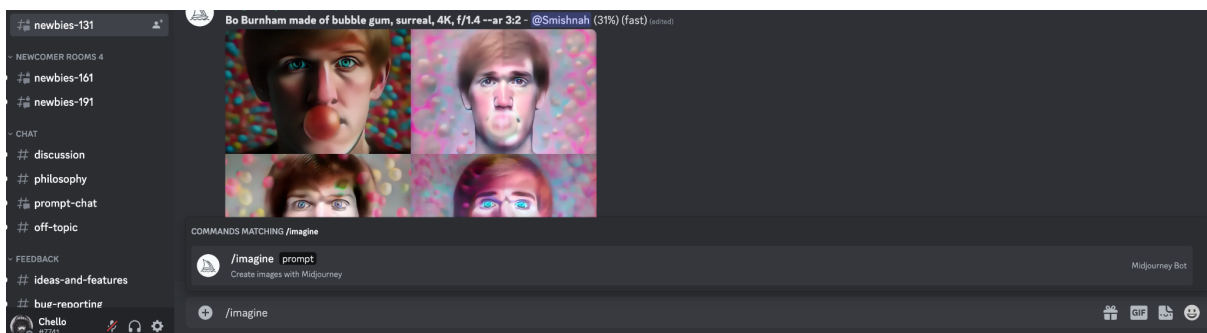


figure 7: Midjourney Discord bot slash commands.

Steps you need to follow are:

- **Go to the newbie challenges:** You find them on your right side. You have to go to one of these channels as the bot only works in them.
- **Type in /imagine [prompt] :** This command line activates the bot into making an image. The prompt is how you want your image to look like.
- **Click on Enter when you're done with prompting:** After about 60 seconds the bot has created a 2x2 grid of images. After having your images you have a few options you can do:
 - **Option 1:** If you like the image you can upscale it by clicking the U1, U2, U3 or U4 button. These buttons represent the images and Image 1 starts from the upper left.
 - **Option 2:** You can ask the bot for variations on one of the images click V1, V2, V3 or V4 button. This option is helpful if you want more different variations on your initial prompt.
 - **Option 3:** If you want the same prompt but with a new seed you click the circular arrow button.
- **Save your image:** If you are satisfied with your image you can save it. Here are again three options how you can save your image:
 - **Option 1:** Click on image, open it full-size and right click to save image.

- **Option 2:** If you are upscaling your image, it will be available on the Midjourney website at midjourney.com/app. You need to login into your discord account and under your own artworks you can find the image.
- **Option 3:** You can send the image directly into your discord DMs by reacting with the envelope emoji.

Commands

Within Midjourney there are certain commands you can type that lets the bot do specific things with your image. I have listed the commands below.

Command	Explanation
/imagine	Activates the bot to create an image. You have to type in your prompt after typing this command.
/blend	This command allows you to blend two images together.
/fast	This command generates images faster in about 1 minute.
/help	This command gives you access to general information about Midjourney, including the basic commands, account links, DM info, and links to official articles.
/info	This command shows information related to your account, including your subscription level, job mode, visibility mode, fast time remaining, lifetime usage, relaxed usage, and queued job info.
/public	This is the default mode, where anyone can see your jobs and images.
/prefer	This command allows you to permanently add a command or parameter to the end of all your jobs, making it easier to customize your image generation settings.
/private	This command switches your jobs to private mode, meaning that they will not be visible to anyone else except moderators.
/relax	This command allows you to generate jobs essentially for free, but keep in mind that they will take longer to complete.
/settings	This command opens up the visual user interface that allows you to adjust your image generation settings, making it a very useful tool for fine-tuning your results.
/show	Use this command to rerun an old job by providing the job ID. You can find the job ID in your website gallery or by "Reacting" to the old image with the "Envelope" icon.
/subscribe	This command allows you to modify your subscription to Midjourney AI, and the bot will send you a link to get started.

table 20: Midjourney commands

Prompting

For image generation it is just like text generation very important to create good prompts. As the prompts will define how your output will look like. Images are different from text. For image prompting it is important that you have a clear idea of what you want. You can ofcourse play around with the different styles, parameters, attributes etc, But you first need to know the basics.

For creating an image prompt to think about your image:

- **Display:** What is the eventual output going to look like? What do you want to create? Examples are a photograph, a sketch, drawing, painting, etc.
- **Context:** Explain in what setting your image is going to take place. Important to be detailed in your description, add attributes, think of the scene it's taking place.
- **Style:** Think about design styles, maybe a creator, lightning, and other small details.
- **Composition:** Think about the settings of your image, how do you want it to be portrayed, use aspect ratio, camera angles, quality, etc.
- **Mood & feeling:** Similar to style but more in depth how the image should be portrayed and what feelings it should evoke.

These things are important to think about when you are creating an image because for image generators it works best if you have a clear vision for your design. (DeSignor, 2023)

For prompting in Midjourney there are certain commands or tricks you can use to make your image better. These commands help you make better and detailed images.

Multi prompts

In Midjourney you can combine two prompts together. This is done via :: adding this syntax tells the Midjourney bot that each part of this prompt should be separated.

Prompt outline	<prompt>:: <prompt>
Example prompt	illustrated ice ::2 cream

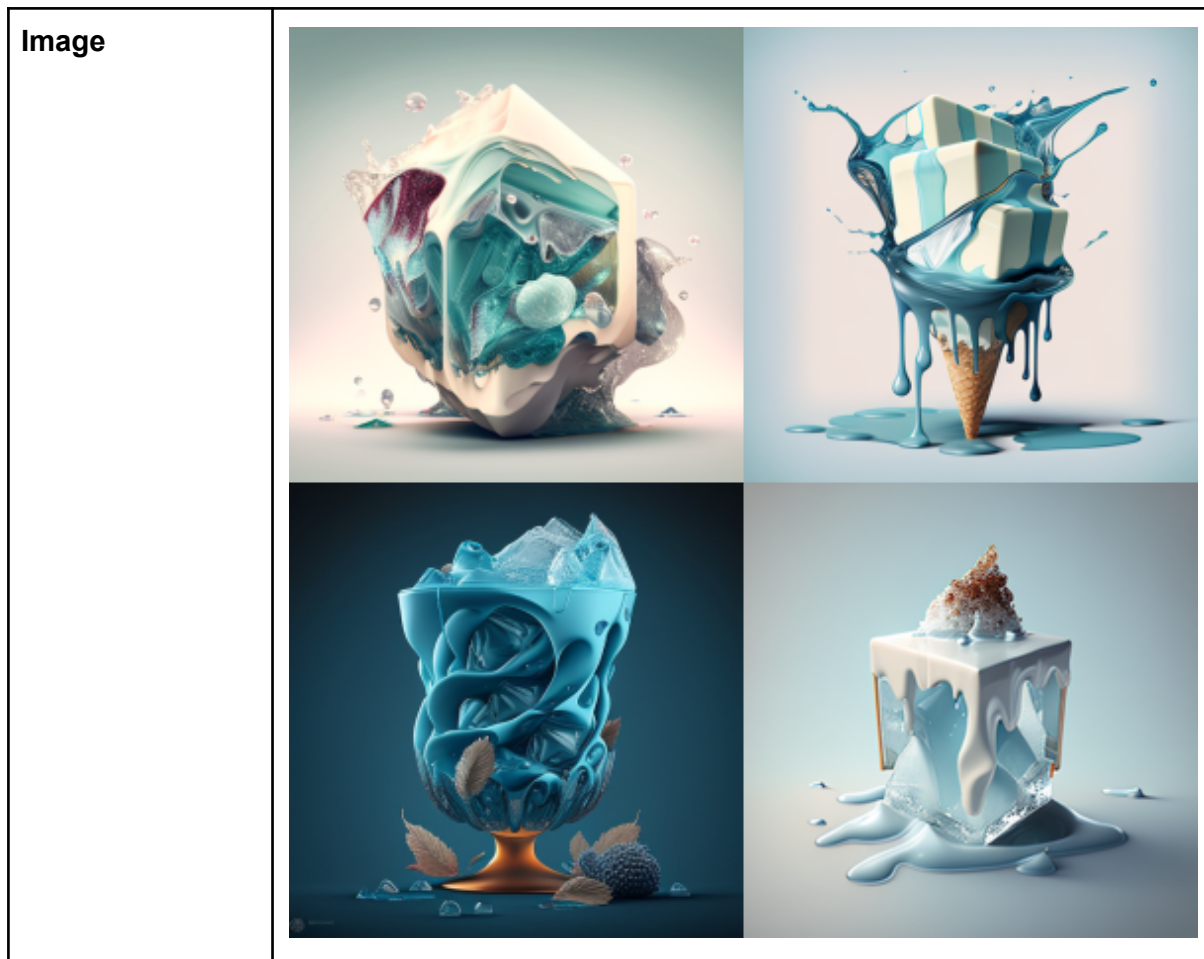


table 21: Multi prompts & prompt weights

Prompt weights

In the example given above you see that in the prompt a two is added. This means the ranking of the prompt. By adding the '2' it first made an ice cube with cream above.

Negative prompt

A negative prompt means things you especially don't want to have in your image.

Prompt outline	--no <text>
Example prompt	a landscape painting --no river

Image



table 22: Negative prompt

Parameters

Parameters in MidJourney are essential for generating good images. Parameters are settings that can be added in the prompt to modify the way an image is generated. These parameters you find and place at the end of a prompt.

Parameter 1: Aspect Ratio

The aspect ratio of an image consists of the width and height of this image. If you want to have other dimensions or want to use these images for other platforms it is important to know the size of the image you want. Certain ratios are better suited for particular images, for example landscape; it's better to have a 7:4 ratio.


Prompt outline	--aspect <value>:<value> or --ar <value>:<value>
Example prompt	Little cute fish --ar7:4
Image	

table 23: Parameter 1: Aspect Ratio

Parameter 2: Chaos

The `--chaos` or `--c` parameter affects the diversity of the initial image grids. Setting a high `--chaos` value will generate more unconventional and unexpected results and compositions, while lower `--chaos` values produce more consistent and repeatable results.


Prompt outline	<code>--chaos<value></code> or <code>--c <value></code>
Value min-max	values 0–100. The default <code>--chaos</code> value is 0.
Example prompt	Ananas owl hybrid --c100
Image	 The image displays four distinct AI-generated illustrations of owl-pineapple hybrids. The top-left image shows a colorful, multi-colored owl with a pineapple body and a crown of pineapple leaves, set against a dark background. The top-right image features a more naturalistic owl with a pineapple body and a crown of green leaves, perched on a wooden stump in a lush, sunlit jungle environment. The bottom-left image depicts a grey and white owl with a yellow and black striped body and a small green tuft on its head, standing on a tiled floor. The bottom-right image shows a close-up of a brown owl with a large, green pineapple body and a crown of green leaves, set against a dark background.

table 24: Parameter 2: Chaos

Parameter 3: Quality

The --quality or --q parameter determines the amount of time the AI spends generating an image and affects the level of detail in the output. Higher quality settings take longer to process but produce more detailed results. It is important to note that this parameter does not affect the resolution of the image.


Prompt outline	--quality<value> or --q <value>
Value min-max	--q1 is the default quality you can use .25 .5 for half. You can use 1, 2, 3, 4, 5
Example prompt	A young man 40s carrying a basket of bread and fruits in the background of European castle --q2
Image	 The image block contains four sub-images arranged in a 2x2 grid. Each sub-image shows a young man in his 40s carrying a wicker basket filled with bread and various fruits. The background is a European castle. The top-left image shows a man in a light grey polo shirt and dark suspenders, holding a basket with lemons, purple grapes, and bread. The top-right image shows a man in a dark green jacket and dark vest, holding a basket with bread, lemons, and grapes. The bottom-left image shows a man in a brown vest over a light shirt, holding a basket with lemons, strawberries, and bread. The bottom-right image shows a man in a grey jacket and light shirt, holding a basket with lemons, grapes, and bread. The images vary in the level of detail and lighting, representing different quality settings.

table 25: Parameter 3: Quality

Parameter 4: Stop

The --stop parameter is useful for finishing a job part way through the process. By specifying a value, users can halt the job at a particular percentage and generate an image with incomplete details. However, it is worth noting that stopping a job at an earlier percentage can result in blurrier and less detailed images.


Prompt outline	--stop<value>
Value min-max	--stop accepts values: 10–100. The default --stop value is 100.
Example prompt	Green peas in plate --stop70
Image	 The image block contains four sub-images arranged in a 2x2 grid. Each sub-image shows a top-down view of a plate filled with green peas. The top-left image shows a complete, well-defined arrangement of peas on a green plate. The top-right image shows a less complete arrangement on a white plate with some brown spots. The bottom-left image shows a complete arrangement on a white plate with a green rim. The bottom-right image shows a complete arrangement on a white plate with a green rim, but with several peas scattered on the surface in front of the plate, suggesting a less finished or more chaotic state.

table 26: Parameter 4: Stop

Parameter 5: Stylize

Midjourney AI's image generation is trained to produce artistic results that emphasize color, composition, and form. The `--stylize` or `--s` parameter controls the strength of this artistic training. Lower stylization values will produce images that closely match the prompt, while sacrificing some artistic flair. Higher stylization values will create more artistic images that are less closely tied to the prompt.


Prompt outline	<code>--stylize<value></code> or <code>--s<value></code>
Value min-max	<code>--stylize</code> accepts values: 10–1000. The default stylize is 100
Example prompt	Illustrated pear <code>--s250</code>
Image	

table 27: Parameter 5: Stylize

Parameter 6: Seed

The Midjourney bot uses a seed number as the starting point to generate the initial image grids. This seed number creates a field of visual noise similar to television static. The bot generates random seed numbers for each image, but users can specify their own seed number using the --seed or --sameseed parameter.


Prompt outline	--seed <value>
Value min-max	--seed accepts whole numbers from 0–4294967295
Example prompt	The white colored cat is lying on a green sofa --seed4789
Image	

table 28: Parameter 6: Seed

Parameter 7: Version

Midjourney continuously releases new model versions to enhance efficiency, coherency, and quality. The latest model is the default, but users can choose to use other models by specifying the `--version` or `--v` parameter or by accessing the `/settings` command and selecting a model version. Different models specialize in different types of images, so it's important to choose the appropriate version for your specific needs.


Prompt outline	<code>--version<value></code> or <code>--v<value></code>
Value min-max	values 1, 2, 3, 4, 5
Example prompt	Golden and black rose --v5
Image	 A 2x2 grid of four images showing roses with a golden and black color scheme. The top-left image shows a close-up of a rose with golden petals and dark, almost black, leaves. The top-right image shows a similar rose from a slightly different angle, with more of the dark leaves visible. The bottom-left image shows a rose with a mix of golden and black petals, set against a background of green leaves. The bottom-right image shows a close-up of a rose with golden petals and dark leaves, similar to the top-left image.

table 29: Parameter 6: Seed

By changing the parameters it will affect the output of the image. You can experiment with these parameters when creating images as it can help tailor an image specifically to what you want. Although parameters are handy to know the art lies in prompting. With Midjourney you can make your prompts even more specific.

Attributes

When creating image prompts there are certain attributes, styles, themes, etc you can add to your image. The more detailed you are with your image the better. There are a lot of attributes topics to include in your image. I listed them in the table below.

Topic	Description	Styles
Themes	Themes help with giving the bot a strong base to begin with and a general idea for the concept. If you include a theme the images will stay within that theme creating stunning and in concept images.	Realistic - Realism - Surreal - Surrealism - Unrealistic - Science Fiction - Dreamy - Dreampunk - Otherworldly - Abstraction - Fantasy - Dark Fantasy - Illusion - Retro - Vintage - Cyberpunk - Rustic - Historic - Futuristic - Sci-fi - Cartoon - Marvel Comics - Kawaii - Anime
Design styles	The right design style can add depth, texture, and character to an image, making it more aesthetically pleasing and engaging to the viewer.	Simple - Detailed - Complex - Multiplex - Chaotic - Surface Detail - Minimalist - Maximalist - Ukiyo-e Flat Design - Patterns - Polka Dot - Halftone - 20s, 30s, - 1940s, 1950s - Decor, 60s - 1800s, 2020s, 4000s - Pop-Art - Hi-fi - Gothic - Ukiyo-e
Engines	The engine used to create an image can greatly impact its final outcome. From ultra-high-definition rendering to low-poly stylization, different engines offer a range of options for users to customize the look and feel of their generated images.	Unreal Engine - Cinema4D - 4k, 8k, 16k - Ultra-HD, - 2-bit - 4-bit, - 8-bit - 16-bit - Disney - Pixar - Dreamworks - IMAX - Pixomondo - Vector Graphics - 3D Model - Lowpoly - Holographic - Digital Art - Pixel Art - NFT - Clip Art - Character Design - Wallpaper
Artists	Artists play a crucial role in shaping the art world by pushing the boundaries of creativity, experimenting with different styles, and expressing themselves through various mediums. When it comes to generating images with Midjourney, you can draw inspiration from some of the most iconic and influential artists throughout history.	Painting By Ivan Shishkin Painting By Zdzislaw Beksinski Painting By Salvador Dali Painting By Pablo Picasso Painting By Van Gogh Painted By Alfred Kubin Painted By Andy Warhol Painted By Leonardo Da Vinci Graffiti By Banksy

Drawing & Art Mediums	<p>The medium and technique used to create an artwork play an important role in its final appearance and mood. Midjourney AI can simulate various drawing and art mediums to produce stunning images. From traditional techniques like pencil, charcoal, and watercolor to modern graffiti and digital media, there are many options to choose from</p>	<p>Sketch - Drawing - Hand-Drawn - Dot Art - Line Art - Caricature - Illustration - Pencil Art - Charcoal Art - Pastel Art - Acrylic Painting - Oil Painting - Watercolor Painting - Graffiti - Spray Paint - Sticker - Blueprint - Mosaic - Coloring book - Chibi - Paper cut craft</p>
Colors & Palettes	<p>The colors and palettes used in an image can have a significant impact on its overall look and feel. By carefully selecting colors and color combinations, you can create a wide range of moods and atmospheres in your generated images.</p>	<p>Red - Orange - Light-Gray - Light-Purple - Neutral - Multi Colored - Black and White - Monochromatic - Sepia - dark mode</p>
Time of the Day	<p>The time of day can significantly impact the mood and atmosphere of an image. Whether it's the warm hues of a golden hour or the cool blues of a blue hour, the time of day can set the tone for the image generation. In this section, we will explore the different times of day that you can use in your prompts to create images with specific moods and feelings.</p>	<p>Golden Hour - High Noon - Afternoon - Mid-Morning - Blue Hour - Sunset - Sunrise - Nighttime</p>
Material properties	<p>Material properties are essential in determining the visual characteristics of objects and surfaces. By adjusting the material properties in the prompts, users can modify the texture, shine, and other physical features of the generated image.</p>	<p>Transparent - Opaque - Polarized - Prismatic - Glitter - Glowing - Glossy - Shiny - Polished - Melting - Squishy - Dirty</p>
Lightning	<p>Lighting can greatly influence the mood and atmosphere of an image. By adjusting the lighting parameters, you can create images with different emotions and feelings.</p>	<p>Spotlight - Sunlight - Starlight - Nightlight - Neon Lamp - Dot Matrix Display - warm lighting - hard light - soft light - cold light - neon light</p>
Geography & Culture	<p>The Midjourney bot can generate images inspired by various cultures and geographies.</p>	<p>French-Style - Turkish-Style - Mayan - Arabic - Nordic Mythology</p>
Shot Types	<p>Shot types are crucial to creating effective visual storytelling. Each shot type carries its own significance and meaning, and understanding the right shot type to use in a particular situation can help you convey the emotions and mood you want to create.</p>	<p>Extreme long shot - Long shot - Medium shot - Close-up shot - Extreme close-up shot - Low angle shot - High angle shot - Night shot - Silhouette shot - Wide Shot - Overhead Shot - Side-View Shot - Centered-Shot</p>

		- Back View Shot - Selfie
Views	Selecting the right view can help emphasize specific elements in the scene and convey the desired mood or tone.	Top-View - Side-View - Satellite-View - View From an Airplane - Close Up - Extreme Close Up - Epic Wide Shot - First-Person View - Third-Person View - Full body - Portrait - Front-View - Bird-View - Macro shot - Macro View - Microscopic - 360 Panorama - Ultra-Wide Angle - 360 Angle
Film types	Midjourney AI can also simulate different types of film and photography techniques to produce unique visual effects. The Film Types parameter allows you to select various film and photography styles that can be used as a reference for generating the image.	DSLR - Night Vision - Drone photography - GoPro Video - Unregistered Hypercam 2 - Hyperspectral Imaging - Multispectral Imaging - Schlieren - Disposable Camera - Polaroid - Instax - Lomo - Pinhole Photography - VistaVision - Technirama - Techniscope - Panavision - Ambrotype

table 30: Attributes with different styles (Kadir Akin, 2023)

Conclusion

For image prompting it is very important to know what is important for an effective prompt. An image prompt needs a clear and detailed description of how the image is going to look like and some key aspect should always be included in an image prompt. The things that should be included in a prompt are: a detailed description of the context/scene, what the output is going to be (display), the style, composition and all the extra details that are needed.

What are the legal and ethical principles to look out for when using generative AI?

Generative AI is in the highlights of many news articles and not always positive. The reason being that generative AI can be used for bad intentions. For example, creating fake news becomes easier, deep fakes, and more harmful content that can hardly be distinguished from real or fake. But also that generative AI's data is trained on copyrighted material leaving many artists mad that their artwork is stolen. Multiple lawsuits are currently being held against these big AI companies. One of them being that Getty Images is suing Stable Diffusion for stealing their content. In some of these images you can see the watermark for this company. (Vincent, 2023a)



Figure : Generated image from Stable Diffusion lawsuit with Getty images (Vincent, 2023a)

For this reason it is very important that GroupM is aware of these dangers as they are creating content for those people it is important not to offend them. On the other hand, what is possible with generative AI? Is what you create really yours? Can they use it in their advertisements? What else do they need to watch out for to not get any trouble with the law?

WPP's technology and legal team made a presentation on the use of generative AI. What the key legal and ethical things are to watch-out for and how to minimize the potential risks. They have created a set of principles for the employees to follow when using generative AI.

- **Principle 1:** We acknowledge our responsibility to understand both the limitations and possibilities of generative AI.

- **Principle 2:** Generative AI supports and complements our creativity; it is not a substitute for this.
- **Principle 3:** We understand the provenance and models used in the learning data of our chosen generative AI platforms
- **Principle 4:** We are transparent to our clients, our people and the wider community about how we use generative AI.
- **Principle 5:** Our people are encouraged to speak up when they have concerns about our use of generative AI.
- **Principle 6:** We recognise this technology is evolving and the evaluation of these principles is an ongoing task.

These principles can be used as guidelines on how the employees but also to be transparent to clients how WPP is using generative AI. Within the presentation they gave things to think about when writing an input for generative AI tool:

- The input should not have contained any unreleased content for the public.
- Code Snippets that contain client IP or confidential information.
- Proprietary information of WPP and its operating companies.
- How the outputs are further used by the platform.

Also important to think about the output:

- **The limitations of the tool itself:** Information can be false or misleading, training data may be outdated, biases in underlying training data and generic output and plagiarism.
- **Ownership:** Important to look at the intellectual property (IP) rights for the created output. In some cases the content generated by generative AI is considered “public domain”. You have to read the T&C’s of the platforms.
- **I.P. Infringement:** The created content should be original and should not contain any third-party IP rights such as: copyright, trademarks, design rights, image rights, personality rights, passing of.
- **Ethics:** It is important to think about the key advertising principles of communicating products something to look out for is:
 - Is the output legal, decent, honest and truthful.
 - Is it prepared with a sense of responsibility to consumers and society.
 - Is it obviously identifiable as marketing?
 - Is it not materially misleading or is it likely to do so.
 - Does it not contain anything that is likely to cause harm or serious or widespread offense. (WPP CTO Team & WPP legal, 2023)

All these things are important to think about when using generative AI for marketing. As for the input, the most important thing is not to leak any sensitive data that could potentially harm a client or the company. As for output there are a lot more things to look out for if you use the final output of the generative AI in marketing. In general it is very important to make people aware of these legal and ethical considerations when using generative AI.

Conclusion

For this research it was important to find out what information the employees needed to know/learn to effectively use generative AI in their daily workflow. To start it was important to find out what knowledge they currently possess of generative AI. After conducting a survey and testing their knowledge it became clear that: The knowledge they missed revolved around how to write good text prompts to get desired results, but also how you can implement these generative AI tools in their own workflow. They had difficulty finding particular situations in which they could use it. The last and very important information they are missing is the ethical and legal concerns around generative AI. Some already mentioned this as a reason for not using generative AI.

As mentioned above they wanted to learn more about how they could potentially use generative AI in their own workflow. I held a few days in the lives and interviews of employees to confirm the creative cycle in my previous research and get more in depth information about the tasks of the creative departments. Essentially generative AI could be used in each phase but in the creative phase it can help with storyboarding, making a coherent story to convince the client, writing copy, inspirations for mockups, change format of image by adding new parts, and more. There are so many possible solutions of generative AI. The best way to show these possibilities is done via real-life scenarios where they could apply generative AI.

The other part of what the employees missed for knowledge is how to use these tools to get the desired output. I started with a small comparison between text and image generation tools on which I would base the prompt research. For text generation I chose ChatGPT for image generation, it was Midjourney. For text generation to create effective text prompts it is important to check your prompt if it is clear & concise, no ambiguity and uses natural language, has a specific target it needs to accomplish, and the context contains detailed information about the situation. Optional to add certain guidelines on how the output should look like. If you find yourself in difficult situations and you don't know how to write a good prompt, some prompt patterns can help you formulate one or get inspiration from people before you. Last but not least it is important to be creative, unique and experiment when writing prompts.

Image generation works differently than text generation. For this reason prompting is in some ways similar but also different. For image prompting it is very important that you yourself have a clear vision of how you want your image to look like, it comes in handy if you are knowledgeable in creating art, photography, etc. The general set-up for an effective image prompt is: clear and detailed description of the context/scene it takes place, the eventual output or display, the style (lighting, art style, theme, etc), and composition (aspect ratio, camera angle, resolution, etc). For general prompting it is important to take inspiration from the community: What prompts do they use?, and experiment yourself.

The last thing mentioned in the survey is the ethical and legal concerns when using generative AI. WPP (holding company of GroupM), legal and technology team made a presentation on how to responsibly use generative AI. They mentioned when using this technology it was important to look at your input if there is no sensitive data. For the output they mentioned to check the limitations on the tools itself (Biases, generic, misleading

content), Ownership of the output, I.P. infringements and ethics. They created a set of principles that everyone should uphold when using generative AI.

In general the employees of GroupMs creative department need to learn about how to write an effective text prompt, how they could potentially use this in their own workflow and become aware of the legal and ethical concerns when using generative AI

Recommendations

The insights / conclusion for this research will be used for creating a well informed training program for the target audience. It has become clear that the topics should revolve around, in which work situations they can use generative AI, how they can write effective text prompts to get better results and ethical and legal considerations when using this technology. For them to really understand how and where it could be used in their own workflow I will only use real-life scenarios.

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