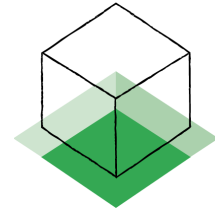## Mental Models

Chapter worksheet

Instructions

Block out time to get as many cross-functional leads as possible together in a room to work through these exercises & checklists.

Exercises

1. Existing vs. new mental models [~2 hours]

Determine existing user mental models to understand how your product will break or reinforce them.

2. Creating onboarding [~1 hour]

Craft your onboarding message and test user comprehension of cause and effect.

1. Existing vs. new mental models analysis

Discuss the following questions as a group, then capture answers in the boxes below. Review your answers as a team to determine what approaches your product will need to take to help users establish good mental models.

Example product: AI that automatically prioritizes new emails and sorts inbox according to their priority

Key questions

Who are your different user groups? Add more boxes as needed.

User group A

Example: employee at large company using email for work

User group B

Example: Everyday consumer using a free email service

What **primary goal** will each user group have?

User group A

Example: Goal - Prioritize tasks and communications received through email in order to do well at their job.

User group B

Example: Goal - Not miss the few important emails received among the flood of promotional emails.

What is the step-by-step process that **novice users** from each group currently use to accomplish the task that the AI system will accomplish? How uniform or variable is this process?

Note: user research may be needed to answer this question

User group A

Example:

Process - Frequently check email, individually triage each message.
Uniformity - Highly variable.

User group B

Example:

Process - Scan inbox for important mail, ignoring the rest
Uniformity - Highly variable.

What is the step-by-step process that **expert users** from each group currently use to accomplish the task that the AI system will accomplish? How uniform or variable is this process?

Note: user research may be needed to answer this question

User group A

Example:

Process - Set up multiple custom filters, notifications, and labels and folders
Uniformity - Highly variable.

User group B

Example:

Process - Set up filters, systematically unsubscribe from lists to free up inbox.
Uniformity - Highly variable.

What **mental models** might already be in place based on the step-by-step process and any non-AI-driven tools used by each group?

User group A

Example: Use sender, subject, and knowledge of my existing work to prioritize new email

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User group B

Example: Use sender, subject, and knowledge of what messages I might be expecting (e.g., online order notifications) to pick out important new email

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Based on existing mental models, are there potential **places where the user's mental model could break** when encountering the realities of the AI's functionality?

User group A

Example: AI system can't account for user knowledge of their wider context (e.g., they just changed roles at work; they are expecting an email from someone not in their contacts list)

User group B

Example: The AI system can't account for infrequent and variable but important emails from friends or loved ones

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Given all the above, what **cause and effect relationships** does the user need to understand — even in simplified terms or by analogy — to successfully use the AI product?

User group A

Example: Priority of email varies by:

- *Number of recipients (just user or large group)*
- *Frequency of sending emails to contact*
- *Speed at which user opens and replies to email*

User group B

Example: Priority of email varies by:

- *Contact's membership in a specific group*
- *Active orders or subscriptions*
- *Length of communication*

Given the mental model we want users to have, how might anthropomorphizing the product alter the mental model?

User group A

Example: Making the system seem "human" might imply that the AI actually does have the same knowledge and context as the user, which conflicts with the key cause and effect relationships the user needs to understand.

User group B

The biggest risks to users developing good mental models for our product are:

User group A

User group B

List the key points in product where messaging is critical for creating or updating a good mental model. For example: "onboarding", "inboarding", or "reboarding".

User group A

User group B

What if anything might need to change about how the AI works in order to accommodate mental models?

All users

Example: AI works as a binary yes / no categorizer for censoring content in an online forum, but users expect gradations of control.

2. Creating onboarding

Start crafting your onboarding message using this template, and try a few different versions:

1. Onboarding template

This is __{ **your product or feature** }___, and it'll help you by __{ **core benefits** }__.

It's NOT able to __{ **primary limitations of AI** }__.

Over time, it'll change to become more relevant to you.

You can help it get better by __{ **actions users can take to help the system learn** }___.

Version 1

Version 2

Version 3

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2. Messaging checklist

Take each version of your messaging through this checklist:

☐ Does the description focus on the benefits to the user and not the technology?

☐ Are we introducing the product at the right level, or are we overloading the description with things that should be saved for "inboarding"?

☐ In the product, do we make it easy to experiment with the process we describe in the "You can help it get better by…" phrase?

☐ Is the description specific and explicit about how the user will interact with and improve the AI over time?

☐ Are we specific and explicit about how the system will change over time and how that will benefit the user?

3. Demonstrating cause and effect

Outline what actions the user will do next in order to reinforce the information described in the message you wrote above.

- Will they complete set-up tasks?
- See examples of what the AI can do?
- Simply start trying it?

4. Test user mental models

Pick your best draft onboarding messaging + next action concepts, or pick several to test, then conduct user research.

Research protocol questions

- First, show users your initial onboarding concepts, then ask them questions like:

    - Explain in your own words what [product] is.

    - Explain in your own words how [product] works.

    - Based on what you saw, describe what using [product] will be like.

    - Based on what you saw, how useful do you expect [product] to be for you?

    - Any additional expectations you have about [product] based on what you read?

- Next, if you have any wireframes or demos or working prototypes of your product or feature, show it to the user after walking through your onboarding experience concepts.

- Lastly, after interacting with both the design concepts and the AI prototype, have users describe how the AI experience compared to their expectations.