

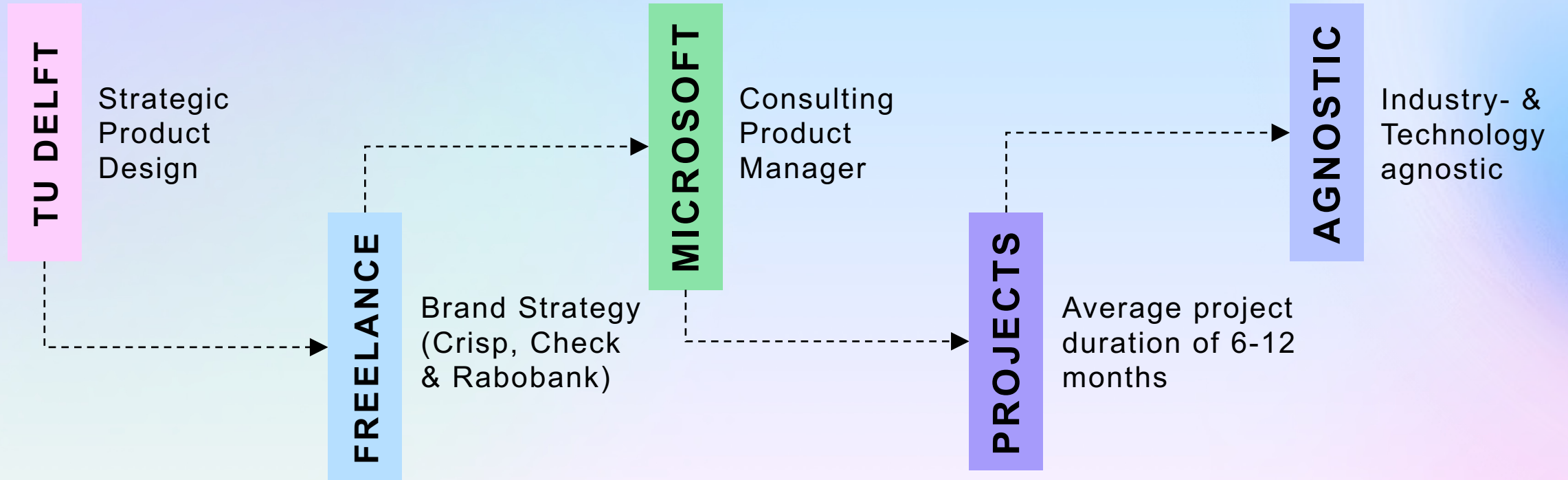
Overcoming Real-World Challenges to Design

AI PRODUCTS

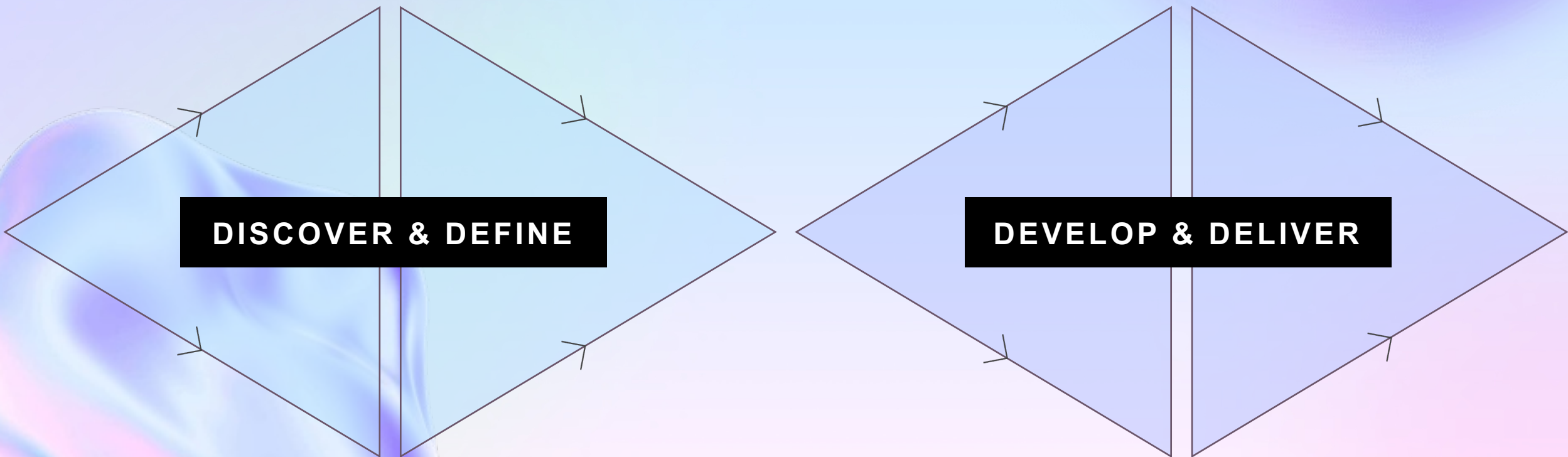
Josephine Scholtes

OVERCOMING REAL-WORLD
CHALLENGES TO DESIGN AI PRODUCTS

HI THERE!



WHAT CHANGES WHEN DESIGNING AI PRODUCTS?



DISCOVER & DEFINE

Challenges & How to Overcome them

CHALLENGES

LATENT NEEDS

It's hard to imagine for users what AI can help them with.

Focus more on uncovering **latent needs**

ROOT CAUSES

The hype around AI leads to the risk of pushing tech.

Understanding the context, problem & **root causes**

ALIGNMENT

Businesses tend to make assumptions about the desirability and feasibility of AI.

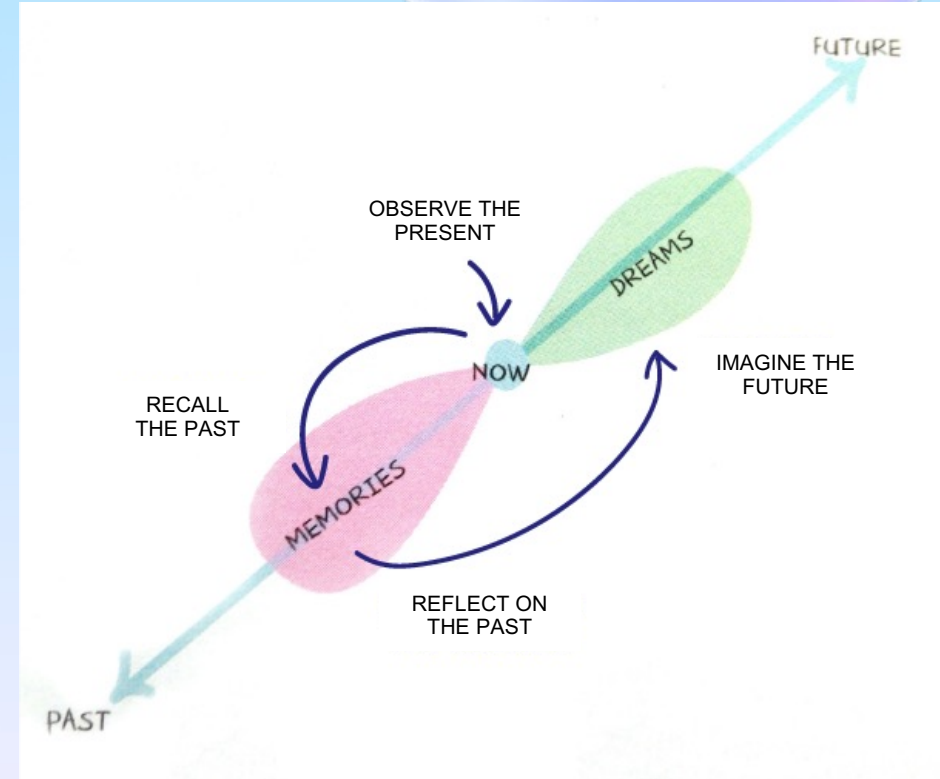
Play back the problem to **align** all business stakeholders.

DATA

Data availability, quality & maturity is a key factor for building AI models.

Assessing the **current-state** of the data

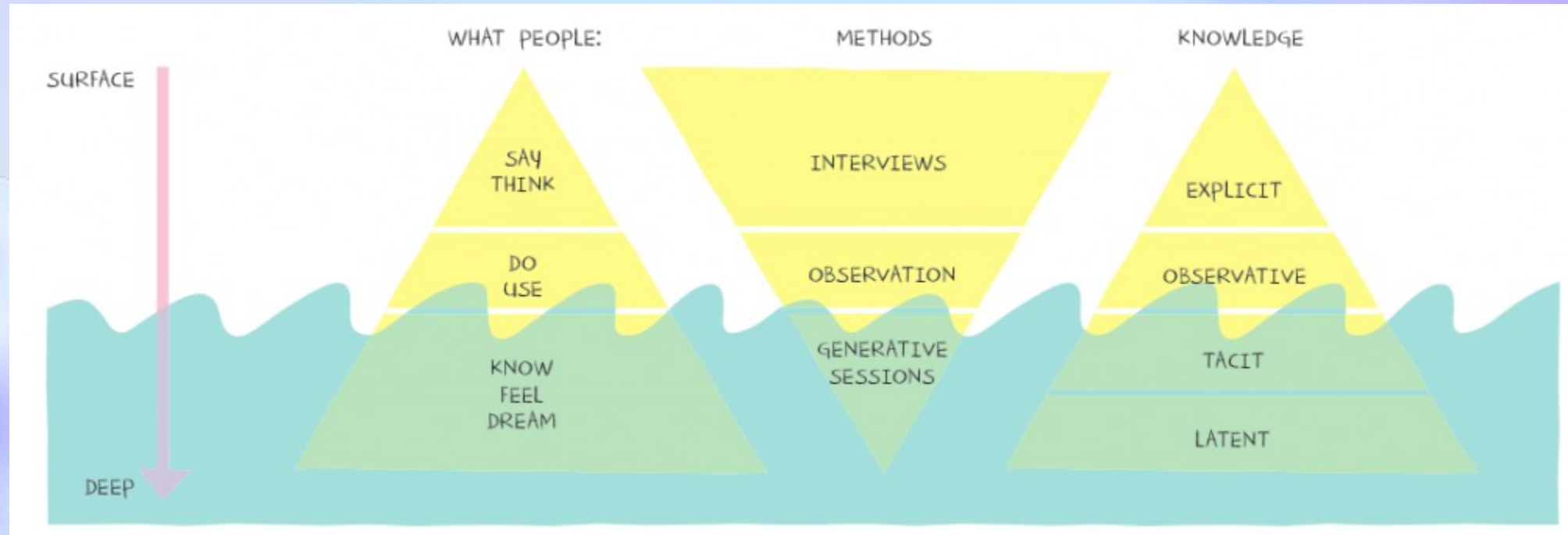
QUALITATIVE RESEARCH



PATH OF EXPRESSION

(SANDERS & STAPPERS, 2012)

LATENT NEEDS



(SANDERS & STAPPERS, 2012)

NEED-BASED PERSONAS



DERICK

End-to-End Guidance



HAILEY

Integration



SASHA

Stakeholder & Supplier
Collaboration



LUKE

Data Accuracy
& Transparency

PERSONA + EMPATHY MAP

DERICK

MY STORY

MY CHALLENGES

KEY NEED: End-to-End Guidance

MY ALTERNATIVES

HOW-MIGHT-WE STATEMENTS

DO, THINK, FEEL, SAY

©2024 Microsoft Corporation. All rights reserved.

CHALLENGES

LATENT NEEDS

It's hard to imagine for users what AI can help them with.

Focus more on uncovering **latent needs**

ROOT CAUSES

The hype around AI leads to the risk of pushing tech.

Understanding the context, problem & **root causes**

ALIGNMENT

Businesses tend to make assumptions about the desirability and feasibility of AI.

Play back the problem to **align** all business stakeholders.

DATA

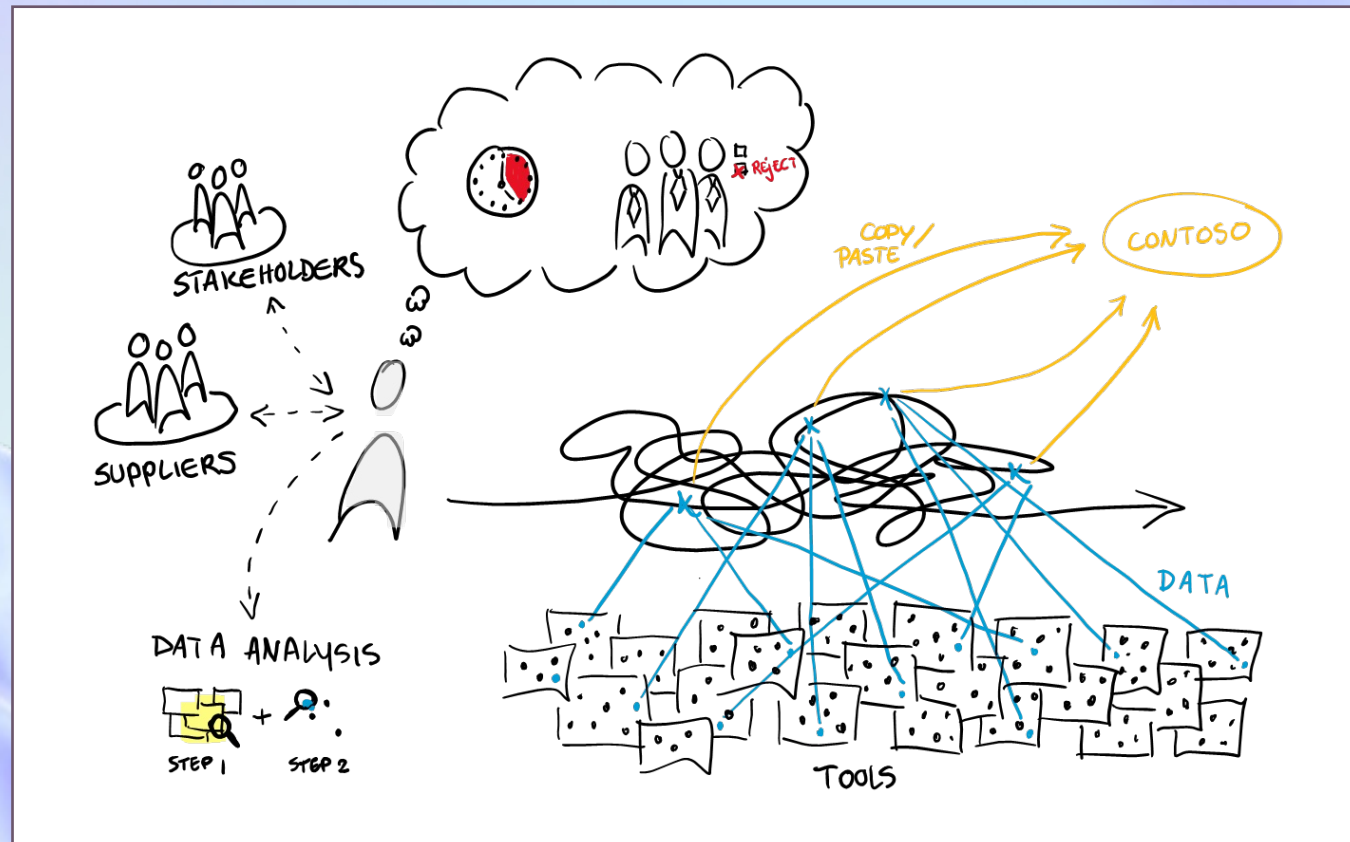
Data availability, quality & maturity is a key factor for building AI models.

Assessing the **current-state** of the data

Problem Definition | End User(s)

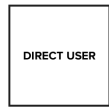
END USER(S) Who experiences a problem?	PROBLEM What is the root cause of the problem? What are the underlying issues?	CONTEXT When and where does the problem occur? What does the physical context look like?		
ALTERNATIVES What do they do today in an attempt to fix the problem?	SCHORTCOMINGS OF ALTERNATIVES What are the disadvantages of today's alternatives in an attempt to fix the problem?	IMPACT What is the quantifiable and/or emotional impact of this problem?		
I AM <input type="text" value="PERSONA"/>	I'M TRYING TO <input type="text" value="NEED"/>	BUT <input type="text" value="PROBLEM"/>	BECAUSE <input type="text" value="ROOT CAUSE"/>	WHICH LEADS TO <input type="text" value="QUANTIFIABLE/
EMOTIONAL IMPACT"/>

PROBLEM CONTEXT



Context Map

LEGEND



DIRECT USER



INDIRECT USER



EXTERNAL SYSTEM

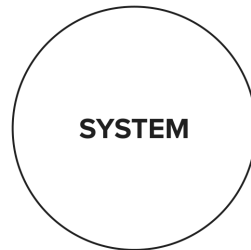
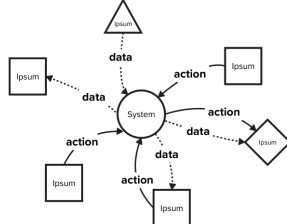


ACTION



DATA FLOW

EXAMPLE



CHALLENGES

LATENT NEEDS

It's hard to imagine for users what AI can help them with.

Focus more on uncovering **latent needs**

ROOT CAUSES

The hype around AI leads to the risk of pushing tech.

Understanding the context, problem & **root causes**

ALIGNMENT

Businesses tend to make assumptions about the desirability and feasibility of AI.

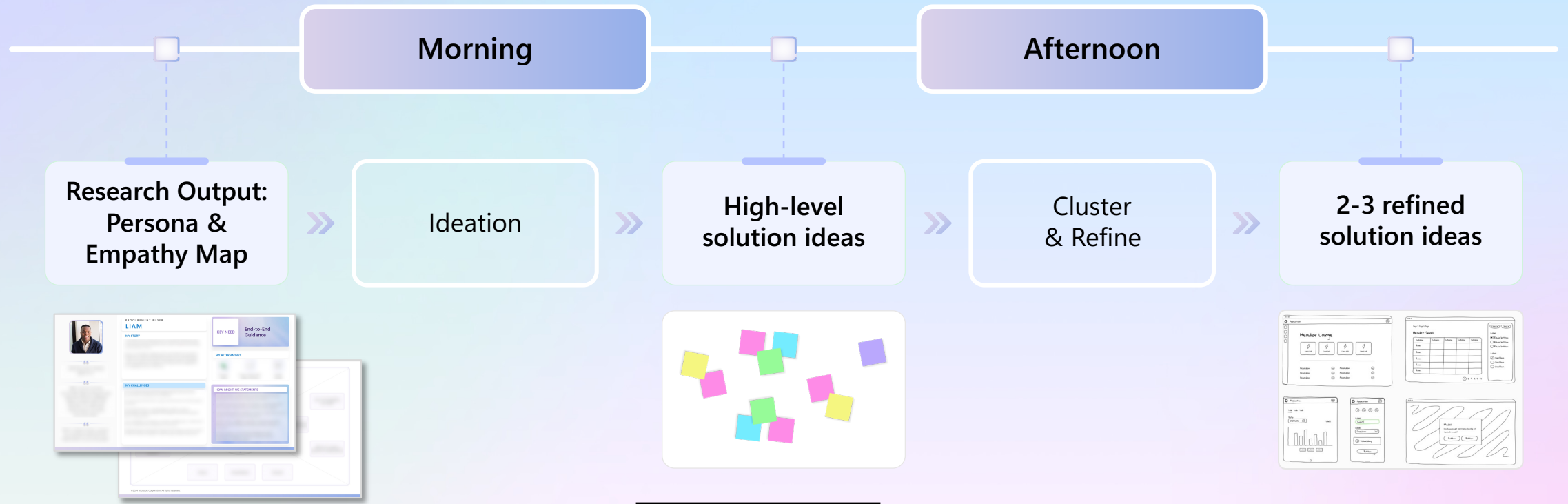
Play back the problem to **align** all business stakeholders.

DATA

Data availability, quality & maturity is a key factor for building AI models.

Assessing the **current-state** of the data

ENVISIONING WORKSHOP



CHALLENGES

LATENT NEEDS

It's hard to imagine for users what AI can help them with.

Focus more on uncovering **latent needs**

ROOT CAUSES

The hype around AI leads to the risk of pushing tech.

Understanding the context, problem & **root causes**

ALIGNMENT

Businesses tend to make assumptions about the desirability and feasibility of AI.

Play back the problem to **align** all business stakeholders.

DATA

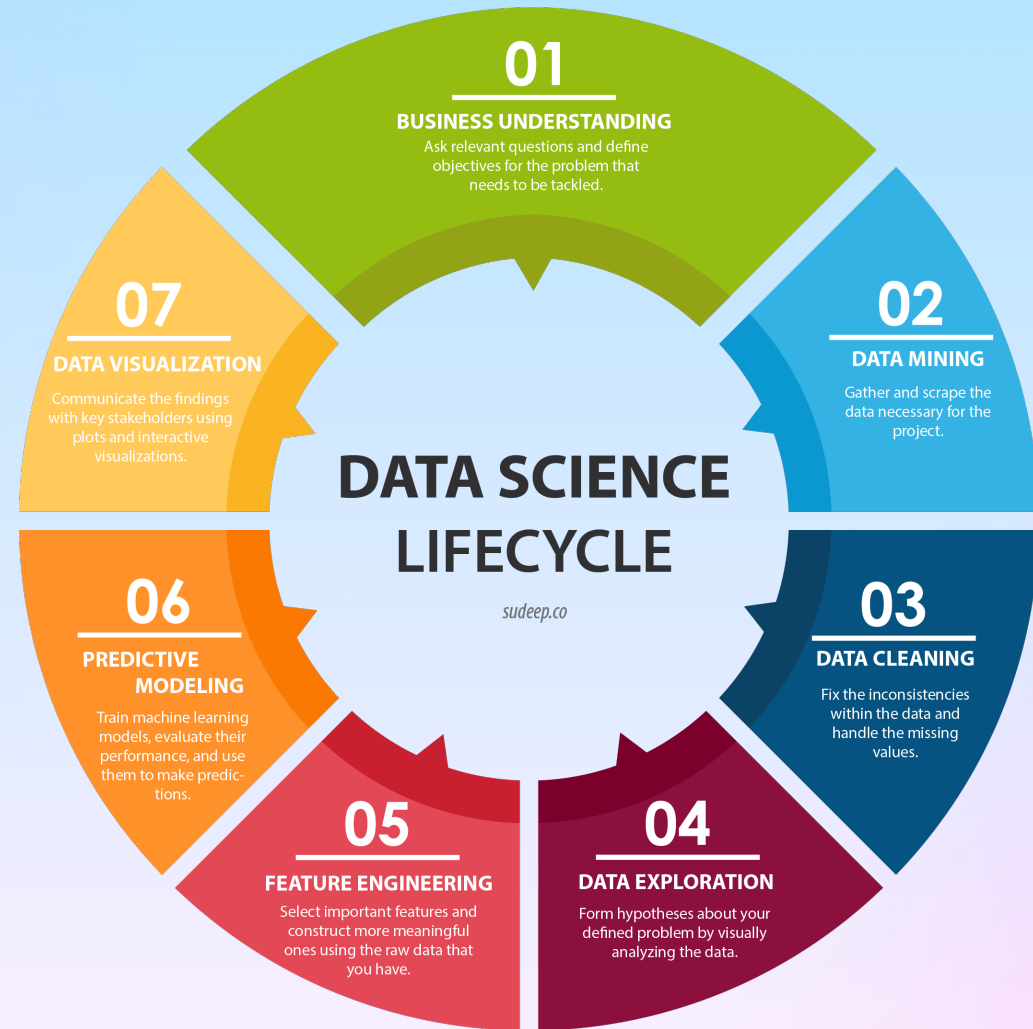
Data availability, quality & maturity is a key factor for building AI models.

Assessing the **current-state** of the data

DATA SCIENCE LIFECYCLE







A framework that guides the process of extracting meaningful insights and predictions from data to achieve business objectives.

Notice the similarities with design approaches, such as the Double Diamond?



DISCOVER & DEFINE

Data Assessment

 GOAL What is the system's goal?	 USERS Who will be using the system?	 INFORMATION RETRIEVAL What information should be retrieved and how?
 AVAILABLE DATA What data is available?	 MEASURE SUCCESS How do we measure if the system is behaving as expected, e.g. the level of satisfaction?	 SCALABILITY How will the system evolve over time? Will it need to be redesigned, extended, redeployed, retrained, reused?

DEVELOP & DELIVER

Challenges & How to overcome them

(RAI) DESIGN PATTERNS

Microsoft | HAX Toolkit Design Library Learn the tools About Share ideas

All Microsoft Search Cart Sign in

HAX Design Library

Interactive collection of the 18 Guidelines for Human-AI Interaction, with design patterns for applying them and examples.

Refine Results

Show me:

- Guidelines
- Design Patterns
- Examples

Select Guidelines

- G1: Make clear what the system can do.
- G2: Make clear how well the system can do what it can do.
- G3: Time services based on context.
- G4: Show contextually relevant information.
- G5: Match relevant social norms.
- G6: Mitigate social biases.
- G7: Support efficient invocation.
- G8: Support efficient dismissal.
- G9: Support efficient correction.
- G10: Scope services when in doubt.
- G11: Make clear why the system did what it did.
- G12: Remember recent interactions.

Guideline 1
Make clear what the system can do >
Help the user understand what the AI system is capable of doing.

Guideline 2
Make clear how well the system can do what it can do >
Help the user understand how often the AI system may make mistakes.

Guideline 3
Time services based on context >
Time when to act or interrupt based on the user's current task and environment.

Guideline 4
Show contextually relevant information >
Display information relevant to the user's current task and environment.

Guideline 5
Match relevant social norms >
Ensure the experience is delivered in a way that users would expect, given their social and cultural context.

Guideline 6
Mitigate social biases >
Ensure the AI system's language and behaviors do not reinforce undesirable and unfair stereotypes and biases.

MICROSOFT HAX DESIGN LIBRARY

Shape of AI Home About Contact

How will patterns and experiences evolve in a world shaped by Artificial Intelligence?

AI is **accelerating change**. Companies are reacting by "doing AI" without prioritizing the experience of the people on the receiving end—Design is more important than ever. To respond, we must get smart, fast. This starts with understanding the emerging patterns of interaction, affordances, and heuristics in an AI world. The pages below are summaries of the current state. Things are moving fast. [Get involved!](#)

[Learn more](#) [Subscribe to the newsletter](#)

AI Interaction patterns

Identifiers

Help users identify and distinguish AI features and content

Color scheme
Visual cues to help users identify AI features of

Iconography
Images that convey the form the AI takes in a

Name
How do we refer to the AI?

SHAPE OF AI – INTERACTION PATTERNS

DEVELOP & DELIVER

MORE BOTS

Describe your copilot to create it

Use everyday words to describe what your copilot should do ...

Name	Type	Modified by	Last published	Owner
Copilot for Microsoft 365	Copilot	Mona Kane 2 weeks ago	2 weeks ago	Mona Kane
Copilot for Sales	Copilot	Pedro Armijo 2 months ago	2 months ago	Mona Kane

Start with a template

- Approval Manager**: Streamline your approval process across multiple systems with summarized requests
- Job Craft**: Revolutionize your HR approach with AI-constructed job descriptions and refined interview questions
- Organization Navigator**: Assists employees in finding colleagues and their hierarchy within the organization with Microsoft Tea...
- Safe Travels**: Provides employees, the travel inquiries and health and s...
- Store Operations**: Revolutionize your HR approach with AI-constructed job descriptions and refined interview questions
- Sustainability Insights**: Enables users to easily get insights and data about a company's sustainability goals and progress
- Weather**: Your go-to assistant for getting weather forecasts across regions where your company operates
- Website Q&A**: A copilot that can answers com... users using the content on your...

Learning resources

- Quick start: Create and deploy a copilot
- Documentation
- Responsible AI FAQs
- Extend your copilots with plugins and extension
- Quick start: Use Generative AI in a copilot
- Support community
- Try Copilot Agents
- Security and governance in Copilot Studio

Employee Onboarding

Interactions > Increase in paid training exception

```
graph TD; A[New hire detected] --> B[Flow Triggered]; B --> C[Send email with onboarding questionnaire]; C --> D[Send recommended training]; D --> E[Exceptions approval]; E --> F[Submit PO for paid training]; F --> G[Flow Complete]
```

Thought process

- New hire detected: create recommendations for training modules
- Email sent: to new hire
- New hire response: Training preference
- Approval process: Initiated
- Approval: Confirmed
- PO created: Enrolled in training
- Confirmation sent: To new hire and hiring manager

Reasoning

- New hire hardware approved and delivered in 4 weeks.

Action details

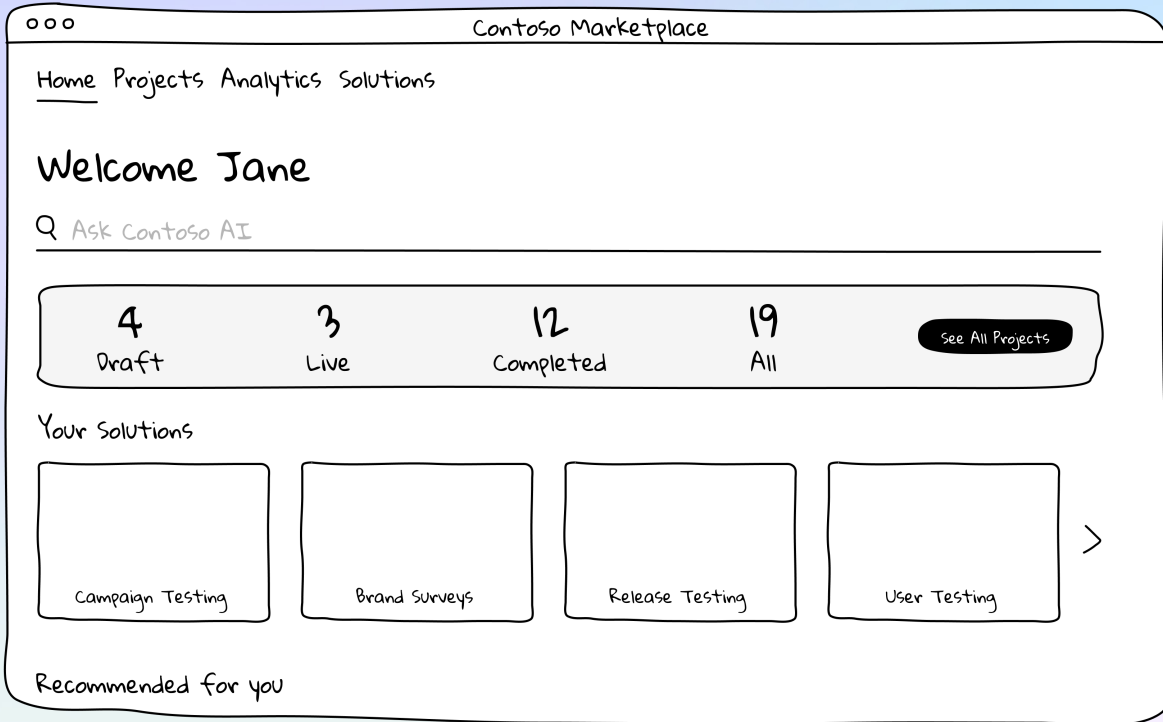
Input values

Subject: Welcome to Contoso

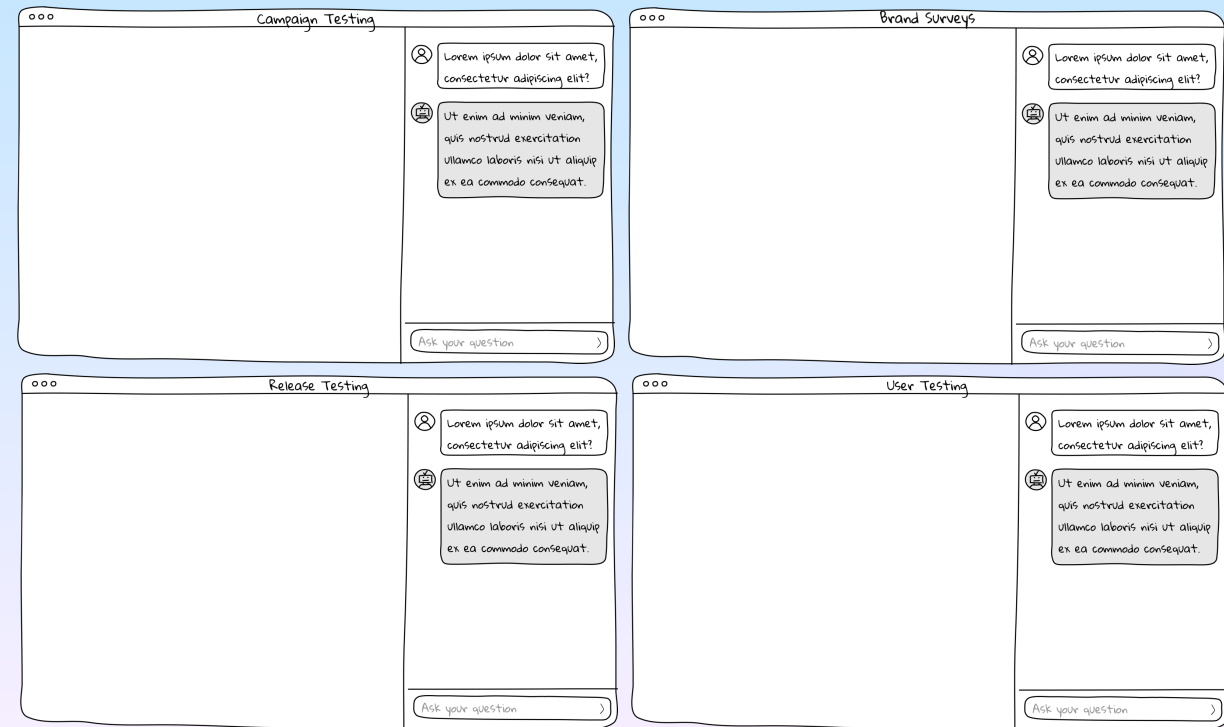
To: sarahperez@contoso.com

Body

IDENTIFY BOT HIERARCHY

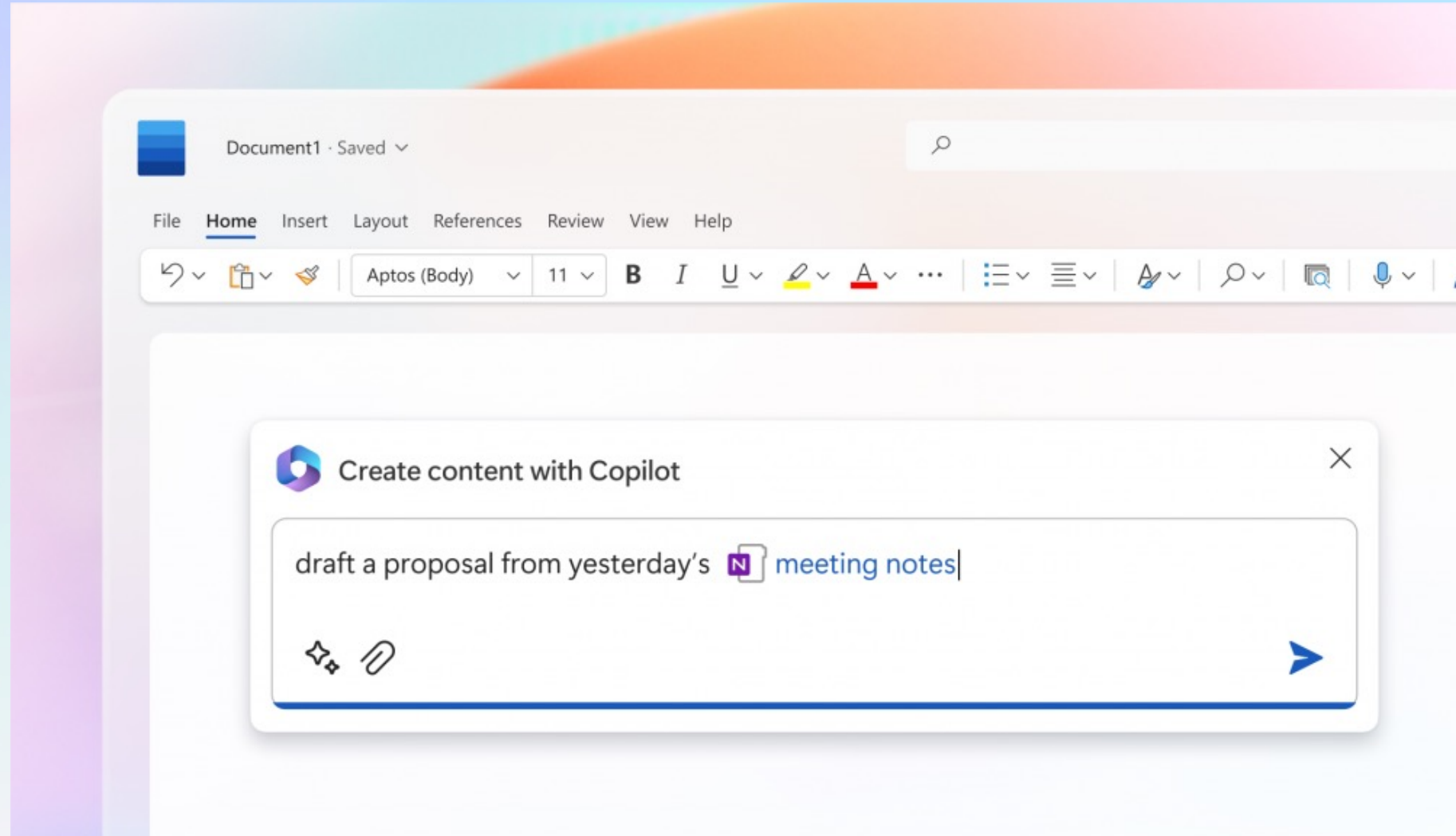
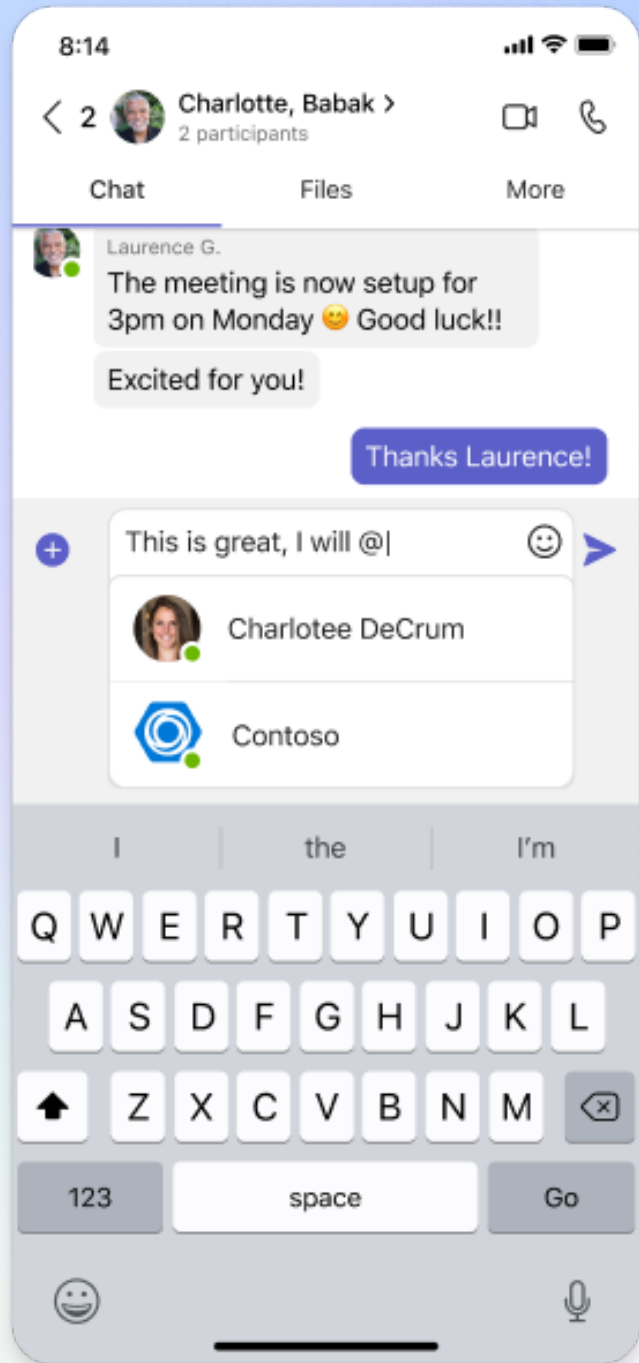


**CUSTOM DASHBOARD WITH
'MASTER BOT'**



IN-PRODUCT BOTS

TAGGING BOTS, SYSTEMS & FILES



MORE INPUT

Knowledge Base

- **Reduce time** for finding information you need.
- **Reduce** number of tickets created for IT, HR and other departments.

Document Processing

- **Extract information** from documents.
- **Reduce** human errors and data input time.
- **Compare** documents against standards.

Generative AI

- **Generate** text based on your input.
- **Write** better content.
- **Make** suggestions.

Auto Classification

- **Classify** content and redirect to the right team.
- **Reduce** triage time.

Sentiment Analysis

- **Analyze** text and define if it's good or bad.
- **Assign** to the correct team based on the result.

Speech Recognition

- **Transform** speech into text that can be analyzed.
- **Translate** to different languages.
- **Assign** documents against others.

Image Recognition

- **Analyze** images to extract text or recognize objects.
- **Translate** text into different languages.

Translation

- **Translate** text into different languages.
- **Make** applications more accessible.

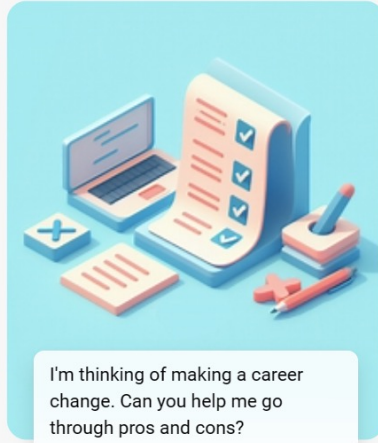


Copilot

Your everyday AI companion



Start a knock-knock joke



I'm thinking of making a career change. Can you help me go through pros and cons?



Create a SWOT analysis about environmental goals and impact

Copilot uses AI. Check for mistakes. [Terms](#) | [Privacy](#) | [FAQs](#) | [Learn more](#)

Choose a conversation style

More Creative

More Balanced

More Precise



What are new trends in conversational search?



29/8000

Feedback

1

Contoso Grand Opening Event
Internal presentation
Mirjam Nilsson

2

Agenda

- Grand opening ceremony
- Food & entertainment
- Presentation
- Team introductions
- Group photos
- Closing remarks

3

Event timeline

- As guests arrive, greet and usher to their seats outside
- Ribbon cutting ceremony will commence
- Send guests to dining commons for food & music
- Send guests to conference room for presentation
- Presentation begins
- Closing remarks from the founder
- Group photos

4

Plan for food & beverage

Number of guests	Seating	Tables	Bar/tables	Buffet	Catering
100-150	100 tables	100 tables	100 tables	100 tables	100 tables

5

Closing remarks

The upcoming sales projects outlined in this presentation are pivotal to our organization's success. With a dedicated team, meticulous planning, and unwavering commitment to customer satisfaction, we are confident that these projects will bring us closer to our growth targets. We will regularly review progress and adapt strategies as necessary to ensure the success of these initiatives.

Contoso Grand Opening Event

Internal presentation
Mirjam Nilsson



Welcome to Copilot!

Understand
Summarize this deck [in 3 key points]

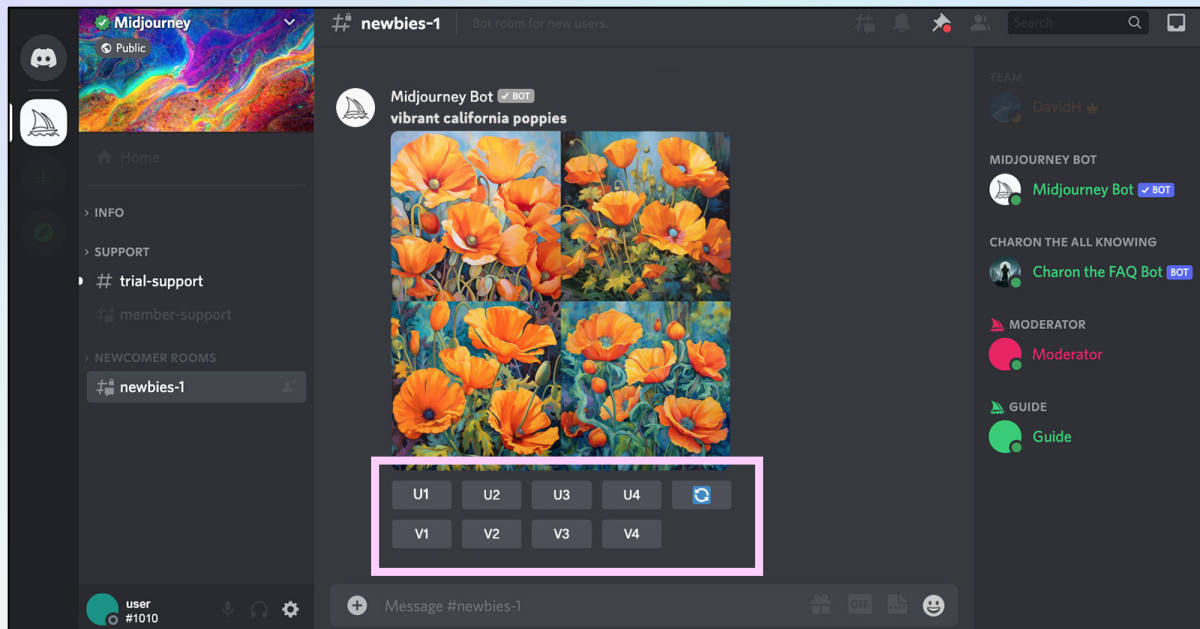
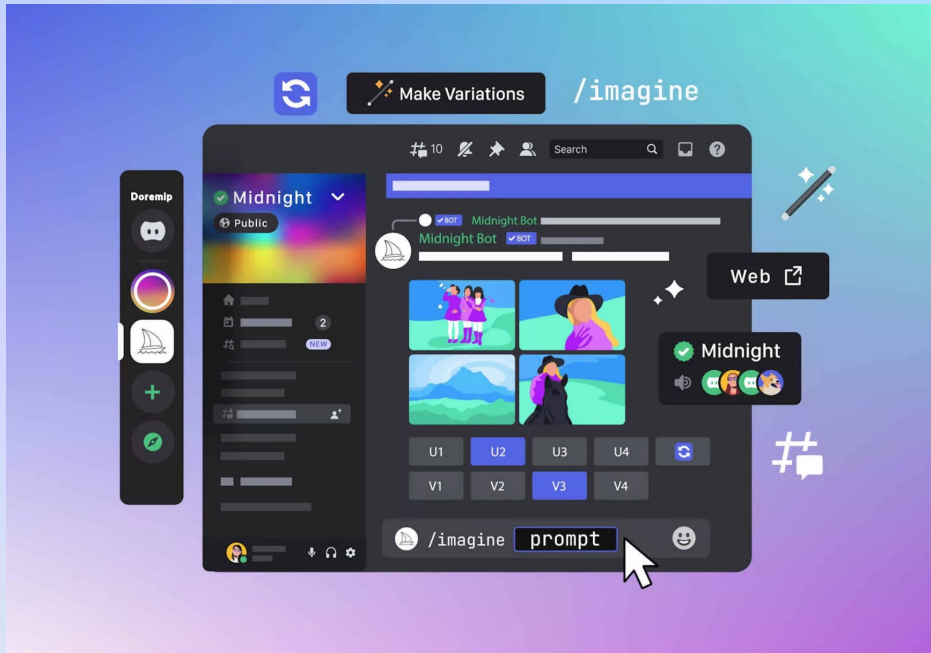
Ask
How do I [add a table of contents?]

Create
Add a slide about [the main topic of this presentation]

Edit
Organize this presentation

More prompts

Add a slide [Icons]

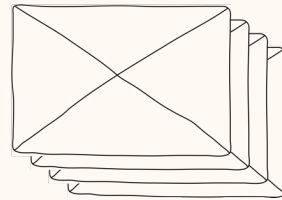


MORE OUTPUT

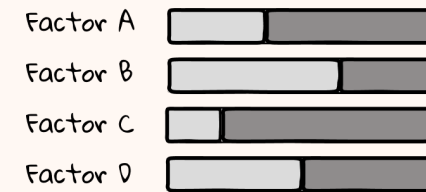
Text

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Images



Sentiment Sliders



Files

File Preview

Duis aute irure dolor in reprehenderit in voluptate velit esse.

[View more](#)

Tags

Lorem ipsum dolor sit amet, [@JohnDoe](#) adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco [@FileName](#) laboris nisi ut aliquip ex ea commodo consequat. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

References

dolor sit amet [\(1\)](#), consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. [\(3\)](#)

[LoremIpsum_Link](#)

Search

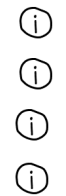
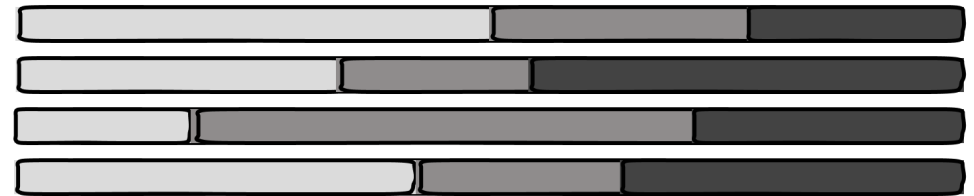
Is this information helpful?   

Key Values

Key Value: Lorem Ipsum
Key Value: Lorem Ipsum
Key Value: Lorem Ipsum
Key Value: Lorem Ipsum

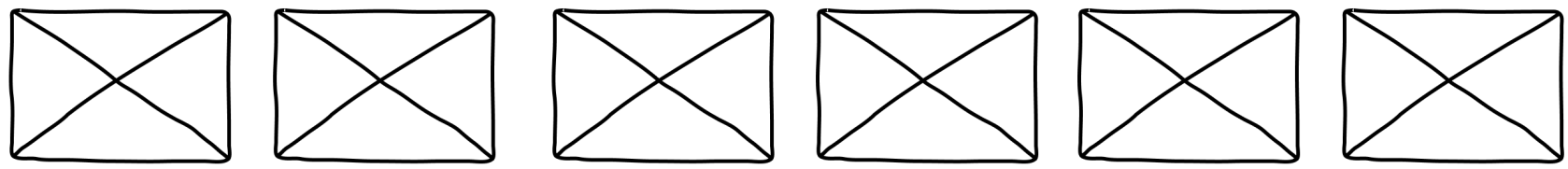
Sentiment

Lorem ipsum
Lorem ipsum
Lorem ipsum
Lorem ipsum




Objective Subjective Unusual

Lorem ipsum dolor sit amet (1), consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim (2) veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate (3) velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.











Search

Is this information helpful?   

Key Values

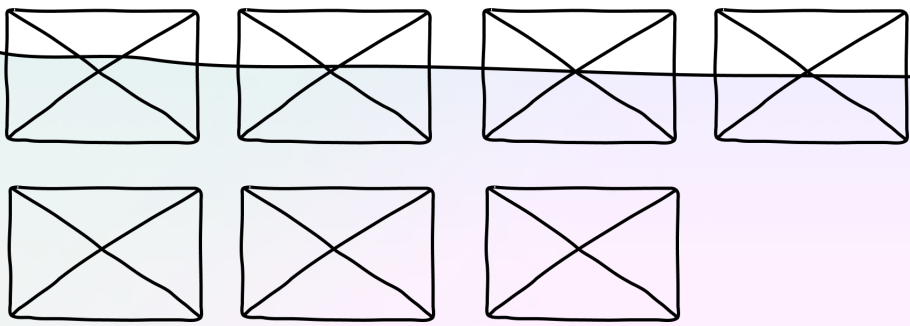
- Key Value: Lorem Ipsum
- Key Value: Lorem Ipsum
- Key Value: Lorem Ipsum
- Key Value: Lorem Ipsum

Sentiment

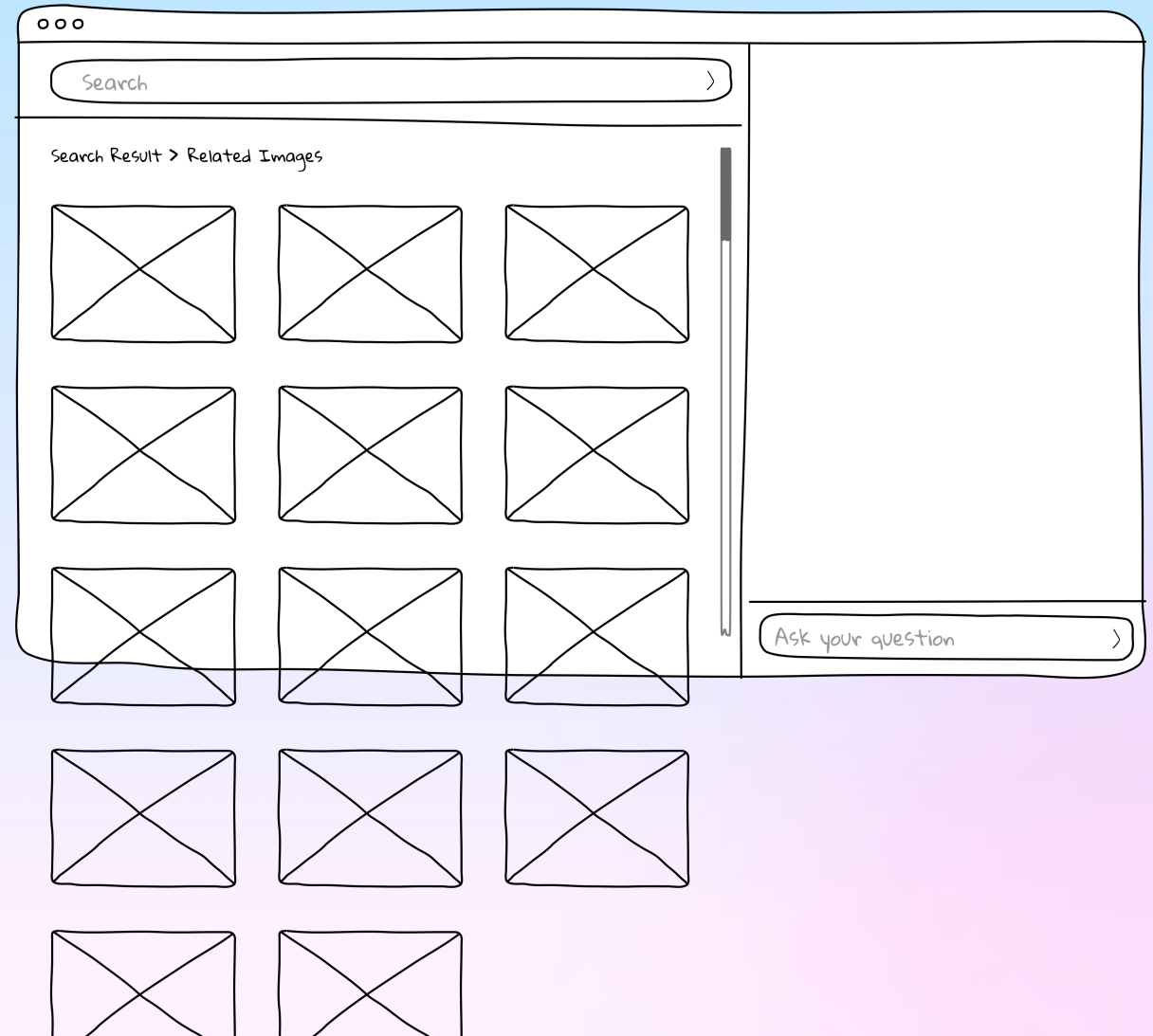
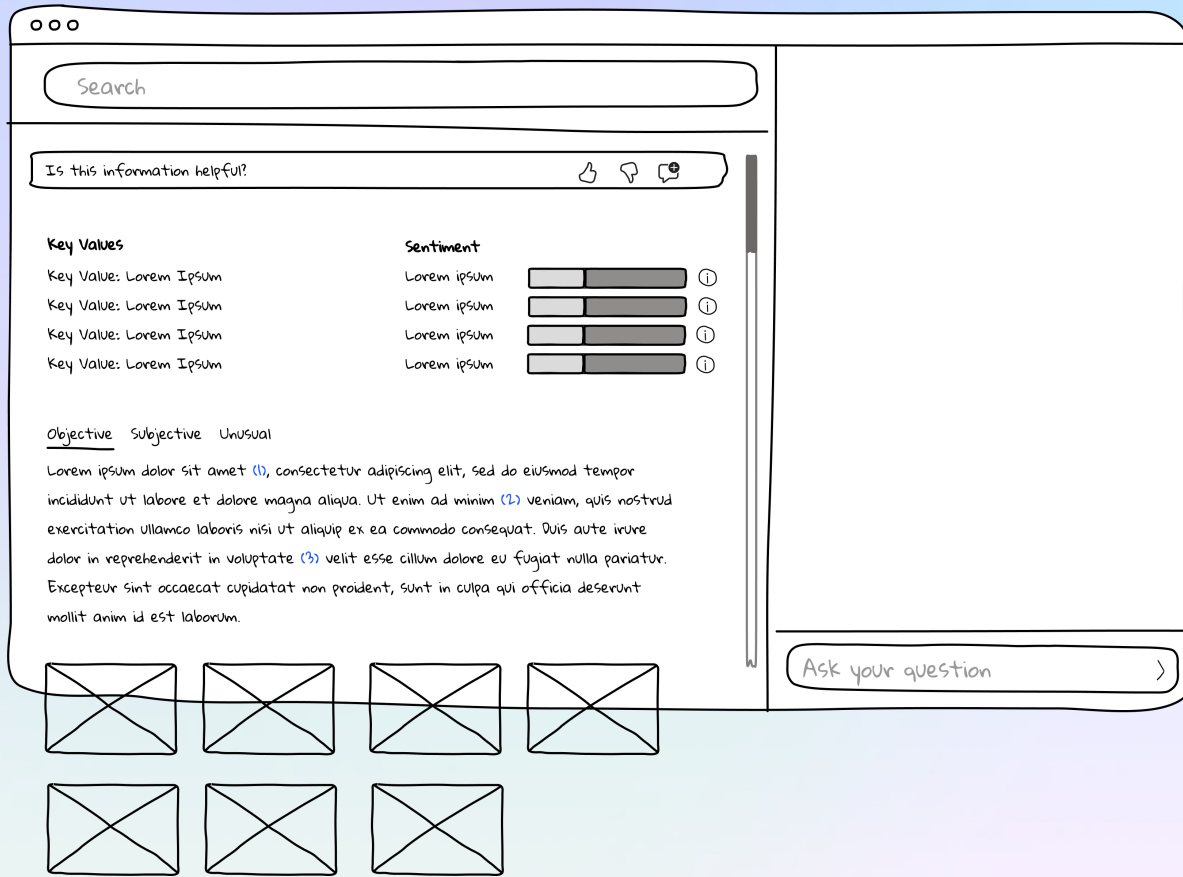
- Lorem ipsum  
- Lorem ipsum  
- Lorem ipsum  
- Lorem ipsum  

Objective Subjective Unusual

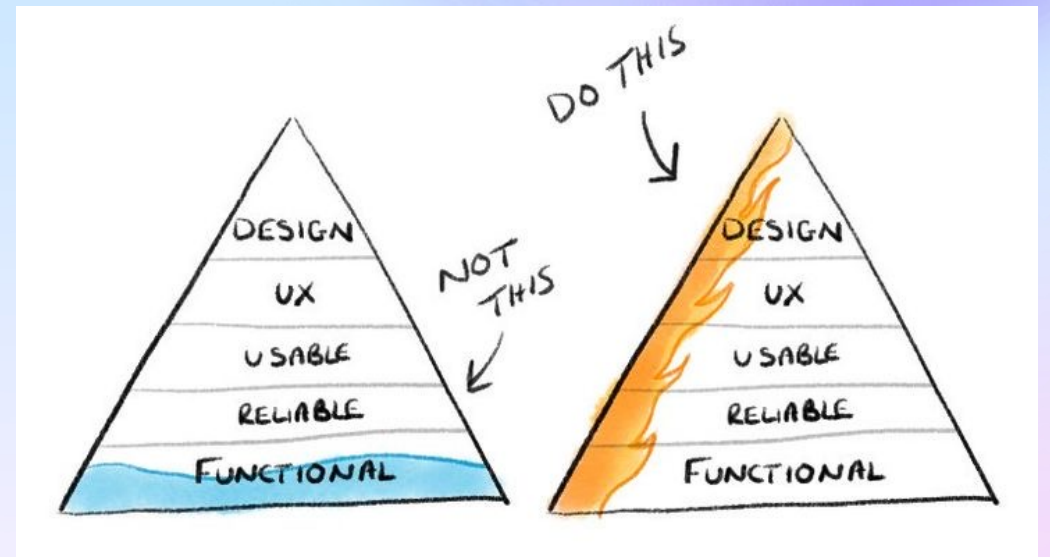
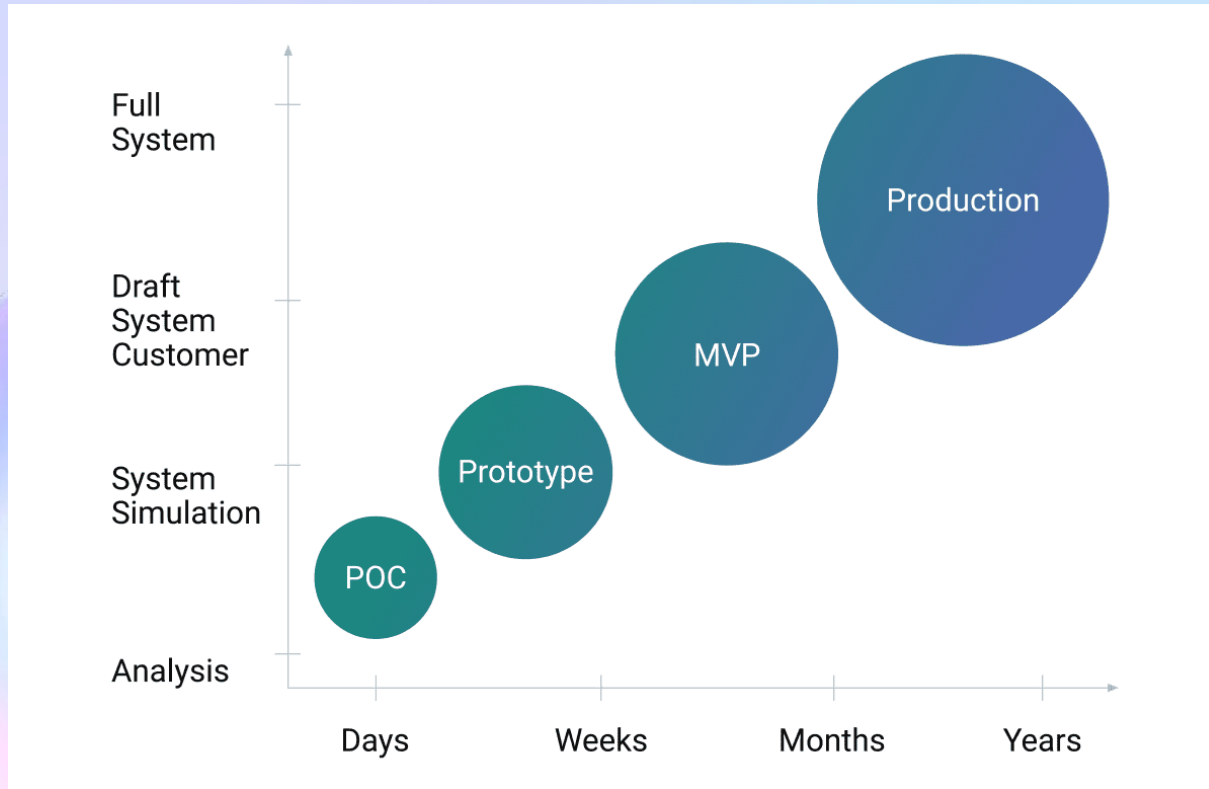
Lorem ipsum dolor sit amet (1), consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim (2) veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate (3) velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.



Ask your question >



FROM POC TO MVP > SCALE



MINIMUM VIABLE PRODUCT (MVP)

KEY

TAKEAWAYS

Across Discover, Define, Develop & Deliver

SUMMARY

DISCOVER & DEFINE

- AI opportunities can be mainly driven by latent needs
- Make sure to understand the root causes of the problem
- Play back the problem to the business stakeholders and ensure alignment
- Closely collaborate with data scientists to align their process with user research (discover) and usability testing (define)

DEVELOP & DELIVER

- Review (RAI) design patterns
- More bots: identify a bot hierarchy
- More input: design guardrails, filters, etc.
- More output: avoid lengthy scrolling and perhaps go back to traditional search UX design patterns
- Start with a PoC
- MVP is not only technical, it's minimal on ALL product aspects



THANK YOU

Let's connect on LinkedIn – Josephine Scholtes :)