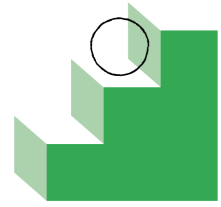


# User Needs + Defining Success



## Team 13: Intelligent Onboarding Assistant

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### Exercises

#### 1. Evidence of user need [multiple sessions]

Gather existing research and make a case for using AI to solve your user need.

#### 2. Augmentation versus automation [multiple sessions]

Conduct user research to understand attitudes around automation versus augmentation.

#### 3. Design your reward function [~1 hour]

Weigh the trade offs between precision and recall for the user experience.

#### 4. Define success criteria [~1 hour]

Agree on how to measure if your feature is working or not, and consider the second order effects.

## 1. Evidence of user need [multiple sessions]

### User research summary

Date	Source	Summary of findings
Sep 2025	Internal HR survey	73% of new hires spend the first week searching for basic info; 45% report feeling overwhelmed.
Oct 2025	Industry HR reports	Avg. 3–6 months for full onboarding; 40% of HR time spent answering repetitive questions.
Oct 2025	Employee interviews	“Handbook too long”, “Wish for a single source of truth”, “Hard to find culture-specific info”.
Oct 2025	GitLab handbook analysis	100+ pages across 11 sections, difficult to navigate manually.

### Focused User Need Statement

New employees struggle to efficiently **access, understand, and internalize** organizational culture, policies, and processes. This results in **delayed productivity**, inconsistent knowledge transfer, and **high HR workload** due to repetitive inquiries.

How might we solve { our user need } ?

Can AI solve this problem in a unique way?

AI probably better	AI probably <b>not</b> better
<ul style="list-style-type: none"><li>• The core experience requires recommending different content to different users.</li><li>• Personalization will improve the user experience.</li><li>• Needs natural language understanding (for Q&amp;A and semantic search)</li><li>• Detects evolving onboarding trends and low-frequency queries</li><li>• Need to recognize a general class of onboarding topics too large to manually enumerate.</li><li>• An agent or bot experience for the onboarding domain.</li><li>• The user experience doesn't rely on strict predictability.</li></ul>	<ul style="list-style-type: none"><li>• The most valuable part of the core experience is its predictability regardless of context or user input.</li><li>• The cost of errors is very high and outweighs the benefits of a small success rate increase.</li><li>• Users need to understand everything that happens in the code.</li><li>• Speed of development and release is more important than long-term AI value.</li></ul>

### AI Suitability Conclusion

**We believe AI can effectively solve the onboarding inefficiency problem** because it can intelligently **curate, validate, and personalize** large volumes of company data, ensuring high-quality, bias-free, and timely access to knowledge , drastically reducing HR effort while improving the new hire experience.

## 2. Augmentation versus automation

### System Positioning:

The Intelligent Onboarding Assistant is designed as an **augmentation-first** system, AI automates the data-heavy, repetitive components of onboarding while keeping **humans in the loop** for contextual validation, compliance, and empathy-driven interactions.

**Human - AI Collaboration Map**

Function	AI Role	Human Role	Type
Content Ingestion & Cleaning	Automates ingestion from GitLab, YouTube, and blog data sources; performs text cleaning and deduplication.	HR/IT approve data sources and monitor anomalies.	Automation
Question Answering	Provides instant, context-aware responses to employee questions through semantic search and NLP.	HR handles complex, sensitive, or nuanced questions.	Augmentation
Bias & Fairness Validation	Detects sensitive terms, measures group fairness, and performs automatic balancing.	HR validates flagged cases to ensure interpretability and compliance.	Augmentation
Content Curation	Recommends relevant onboarding material per role, department, or interest.	L&D teams finalize the onboarding flow and learning paths.	Augmentation
Data Orchestration (Airflow)	Executes weekly automated pipeline runs; retries failures automatically.	DevOps/ML engineers review logs, handle anomaly reports.	Automation

## Research Protocol Questions (Triptech Method)

### 1. If you were helping to train a new coworker for a similar role, what would be the most important tasks you would teach them first?

I'd focus on showing them how to locate company information efficiently, where to find HR policies, project documentation, and cultural guidelines. Then I'd teach them how to use onboarding communication channels like Slack/Confluence (most time-consuming steps for new hires.)

### 2. Tell me more about that action you just took. Is that an action you repeat:

Weekly. Most onboarding-related searches(policies, tool access, & benefits info) occur multiple times a week for the initial months after joining, as employees get familiar with systems.

### 3. If you had a human assistant to work with on this task, what, if any, duties would you give them to carry out?

I'd ask them to summarize long documentation into role-relevant highlights, flag outdated or repetitive materials, and answer basic "how-to" questions, like how to access certain internal tools. Essentially, they'd act as a human guide to reduce my search time.

## Research Protocol Questions (Feature-Specific Evaluation)

### 1. Describe your first impression of this feature.

It feels like a helpful "knowledge concierge" that makes onboarding smoother. It reduces frustration by offering contextual, verified answers in one place rather than forcing new hires to browse

### 2. How often do you encounter the following problem: "Spending excessive time finding or verifying onboarding information"?

Often (a few times a week).Most employees repeatedly search for the same HR or role-specific details in the first 60–90 days.

### 3. How important is it to address this need or problem?

Extremely important. Information overload & inconsistency directly delay productivity, increase HR workload. Addressing it has a measurable impact on employee satisfaction and retention.

## User Attitudes Toward Automation

- **Employees:** Prefer curated onboarding that feels personalized; comfortable with AI assistance if accuracy and reliability are maintained.
- **HR Teams:** Value automation for efficiency but insist on human review for compliance, cultural fit, and empathy.
- **Managers:** Appreciate consistency, fairness, and reduced onboarding variance across teams.
- **Executives:** See potential for scalability and cost reduction without sacrificing experience quality.

The system **augments human expertise** rather than replacing it. AI handles repetitive ingestion, validation, and question-answering, while humans ensure accuracy, emotional context, and regulatory compliance.

### 3. Reward Function Design

#### Optimization Choice

#### Optimized for Precision.

Because accuracy and trust are crucial for onboarding, irrelevant or incorrect responses erode user confidence faster than small gaps in recall.

Reference / Prediction	Positive	Negative
Positive	<b>True Positive</b> <ul style="list-style-type: none"><li>• Assistant recommends accurate, relevant onboarding material for the user's role.</li><li>• Correctly answers culture or process-related queries.</li><li>• Bias-free, schema-compliant content is surfaced.</li></ul>	<b>False Negative</b> <ul style="list-style-type: none"><li>• Misses a relevant policy or FAQ even though it exists.</li><li>• Doesn't suggest a useful training video for a new hire's role.</li><li>• Skips content that could improve onboarding efficiency.</li></ul>
Negative	<b>False Positive</b> <ul style="list-style-type: none"><li>• Shows irrelevant or outdated onboarding content.</li><li>• Recommends policy meant for another department.</li><li>• Includes biased or low-quality text chunks.</li></ul>	<b>True Negative</b> <ul style="list-style-type: none"><li>• Correctly filters out irrelevant or outdated information.</li><li>• Excludes duplicate or low-confidence items.</li><li>• Removes noisy data (e.g., broken links or unverified content).</li></ul>

Our AI model will be optimized for **precision**, because employees and HR prefer highly accurate, trusted onboarding content even if that means occasionally missing a few relevant items. We understand that the tradeoff for choosing this method means our model will **sometimes omit useful but low-confidence information (lower recall)**, but this ensures **greater trust, fairness, and compliance integrity**, critical in HR and onboarding contexts.

**Why precision matters most:** False positives (irrelevant or wrong onboarding materials) quickly erode trust among new hires and HR, leading to confusion and extra manual verification.

**Why recall is less critical:**Missing one or two helpful items can be compensated by HR oversight or retraining; wrong or biased information, however, can damage employee confidence and legal compliance.

#### Reward Metrics:

- Precision  $\geq 90\%$  (measured via relevance scoring and user feedback).
- Fairness bias  $\leq 5$  terms per 1000 words.
- Helpfulness rating  $\geq 80\%$ .
- Schema compliance  $\geq 95\%$ .

## 4. Success criteria

### Version 1

If pipeline success rate for the Intelligent Onboarding Assistant's data pipeline drops below 95% for two consecutive runs, we will review Airflow logs, rerun failed tasks, and trigger an anomaly diagnosis.

### Version 2

If user satisfaction for the onboarding content recommendation system drops below 80% in survey feedback, We will analyze user logs, collect qualitative feedback, and retrain relevance models.

### Version 3

If the fairness score for the bias and fairness validation module drops below 0.8 or sensitive term frequency exceeds 5 per 1,000 words, we will run bias mitigation scripts, review flagged content, and update the fairness dictionary.

## Statement Iteration Checklist

1. Is this metric meaningful for all of our users? **Yes**, applies to HR teams, employees, and ML operators.
2. How might this metric negatively impact some users? **Overemphasis on fairness might slow pipeline runtime**, but ensures compliance.
3. Is this what success means for our feature on day 1? **Yes**, initial focus on reliability and accuracy.
4. What about day 1,000? **Yes**, scalable with automated monitoring and retraining.

### Final Version

If overall reward score for the pipeline drops below 0.8 for two consecutive review cycles, we will conduct a root-cause diagnostic focusing on the lowest-performing dimension (data quality, fairness, relevance, or efficiency), retrain affected modules, and update content validation logic.