

From Profiles To Onboarding Methods: A Guideline For Onboarding Leads Supporting Digital Adoption

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Acknowledgments

Coming to the Netherlands two years ago and now completing this project, which has taken seven months from February to September, has been a journey filled with growth and learning. Looking back, I feel very certain that choosing this program and this university was the right decision. It has given me the chance to truly develop myself, from being a digital media and arts student into someone who has learned to think more logically, and to shape ideas with an interaction and product design mindset.

A full year of this journey was spent at Amgen, the company I collaborated with for my graduation project. I am deeply grateful to my colleagues and especially to my manager Sachin, who always encouraged me to try new things. He never treated me as "just an intern," but instead as a student and a trusted assistant. He pushed me to talk to different people and consistently offered feedback that was both supportive and practical.

I also want to sincerely thank my graduation supervisor and mentor at the university. Their constructive guidance throughout the project helped me stay focused and gave me confidence in my chosen direction. This project was not always easy. It was my first time carrying out a full graduation project in collaboration with a company, and I often struggled to find the right balance between academic expectations and company needs. But I am grateful that, through this process, I managed to find that balance and bring the project to a meaningful conclusion.

Finally, I want to thank everyone who has supported me along the way. This experience has strengthened my belief in continuing on this path, and I will keep moving forward with courage and determination.

Summary

Digital transformation within enterprises requires employees to adopt new systems quickly and effectively, making onboarding a critical challenge. This project set out to design a guideline that enables onboarding leads to translate employee profiles into tailored onboarding methods, ensuring smoother transitions during system adoption.

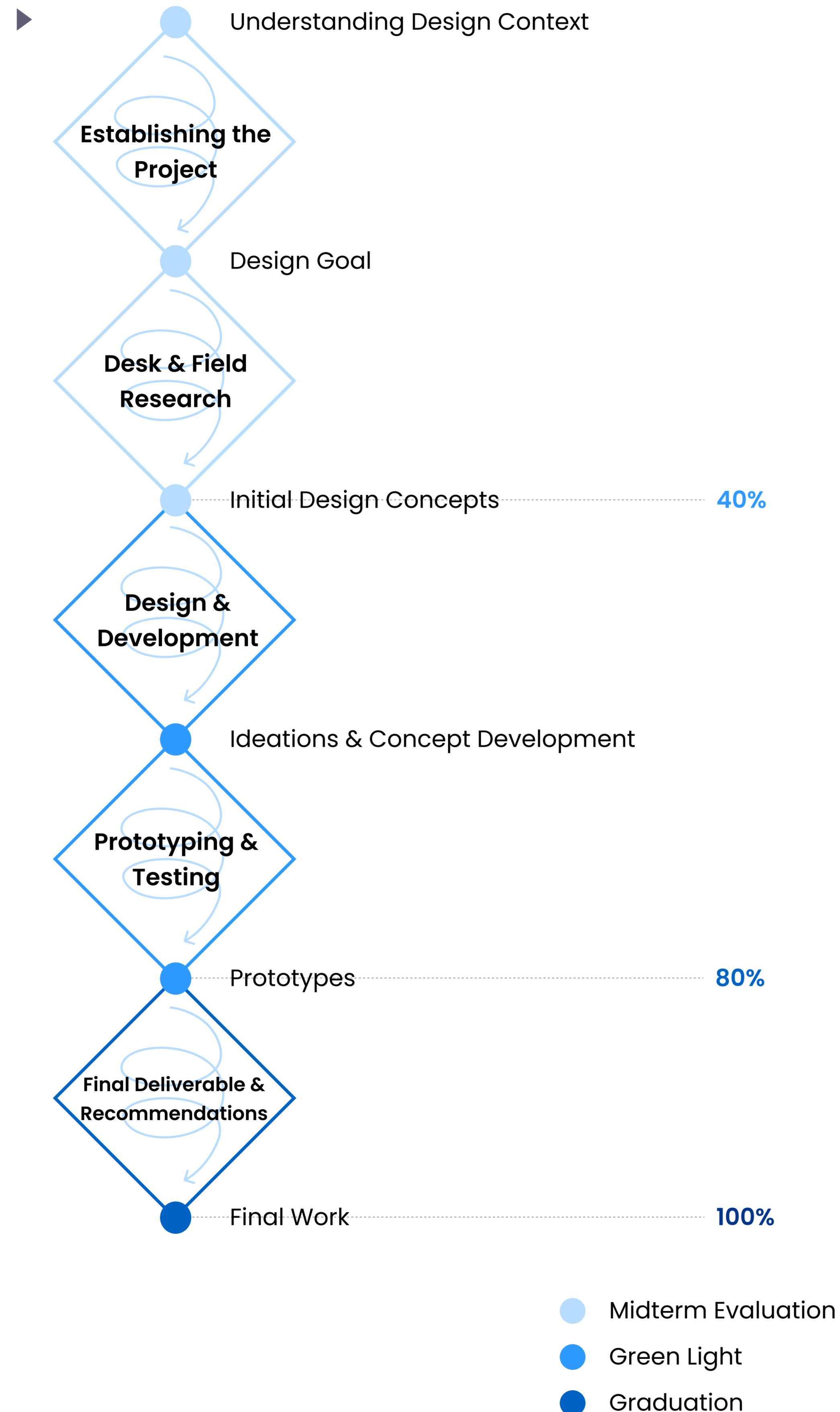
The research followed a multi-stage process, beginning with desk and field research, and progressing through three iterative rounds of prototyping and testing. A six-dimensional coding system was developed to standardize both employee profiles and onboarding methods, allowing them to be directly compared and matched.

The final deliverable combines backend logic with a frontend interface. From the perspective of onboarding leads, the process is experienced as a clear, step-by-step flow: from inputting employee traits, to generating personalized method lists, and finally to merging group profiles. While limitations remain, such as handling neutral trait selections and defining method strengths, the framework provides a verifiable and extensible foundation.

Amgen has already begun testing this guideline within its digital transformation program, and its potential extends to other organizations seeking structured and adaptive onboarding strategies.

Report Overview

Fig. 1 – Overall design process flow chart.



As shown in Figure 1, this report follows a five-phase structure aligned with key design activities: Establishing the Project, Desk & Field Research, Design & Development, Prototyping & Testing, and Final Deliverable & Recommendations. Each phase involves a core activity and results in a concrete output, which then directly informs the next step in the process.

Rather than separating research and design into isolated parts, the report integrates them into a continuous flow. Every phase builds upon the outcome of the previous one, reflecting the iterative and evidence-driven nature of the project.

For instance, the design goal was established during the project framing and subsequently guided the desk and field research. These activities helped clarify the problem space and refine the initial goal, which in turn informed the development of design concepts and prototyping directions. In this way, each labeled output in Figure 1 represents both the outcome of one chapter and the entry point of the next, forming a coherent and evolving design storyline.

The progress markers in Figure 1 represent key project milestones:

- Midterm Evaluation ● (40%): Complete the first two phases, including Establishing the Project and conducting Desk & Field research. The main goal is to generate initial design concept directions based on research findings.
- Green Light ● (80%): Complete the Design & Development and Prototyping & Testing phases. These correspond to the middle three diamonds in Figure 1, from "Initial Design Concepts" to "Prototypes". These stages focus on refining and testing the design concepts.
- Graduation ● (100%): Complete the entire project and finalize the framework, marking the end of the graduation process.

Glossary

PD: Process Development

CPO: Combination Product Operations

DT: Digital Transformation

Next-Gen: Next Generation

PLM: Product Lifecycle Management

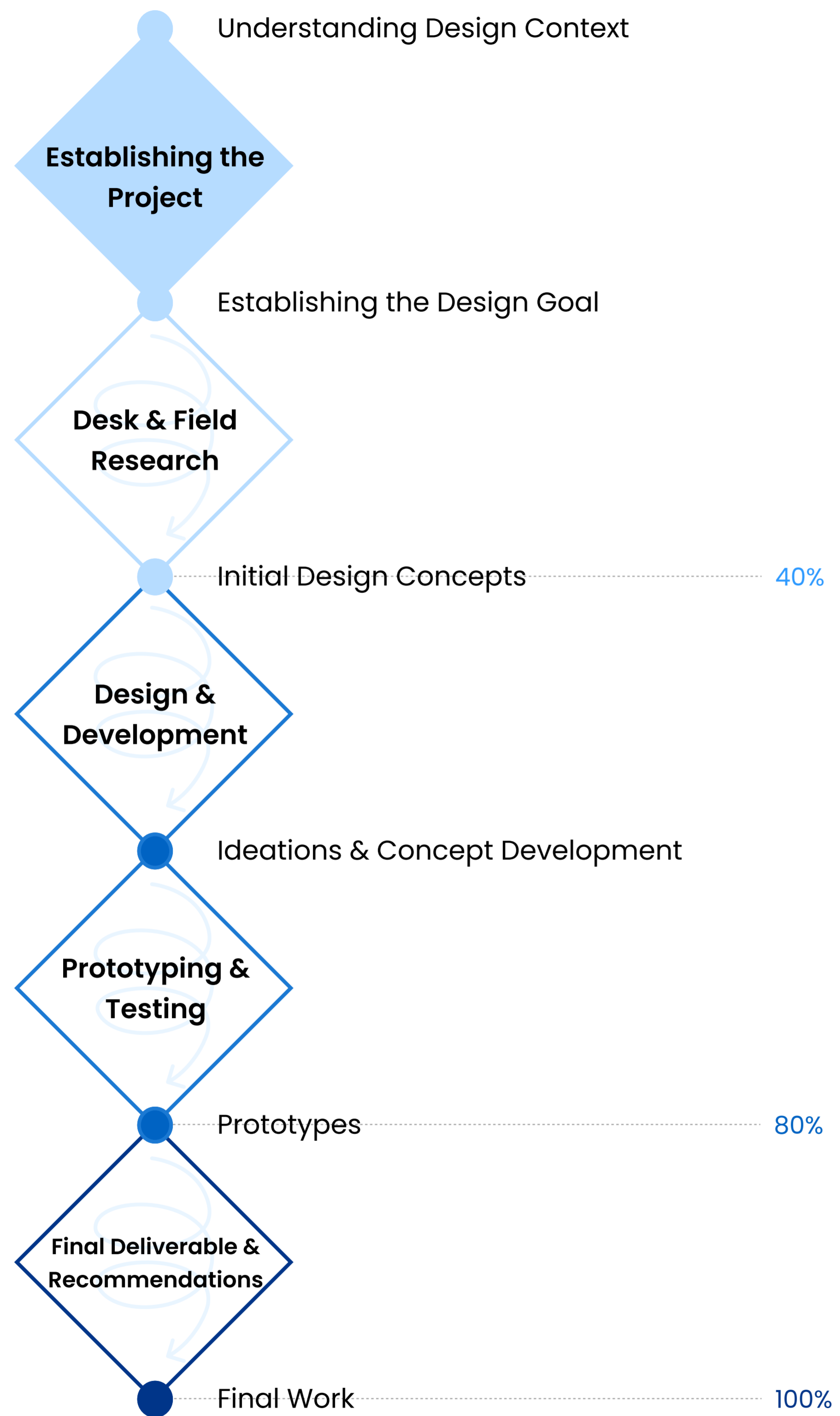
SaaS: Software-as-a-Service

OCM: Organizational Change Management

DAP: Digital Adoption Platform

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1. Establishing The Project

This chapter establishes the project direction by linking background research with early insights. It introduces the context of digital transformation and onboarding at Amgen, supported by initial interviews to understand current challenges. These findings helped define the design context and led to the formulation of the project goal: developing a guideline that translates employee profiles into personalized onboarding methods.

1.1 Background

1.1.1 Digital Transformation In Enterprises

Globalization in recent decades has placed increasing pressure on businesses to adapt and evolve in highly competitive environments. To thrive, organizations must integrate processes and tools efficiently, leveraging advancements in digital processes and collaborative technologies (Singh & Hess, 2017; White, 2012). Digital transformation (DT) is defined as “a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm” (Verhoef et al., 2021). The rapid pace of innovation in digital technology has necessitated the implementation of DT across various industries and organizational contexts (Kraus et al., 2021). According to McKinsey, automation technologies alone could affect up to 50% of current work activities, further intensifying the need for digital adaptation at scale (Bughin et al., 2018).

This shift is not merely technological. Rather than a single technology upgrade, digital transformation is a continuous and strategic process that requires both structural and cultural shifts (Burchardt & Maisch, 2019). At the core of this transformation is the organization itself, including its systems, workflows, and, most importantly, its people (Henriette et al., 2015; Marx et al., 2021). Firms are now challenged not only to adopt new tools but also to reconfigure their internal capabilities, update value creation logic, and align teams around a shared transformation vision (Vial, 2019).

To better understand how digital transformation unfolds within enterprise settings, this section unpacks two dimensions of change: the organizational structure and the nature of daily workflows. The first focuses on the organizational level, addressing what needs to change. The second explores how day-to-day workflows are evolving from static, document-based processes to more fluid, data-driven systems. This shift also redefines how employees interact with tools, information, and team processes during onboarding.

Organizational Change and Enterprise-Wide Transformation

Digital transformation challenges organizations to rethink their internal structures, processes, and leadership models. It demands

not only technological adoption, but also strategic reorientation and cultural adaptation (Westerman et al., 2011; Burchardt & Maisch, 2019). A central element of this shift is the development of dynamic capabilities—*the ability to sense emerging trends, seize opportunities, and reconfigure internal resources accordingly* (Helfat et al., 2007; Warner & Wäger, 2019).

Such transformation often requires organizations to break down silos, promote cross-functional collaboration, and flatten traditional hierarchies to improve agility and responsiveness (Bai et al., 2017; Kane et al., 2015). This shift supports faster decision-making, decentralizes authority, and enables teams to experiment with digital tools in more autonomous ways (Fitzgerald et al., 2014). As Henriette et al. (2015) note, the success of digital transformation largely hinges on how well organizational structure and culture can evolve alongside technological investments.

From Document-Driven to Data-Driven Workflows

Traditionally, enterprises relied heavily on document-centric systems, such as static files stored and exchanged via shared drives. These systems often resulted in fragmented knowledge and operational inefficiencies (Vial, 2019). They also made collaboration slow and limited visibility across teams.

The shift toward data-driven workflows emphasizes real-time, integrated, and interoperable systems where information is structured and continuously updated. This evolution enables organizations to automate decisions, enhance process transparency, and deliver faster, more personalized outcomes (Davenport & Redman, 2020). Platforms like cloud-based dashboards or centralized knowledge graphs have replaced one-off reports, allowing for continuous monitoring and response (Kobi, 2024).

Importantly, this shift is not only technical but also behavioral. As data becomes a shared organizational asset, teams can collaborate more effectively and respond to changes with greater agility (Rogers, 2016).

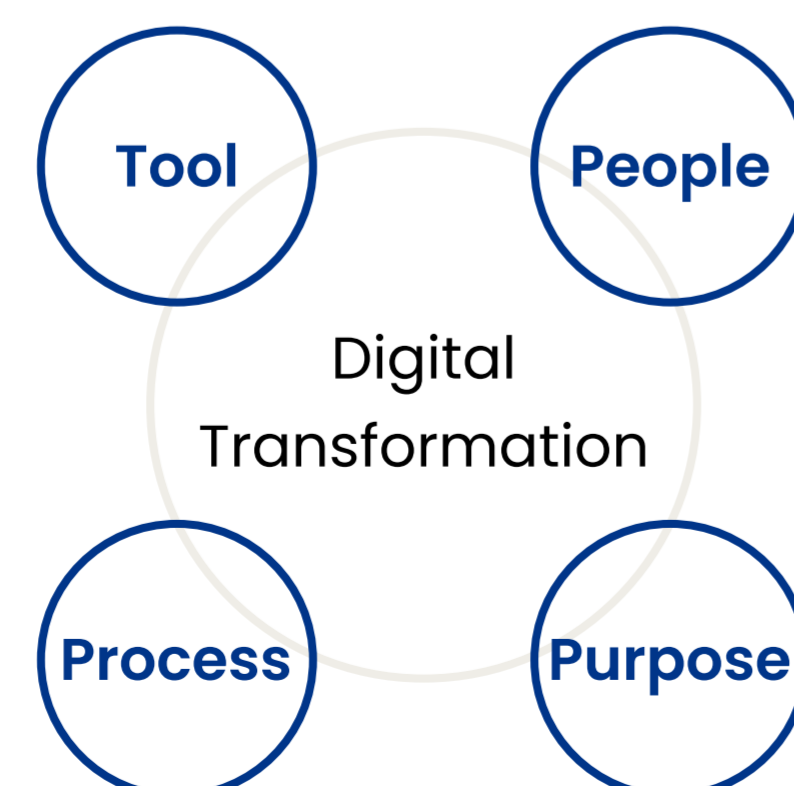
1.1.2 Challenges In Digital Transformation

Although digital transformation is widely seen as a strategic priority, its outcomes remain highly variable. While some organizations report significant gains in efficiency, innovation, and competitiveness, others struggle to realize expected benefits, or fail entirely. As McKinsey highlights, less than 30% of digital transformation initiatives succeed in achieving their goals (McKinsey & Company, 2021). This mixed record reflects the complex interplay between technology, strategy, people, and culture. Transformation is not a purely technical upgrade, but a deep organizational shift that must be executed with clarity, alignment, and adaptability (Andriole, 2020).

A review of recent literature and industry reports reveals several recurring challenges that contribute to the high failure rate of digital transformation efforts. These include lack of leadership commitment, cultural resistance to change, misaligned or unclear strategic objectives, and overemphasis on technology over people. For instance, Andriole (2020) emphasizes that while companies often invest heavily in “hard” components, like infrastructure or software, they tend to underestimate “soft” factors such as leadership engagement, employee mindsets, and cultural readiness. Similarly, transformation programs often fail when cross-functional collaboration is weak or when digital goals are not clearly communicated across departments (Surgere, 2023; Carr, 2023; Oludapo et al., 2024).

Moreover, many organizations lack realistic expectations and underestimate the resources, time, and change management efforts required for successful adoption. As one McKinsey consultant puts it: “Transformations are hard—and digital ones are harder” (McKinsey & Company, 2021). Prior research findings underline the need for a more holistic approach that places equal emphasis on people, processes, and purpose, not just on tools.

Fig. 1.1 – Digital Key Factors Affecting Digital Transformation Success.



1.2 Existing Onboarding Processes

1.2.1 Challenges In Digital Adoption

While digital transformation challenges often appear systemic, many of them manifest at the level of user engagement. At the heart of this lies digital adoption, the way people internalize and apply new tools in practice.

As established earlier, digital transformation often fails not because the tools are flawed, but because people don't, or cannot, effectively use them (Surgere, 2023; Carr, 2023; Oludapo et al., 2024). Digital adoption, the process by which individuals and teams internalize and apply new technologies to improve their work, is increasingly seen as the most critical lever for transformation success (Jalo & Pirkkalainen, 2023; Saldanha, 2019). Without widespread user engagement, even the most advanced systems remain underutilized, creating a gap between deployment and actual impact.

Recent literature and industry reports identify several recurring obstacles that hinder digital adoption at scale. First, many organizations neglect to design user-centered onboarding and training processes. According to Rehmani (2025), users are often overwhelmed by complex interfaces and a lack of in-context guidance, which leads to disengagement and workarounds. Second, digital adoption efforts frequently suffer from leadership gaps, when senior stakeholders do not model usage or communicate the strategic value of new tools, employees are less likely to follow through (Orlov, 2023).

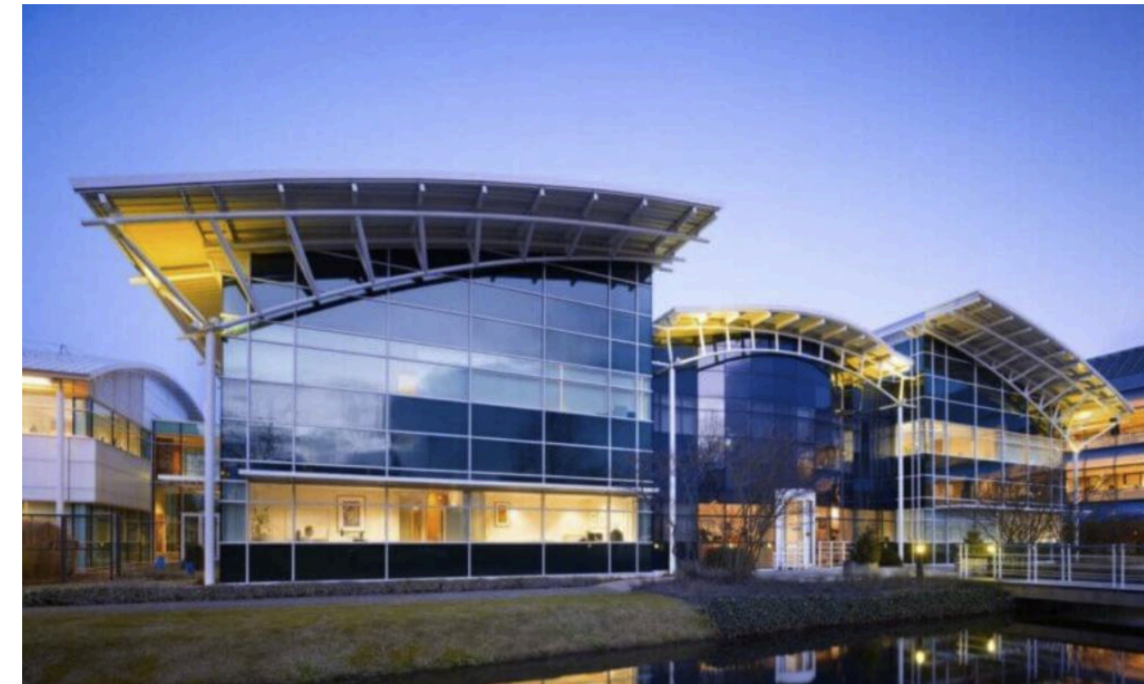
A third barrier lies in organizational culture. Resistance to change, fear of redundancy, and “change fatigue” are common when digital initiatives are rolled out without sufficient psychological safety or communication (Rohn, 2024; Jalo & Pirkkalainen, 2023; Ali et al., 2016). Additionally, adoption strategies are often one-size-fits-all, ignoring the diverse roles, needs, and digital fluency levels across departments. As Tony Saldanha (2019) notes, successful adoption requires deliberate integration into users' routines, with clear alignment between the technology and actual business outcomes.

In short, it must be embedded into the core of transformation planning: supported by leadership, built on user-centered design, and continuously reinforced through enablement and feedback.

1.3 Project Introduction

1.3.1 Company Background

Fig. 1.2 – Amgen site in Breda, Netherlands.



Amgen is one of the leading biotechnology companies in the world. We are committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing, and delivering innovative human therapeutics.

At Amgen Breda, medicines are labeled, assembled, stored, and shipped worldwide. The site manages the manufacturing and logistics of final packaged drug products, including labeling, packaging, and global distribution. With employees of diverse nationalities, the facility supports supply chain processes, manufacturing, marketing, sales, and clinical research for new medicines (About Amgen, n.d.).

Department Background

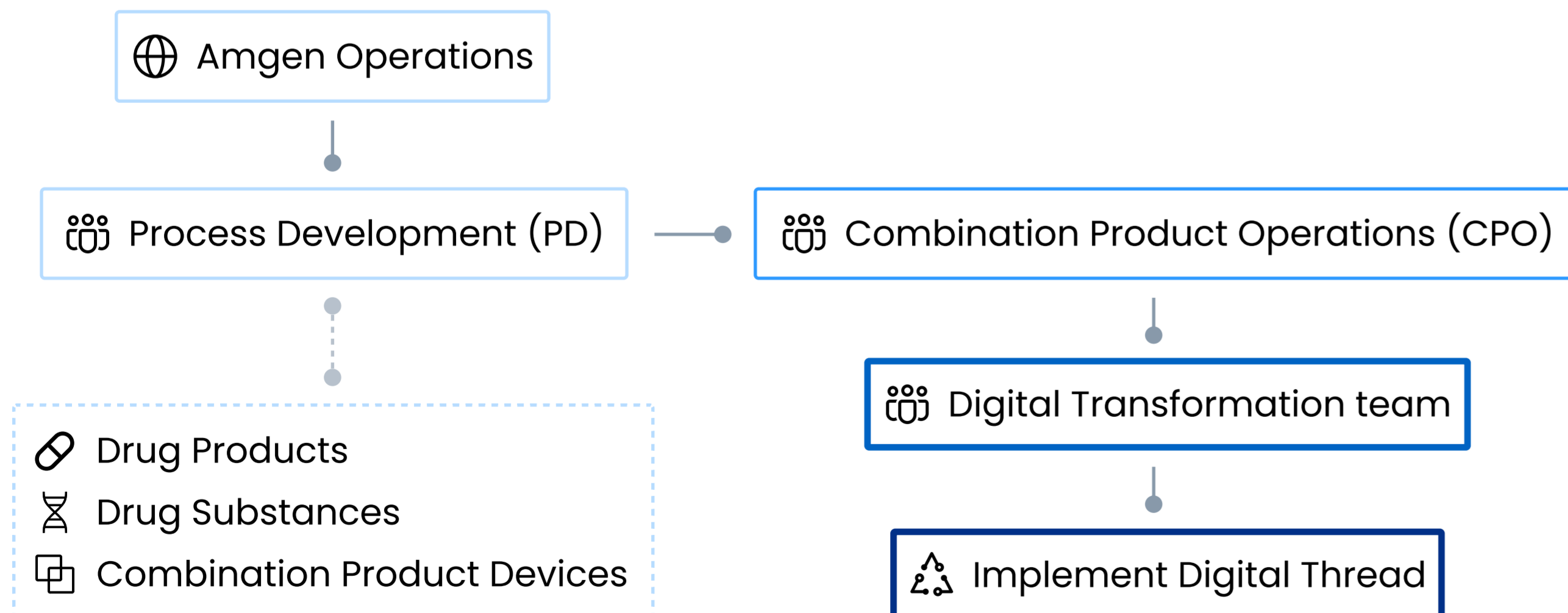


Fig. 1.3 – Organizational structure of Process Development (PD).

The information presented in this section and 1.1.3 is based on internal documentation and project experience gained during my internship at Amgen.

Within Amgen Operations, the Process Development (PD) organization is responsible for drug substances, drug products and devices (for combination products).

Our project is part of the Digital Transformation team within the Combination Product Operations (CPO) department under PD, and it focuses on implementing a Digital Thread system to support product and process development.

1.3.2 Context Of Digital Transformation

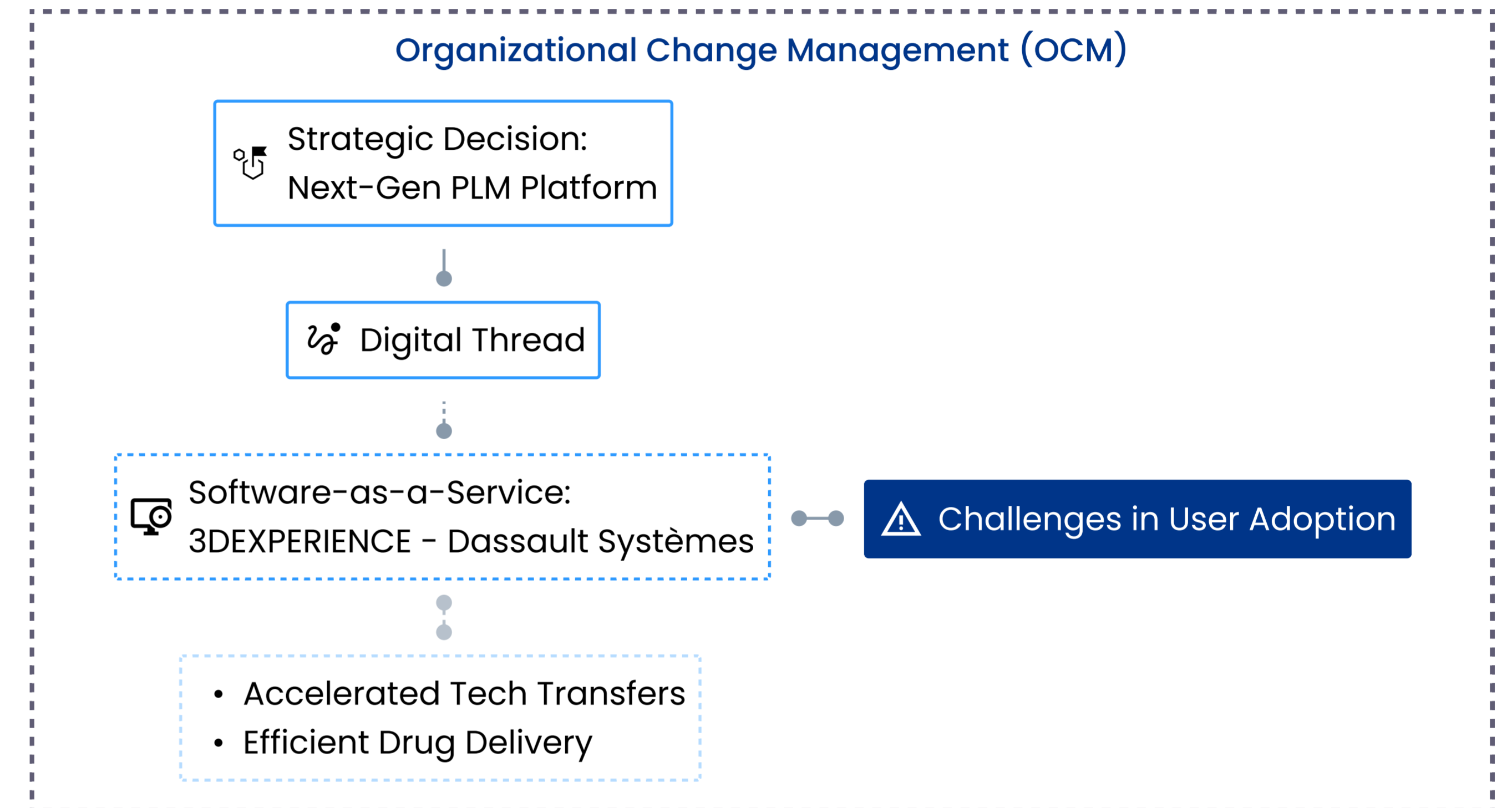


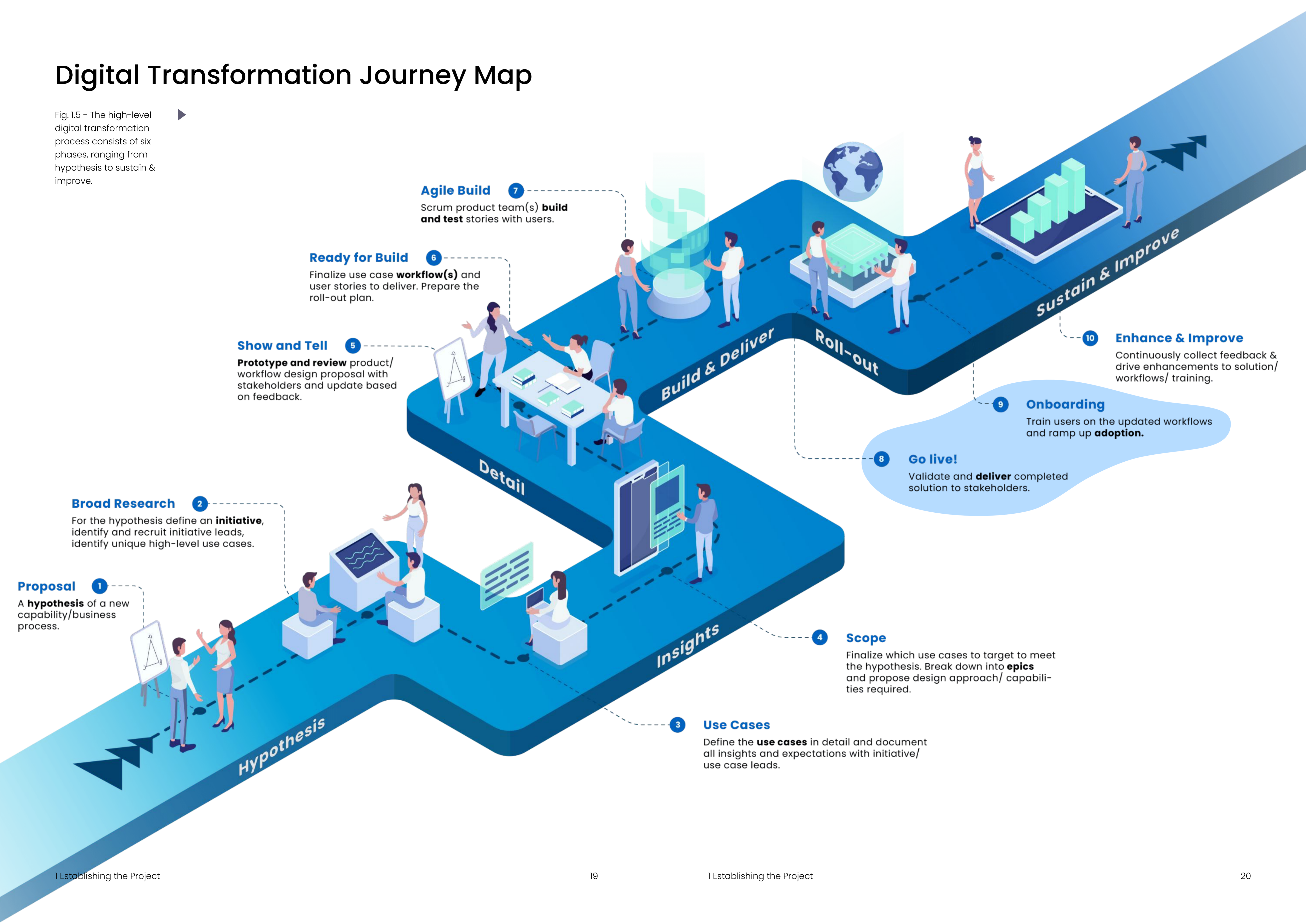
Fig. 1.4 – High-level overview of the strategic implementation of Amgen's Next-Gen PLM platform.

Amgen has made a strategic decision to implement a next-generation (Next-Gen) Product Lifecycle Management (PLM) platform to establish a digital thread for product and process development, accelerating technology transfers to achieve greater speed and efficiency in delivering drugs to patients. This solution is deployed via Dassault Systèmes' 3DEXPERIENCE platform (Systèmes, 2024), utilized by Amgen as Software-as-a-Service (SaaS).

Implementing this solution requires enterprise-wide transformation and Organizational Change Management (OCM), prompting most functions within PD to shift from a siloed, document-driven approach toward a data-driven and collaborative approach. Despite its potential benefits, the transition to the new platform has encountered challenges in user adoption and engagement, particularly during the onboarding phase.

Digital Transformation Journey Map

Fig. 1.5 - The high-level digital transformation process consists of six phases, ranging from hypothesis to sustain & improve.



1.3.3 Motivation

During my previous five-month internship at Amgen, I was part of the Digital Transformation (DT) team. My main responsibility was to visualize and map the overall digital transformation process through designing a comprehensive journey map (Fig. 1.5). This task allowed me to gain an in-depth understanding of Amgen's digital transformation efforts from hypothesis formulation all the way to sustainment and improvement.

After the internship, I became particularly interested in further exploring digital transformation, especially its implementation at the organizational and user levels. Companies face difficulties transitioning to digital platforms effectively, and Amgen is no exception.

To better understand current issues, I conducted **preliminary, exploratory interviews** with onboarding system users and support roles. These conversations revealed key perceptions, experiences, and barriers. They also helped refine my understanding of the onboarding process and identified three user groups based on digital proficiency, highlighting differing needs and expectations.

Based on these insights and considering the broader context of widespread digital transformation, I chose to concentrate my graduation project specifically on developing a user-centered onboarding framework. My aim is to create adaptive strategies and practical solutions, improving onboarding experience and facilitating smoother digital transitions within Amgen and beyond.

1.3.4 Understanding The Onboarding Experience At Amgen

To deeply understand how the onboarding leads at Amgen perceive the digital transformation and the newly implemented Next-Gen PLM platform, preliminary semi-structured interviews were planned and conducted. The aim was to reveal underlying pain points and user perspectives regarding the adoption and usability of the new platform.

Goal

To gain a deeper understanding of the onboarding experience during the transition to the Next-Gen PLM platform at Amgen. Specifically, it explores key barriers, challenges, and user needs from the perspective of both system users and onboarding leads.

Participants

To ensure early relevance and contextual understanding, preliminary interviews were conducted with two stakeholder groups:

- **System Users:** Employees directly interacting with the new platform, ranging from experienced staff familiar with legacy systems to younger employees more comfortable with new technologies.
- **Onboarding Leads:** Team leaders or coordinators responsible for facilitating onboarding activities, such as training and providing guidance.

As many onboarding leads have previously experienced the onboarding process themselves, they also provide insights from a system user perspective.

Interview Questions

For System Users:

- Can you describe your initial experience when using the new platform?
- What specific challenges or difficulties have you encountered in using the new platform?
- Which training resources or methods do you find most effective?
- How do you feel the onboarding experience could be improved to better meet your needs?

For Onboarding Support Roles:

- How do you support new users during the onboarding process?
- What are the most common issues or questions you observe among new users?
- How do you evaluate whether the onboarding resources are effective?
- What improvements do you think are necessary to better facilitate onboarding?

Based on a structured review of the interview responses, key themes were synthesized to reflect users' onboarding experiences, pain points, and support needs (Section 1.3.5). These themes serve as the basis for framing onboarding strategy opportunities in the context of digital transformation.

1.3.5 Key Interview Insights

This section summarizes key insights derived from four exploratory interviews with system users at Amgen, including three onboarding leads. A structured synthesis was used to identify recurring themes, challenges, and user needs. These findings provide a foundational understanding of the current onboarding experience during Amgen's digital transformation efforts.

1. Key Challenges

- **Onboarding Complexity:** The process is perceived as time-consuming and not sufficiently interactive. The amount of information, combined with unfamiliar workflows, overwhelms many users.
- **Resource Fragmentation:** Training resources are scattered across platforms, and guidance is often too general or too detailed, making it difficult to find the right support at the right time.

2. Barriers to Adoption

- **Lack of Contextual Support:** Training content does not always align with actual day-to-day tasks, limiting its practical relevance. Some employees prefer working in the system directly ("learning by doing"), but safe spaces to do so are limited.

3. User Needs and Individual Preferences

A key insight emerging from the interviews is the significant variation in onboarding needs based on **users' technological proficiency and previous experience**. One onboarding lead, who also self-identified as a digitally skilled user, explained that while he was comfortable exploring new tools independently, many of his team members required structured, step-by-step guidance to feel confident during the onboarding process.

This contrast highlights the need for differentiated onboarding strategies that **accommodate diverse learning preferences and digital competencies**. For instance, tech-savvy employees often prefer minimal guidance and learn better through hands-on exploration or sandbox testing. In contrast, less confident users may need more formalized onboarding structures, such as sequenced modules, explicit walkthroughs, and continuous support.

These variations form the foundation for the **user personas** developed in the next phase of this project. The personas are clustered based on users' technology familiarity, onboarding confidence, and learning preferences, serving as key inputs for the subsequent design of tailored onboarding strategies.

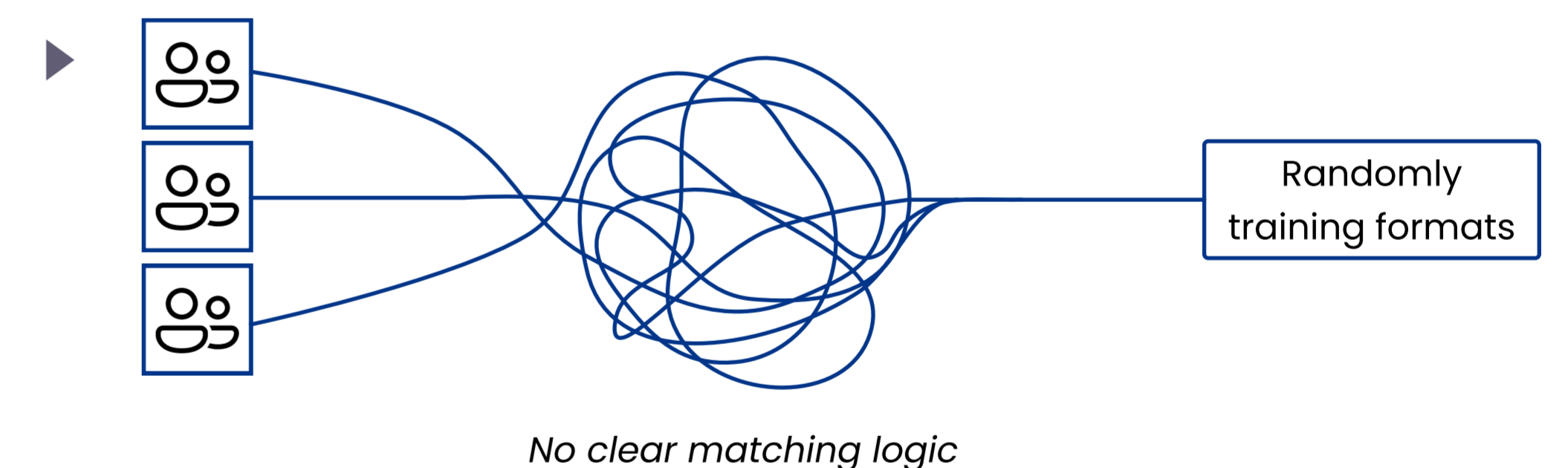
4. Current Onboarding Experience

Through the interviews, I gained a foundational understanding of the current onboarding process at Amgen, particularly in the context of the ongoing digital transformation.

While Amgen is actively trying to personalize the onboarding experience to accommodate different employee groups, current practices remain **loosely structured and inconsistently applied**.

Interviewees described the process as exploratory and ad hoc, onboarding leads often randomly choose between formats such as documentation, live sessions, or workshop, without a consistent rationale. Although the intention is clearly user-centered, there is a noticeable **disconnect between understanding user needs and knowing how to translate those needs into effective onboarding strategies**. This results in an onboarding process that is fragmented and highly dependent on individual interpretation, rather than guided by shared principles or structured frameworks.

Fig. 1.6 - Disconnect Diagram.



1.3.6 Design Context And Definition

Onboarding refers to the process of helping new hires adjust to both the social and performance aspects of their new jobs quickly and smoothly. It is widely recognized as a process rather than a one-time event, often unfolding across **multiple phases**, including pre-boarding, first day, first week, and the first three months or more. In practice, many onboarding efforts are scoped around a 1–3 month period, during which learning, adjustment, and feedback are most active (McKelvey & Frank, 2018; Spencer & Ignacio, 2023).

In this project’s context, however, onboarding is not about joining a company, but rather about **learning to navigate new enterprise digital systems introduced during organizational transformation**. It describes the process through which employees, often already in their roles, **gradually become familiar with a new system**, understand its logic, and reach the point where they can use it confidently and effectively in daily work.

Stakeholder Role Map: Defining the Design Focus

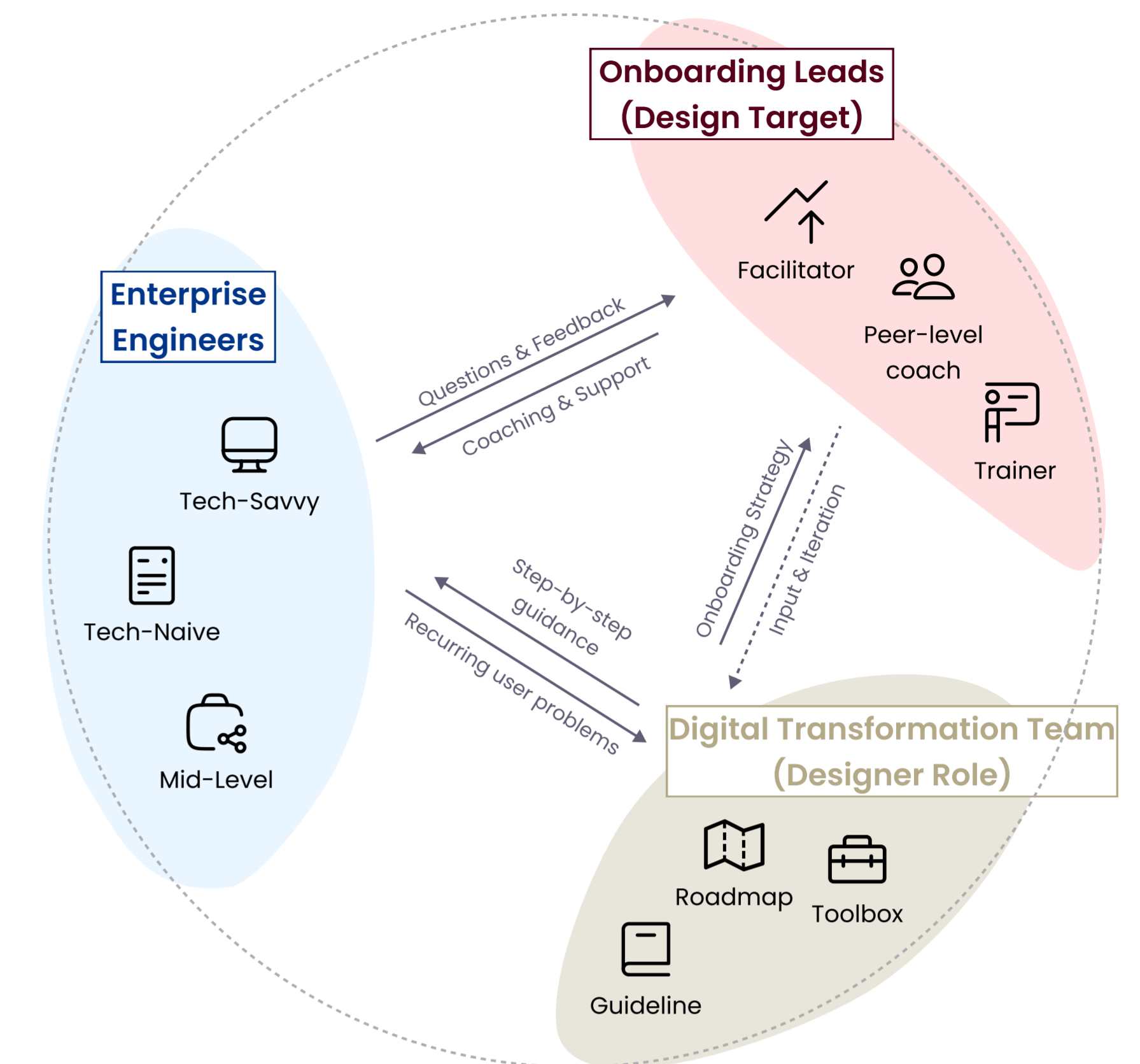
This diagram serves to position the design focus within Amgen’s onboarding ecosystem by mapping out the roles of three key stakeholder groups:

1. **System Users:** the users navigating new systems introduced during digital transformation.
2. **Onboarding Leads:** the actors responsible for translating system changes into onboarding strategies tailored to different user groups.
3. **Digital Transformation Team:** the team (including the researcher/designer) tasked with developing tools to support the creation of onboarding strategies.

While all three groups interact throughout the onboarding process, this project centers on supporting **onboarding leads**, who are uniquely positioned to **translate diverse user needs into tailored onboarding strategies**.

By visualizing how needs, feedback, and tools circulate among these roles, this map clarifies why onboarding leads are the main recipients of the design outcome, and how the resulting onboarding framework will fit into the broader support ecosystem.

Fig. 1.7 – Stakeholder Role Map: Positioning the Design Focus.



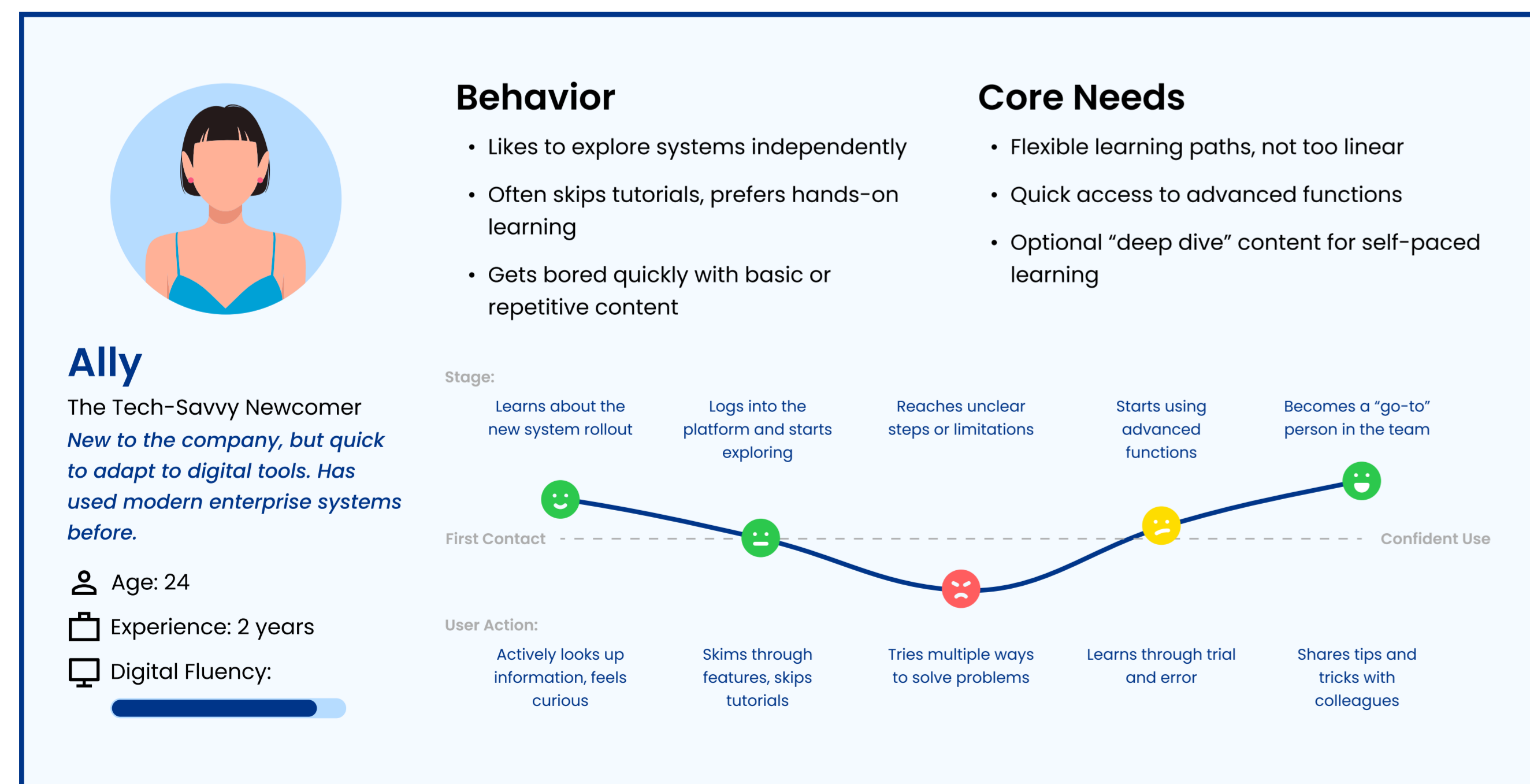
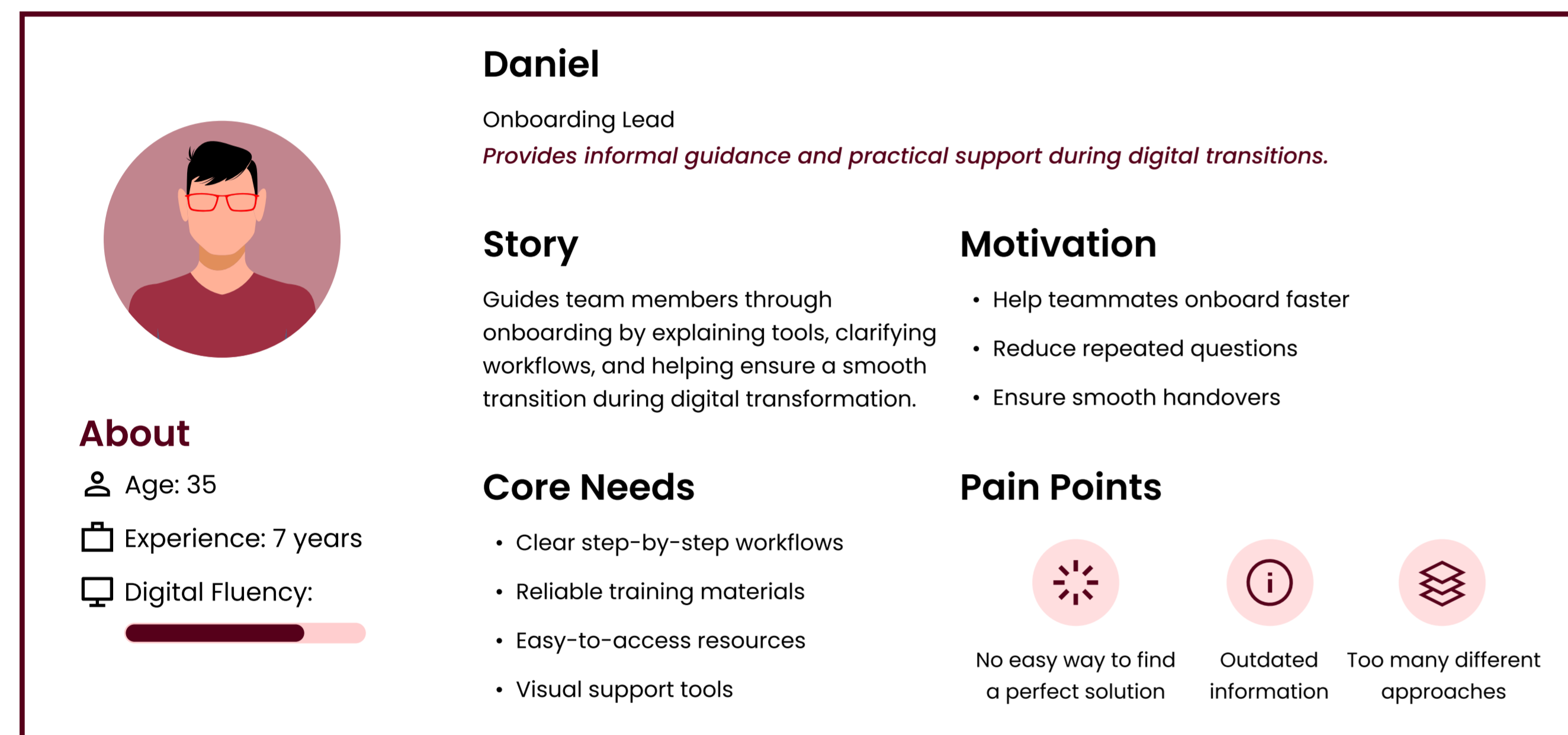
1.4 Design Goal

1.4.1 User Personas

To ensure the onboarding framework meets real user needs, two types of personas were created: **primary** and **supporting**.

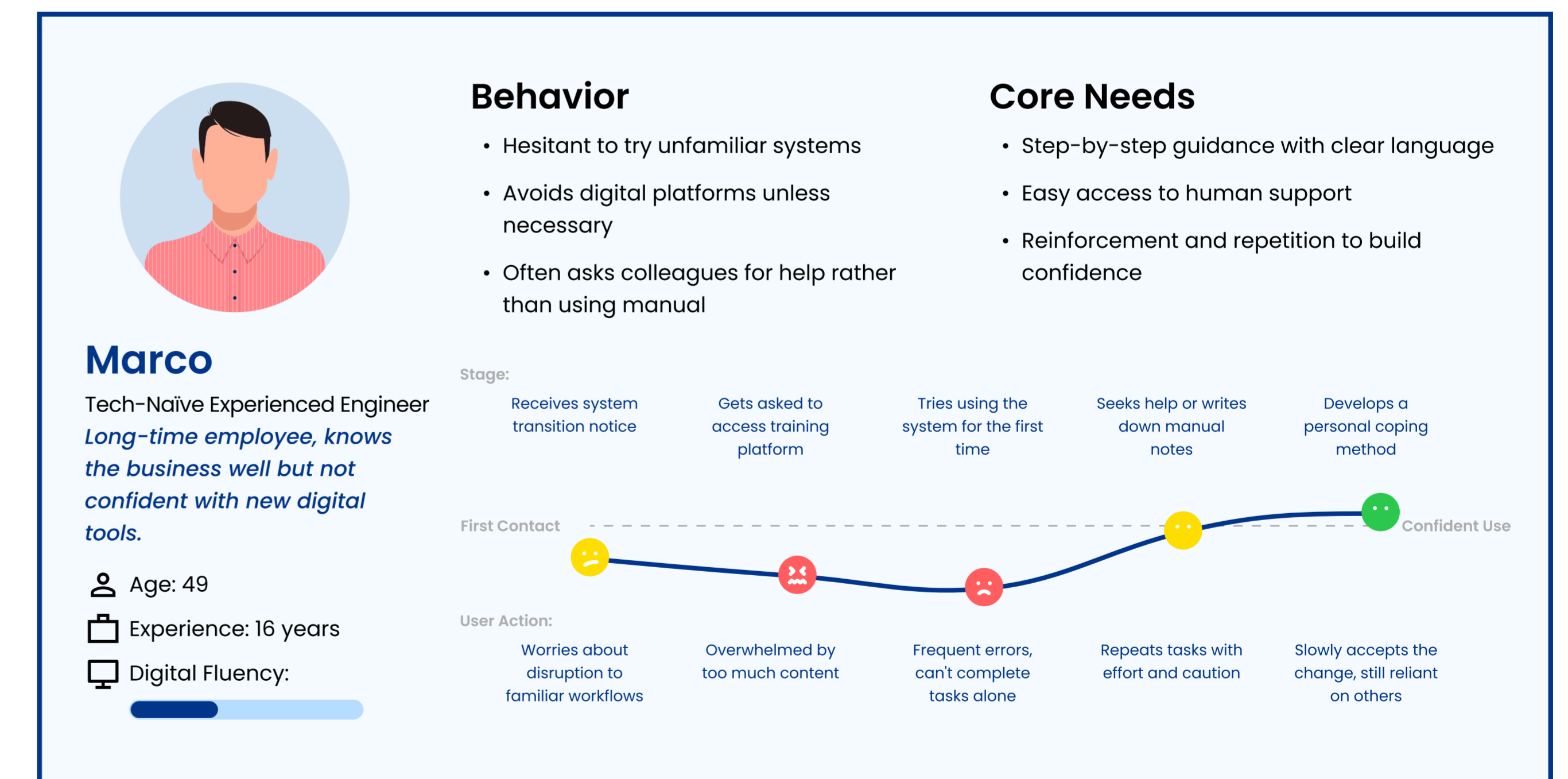
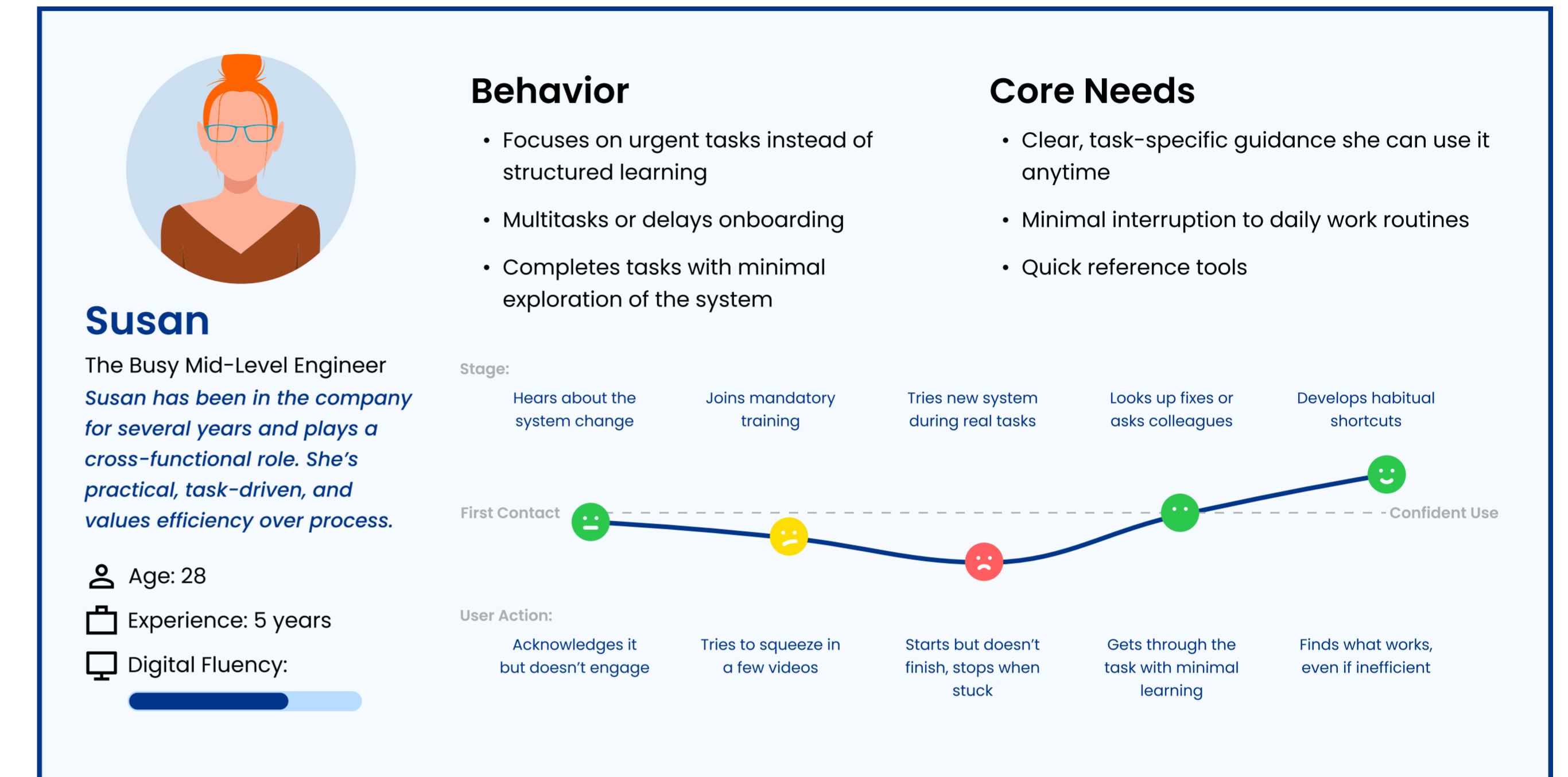
The primary persona of this project is the **Onboarding Lead**, who plays a central role in delivering onboarding strategies. As the key recipient of the final framework, this persona represents those responsible for guiding others through digital transitions by translating requirements into tailored onboarding approaches.

Fig. 1.8 - Primary Persona - Onboarding Lead.



On the following pages, three supporting personas are introduced to represent different types of **System Users**. These personas follow the primary persona (Onboarding Lead), and reflect the diversity of digital fluency, behavior, and learning preferences observed during onboarding. While not the direct users of the design outcome, they shape its logic by influencing how onboarding strategies should be customized.

Fig. 1.9 - Supporting Personas - System User Types.



1.4.2 5WIH

To clearly define the project direction, the 5WIH method is used to break down the core problem into six key questions: What, Why, Who, Where, When, and How. This approach, often used in design research and strategy, helps make complex issues easier to understand (Goradia, 2021).

What? To design an onboarding guideline that enables onboarding leads to generate personalized onboarding methods by using a six-dimensional coding system to match diverse employee profiles with suitable strategies.

Why? Enterprise users often struggle to adapt to new systems due to unclear guidance and one-size-fits-all onboarding approaches. This limits digital adoption and slows down transformation. A structured and extensible framework is needed to help onboarding leads address diverse learning preferences and ensure smoother transitions.

Who? The guideline primarily targets onboarding leads, who act as peer coaches or informal trainers during digital transitions. They are responsible for creating onboarding plans.

Where? The solution is embedded within Amgen's digital transformation program but is designed to be generalizable across departments and applicable to other organizations undergoing similar transitions.

When? The focus is on the post-go-live phase, when system rollout occurs and users need to adopt new tools quickly and confidently.

How? The Guideline is developed using user-centered design, informed by internal research, user interviews, onboarding observations, and stakeholder feedback.

Note: While the specific form of the deliverable was finalized as a guideline in later stages, this section introduces the design focus and intent.

Design An Onboarding Guideline That Enables Onboarding Leads Generate Suitable Onboarding Methods Based On Employee Profiles.

1.5 Project Approach

1.5.1 Research Scope

This project is embedded within the broader context of Amgen's enterprise-wide digital transformation, which spans six interconnected phases. Instead of covering the entire journey, this project narrows its focus to the **rollout phase**, the point where new tools are delivered to users and onboarding becomes essential (see Fig. 1.5). This stage includes go-live execution and early-stage support, and often determines whether the transformation gains real traction within teams.

In such a large and complex organization, onboarding during digital transitions involves various stakeholders, from platform owners to end users. However, this project specifically focuses on the onboarding support process, exploring how **onboarding leads** help others navigate changes. To reflect different user contexts and needs, the study also incorporates multiple system user types based on their digital fluency and experience.

Rather than addressing technical upgrades such as interface redesign or system optimization, this project explores how enterprise employees prefer to be onboarded during digital transformation, which onboarding methods are perceived as effective, and how onboarding leads can tailor strategies to fit user preferences.

The aim is to develop a flexible and user-centered onboarding **guideline** that addresses behavioral and contextual needs across different employee profiles. While grounded in Amgen's internal context, the outcome aspires to hold broader relevance for similar enterprise environments.

Although interview groupings were initially based on digital fluency, the findings showed that this dimension alone could not fully explain employees' onboarding needs. As the study progressed, a new framework with six behavioral and contextual traits was introduced to better capture the differences in user preferences and learning styles (see Chapter 4).

1.5.2 Methods Used

To build a grounded understanding of the onboarding challenges during the digital transformation rollout, this project combines several complementary research and design approaches. These methods help uncover recurring issues, clarify what users need during onboarding, and spark ideas for potential solutions.

Desk Research:

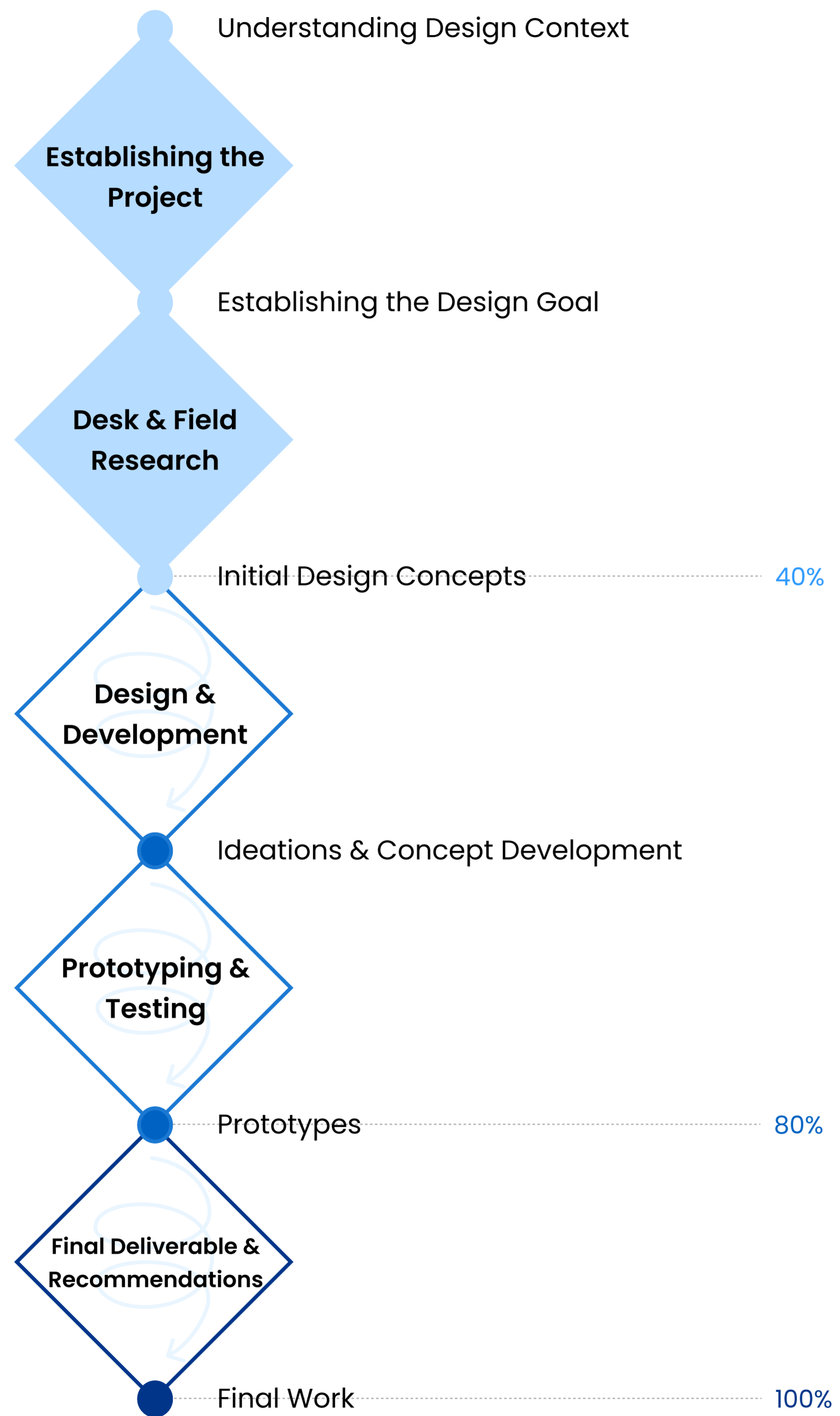
A combined review of literature and case studies was conducted to explore effective onboarding approaches in the context of digital transformation. Academic sources helped establish the theoretical foundation, while real-world onboarding practices from other companies provided practical references. These cases were analyzed to identify commonly used onboarding methods and understand why certain strategies work well in enterprise settings.

Field Research:

Interviews were conducted with employees and onboarding stakeholders to better understand individual onboarding preferences, current challenges, and expectations. The analysis focused on identifying key user concerns and recurring patterns that could inform design. While the interview data offered many secondary insights (included in the Appendix), only the most relevant themes were brought into the main design process.

Prototyping & Testing:

Based on the research findings, early concepts of the onboarding guideline were developed and iteratively refined. The goal of this phase was to **narrow down appropriate formats for delivering the guideline and evaluate its clarity, usability, and relevance**. Testing methods included scenario-based walkthroughs, peer feedback sessions, and task-driven evaluations.



2. Desk Research

This chapter establishes a foundational understanding of enterprise onboarding during digital transformation. By analyzing academic literature and case-based industry examples, the study first identified existing onboarding strategies and examined why and under what conditions they are effective. The research then shifted from a rigid categorization of methods to a function-oriented clustering approach, highlighting the high degree of method integration observed in practice. The outcome of this phase is a consolidated method pool with contextual insights, which forms the basis for designing a flexible onboarding guideline tailored to diverse employee profiles.

2.1 Purpose & Value

Before conducting fieldwork and engaging directly with users, this project first builds a foundational understanding of how onboarding is approached during enterprise system transformations. Instead of focusing on individual users' experiences, this phase emphasized the organizational perspective, aiming not only to identify onboarding methods adopted by companies, **but also to derive strategic patterns from how these methods are applied in context.**

1. **What** onboarding methods companies adopt.
2. **Why** these methods are selected.
3. **Under What** conditions they are considered effective.

This research phase aimed to identify not only the onboarding methods used, but also their timeline, delivery model, and contextual conditions. Through analyzing both academic sources and case-based industry examples, the goal was to extract **method-level patterns** that could inform the design of a flexible onboarding guideline.

The purpose of desk research in this project is twofold:

1. To investigate how enterprises structure onboarding strategies to support employee adoption during system changes.
2. To extract insights into how onboarding methods are effectively applied under varying organizational conditions, informing the formulation of modular onboarding strategies in later stages of the project.

*Note: At this stage, onboarding methods were understood as **strategic formats or delivery models used to support learning and adaptation.** These categories were not drawn directly from theory, but instead represent designerly abstractions developed through **synthesis of multiple case-based observations.** The distinction between higher-level methods and specific mechanisms of implementation was clarified in later testing stages (see Chapter 4).*

2.2 Observing Enterprise Onboarding Approaches

This section explores how onboarding and enablement are approached in enterprise software adoption. It focuses on three aspects:

- Common onboarding workflows
- Why certain companies choose specific onboarding strategies
- Shared methods and gaps across different industry cases

To structure the analysis, this project introduces three method types: task-based onboarding, practice-based onboarding, and structured social onboarding. These are not predefined categories from existing theories, but **a way to group patterns observed across industry cases and literature.** For example, Spencer and Ignacio (2023) reviewed onboarding practices in agile teams and summarized a wide range of techniques including task assignment, the use of digital tools for onboarding support, and social integration.

2.2.1 Case-Based Analysis Of Onboarding Strategies

Although the definition of onboarding was introduced in Chapter 1 (Section 1.3.6), it is important to clarify that the focus here is on onboarding existing employees to new enterprise digital systems during organizational transformation, rather than onboarding new hires into an organization. While the contexts differ, prior research has demonstrated significant similarities in the underlying mechanisms of learning, adaptation, and behavioral change.

Organizational Socialization Theory (Bauer et al., 1998) explains how individuals adapt to new organizational environments by progressively acquiring knowledge, developing skills, and building social connections.

While originally developed for new employee integration, this framework provides valuable parallels to system onboarding. In both cases, individuals are introduced to unfamiliar organizational contexts, and must adapt to new roles, expectations, and workflows. Therefore, this theory was adapted as a reference point for this project, acknowledging its explanatory value in situations where employees are asked to re-orient within transformed digital environments (May & Finch, 2009; Flanagin & Waldeck, 2004).

This interpretive extension is not drawn directly from literature, but represents a designerly abstraction based on the shared learning mechanisms and adaptation challenges observed in both domains.

Similarly, the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) describes how individuals adopt new technologies. It emphasizes factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions. Technology adoption is seen as a gradual process of learning and adjustment, which parallels the process of adapting to new enterprise systems (Morris & Venkatesh, 2010).

Building on these theoretical foundations, this section adopts a case-based approach to analyze three representative industry cases. Each case illustrates a different onboarding strategy: task-based onboarding at Microsoft, content-based onboarding at IBM, and structured social onboarding at Spotify.

The analysis of each case was conducted in two steps:

1. **Identification of the onboarding method(s)** used, focusing on timeline, delivery format, and structural features;
2. **Extraction of contextual insights** through side-by-side comparison of when and why each method was applied.

These insights were presented in a pair of matrices for each case: one listing the methods used, and another detailing why each method proved useful in context. It was further observed that enterprises often employ **hybrid onboarding approaches**, integrating elements from multiple strategies rather than adhering to a single, uniform model. To support cross-case comparison or to derive modular design elements, this prompted the creation of an integrated method cluster list, aggregating commonly used onboarding methods across all cases, regardless of original classification.

Note: At this stage, the research focused on identifying onboarding methods as strategic formats. Mechanisms, concrete actions or tools supporting these formats, were not distinguished separately until later prototyping phases, when the need for further granularity became evident.

a. Task-based onboarding

Task-based onboarding is a prevalent strategy in software and enterprise environments, especially for facilitating skill acquisition and practical learning, where newcomers acquire knowledge and familiarity primarily through engagement in real project tasks. This subsection presents a case study conducted within Microsoft, examining how task assignments are utilized not only to deliver outcomes but also to facilitate learning, build confidence, and support social integration among developers. The analysis draws on qualitative interviews and survey data collected from Microsoft engineering teams (Ju et al., 2021). The analysis is organized around four aspects: core features, timeline, key mechanisms, and suitable scenarios.

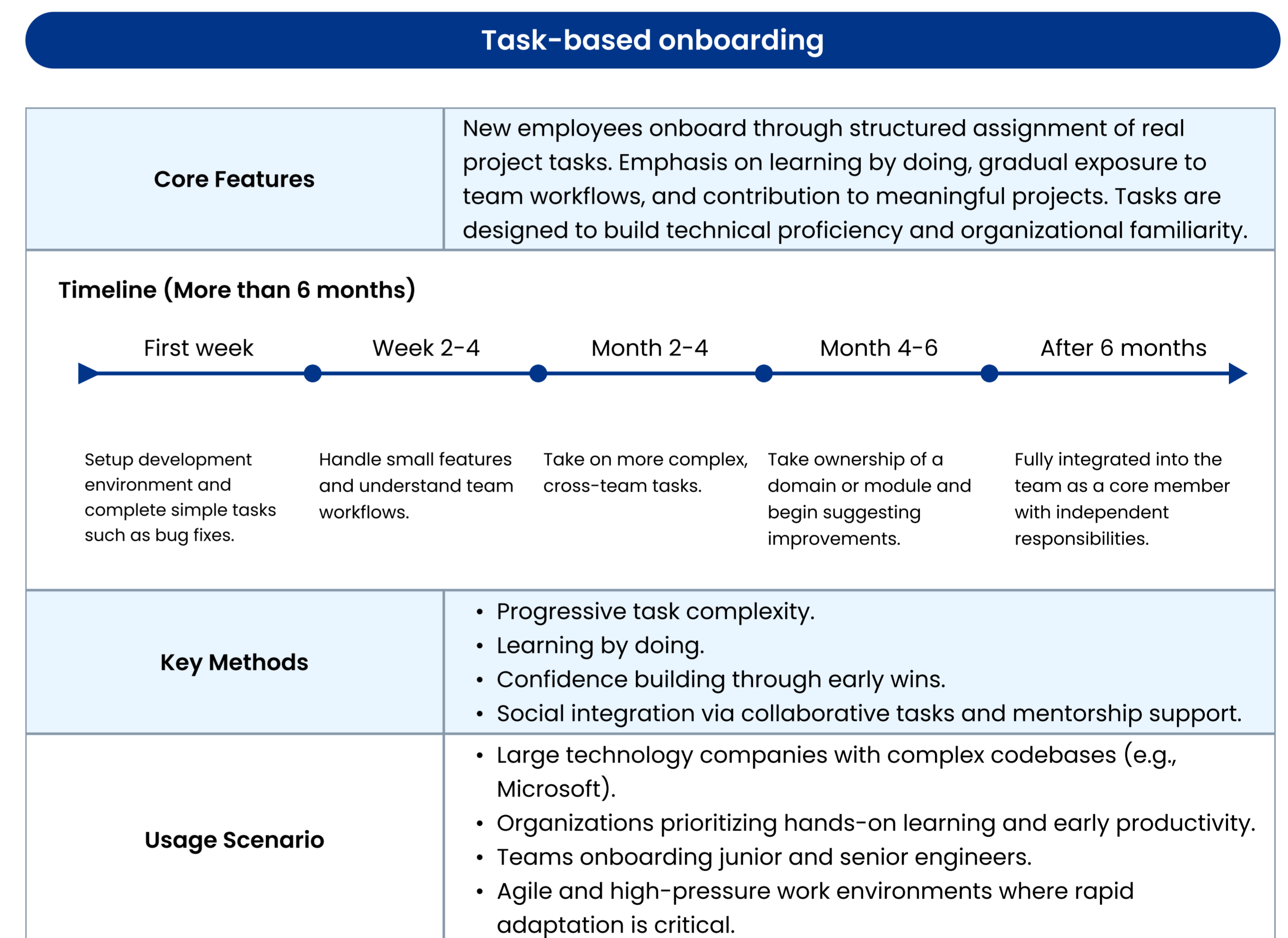


Fig. 2.1 - Task-driven onboarding process analysis form.

▲ This structured analysis provided a general understanding of how task-based onboarding unfolds over time, especially in large technology companies. However, beyond process timelines and surface features, further exploration was needed to understand why these methods were effective in specific organizational contexts, which led to the next stage of analysis.

To better understand why different companies adopt one or more onboarding methods as part of their enablement strategy, and why these methods are considered effective in context, I examined three company cases: Microsoft (Ju et al., 2021), Google (Johnson and Senges, 2009), and IBM (Qin and Kochan, 2020; Stoiber, 2022). These companies were selected because they each adopted task-driven onboarding techniques to support employee engagement, skill development, or productivity.

As shown in the table (2.3), the left column lists specific onboarding measures implemented by each company, while the right column presents original quotes from the literature explaining why these methods were chosen.

A key insight emerged during this process:

Companies rarely rely on a single onboarding method. Instead, they often **adopt hybrid strategies**, combining multiple formats to suit their organizational needs. For example, while Microsoft adopted task assignment as one of the method, it also incorporated features of structured social onboarding. To reflect this overlap, I used blended color schemes in the visualization of task-based onboarding to indicate the integration of multiple strategies within the same case. To reflect such blending, the visualization in the following matrix adopts blended color indicators to signal the presence of multiple strategic patterns within the same onboarding process.

(e.g. ● + ● = ●)

*Note: The visualizations and analysis for the other two onboarding strategies, content-based and structured social, are included in the **Appendix 3 & 4**. While they supported the exploration of method diversity, the following synthesis no longer relies on these predefined categories, but instead adopts a reorganized method cluster framework for design application.*

Tab. 2.3 - Task-based onboarding analysis Form. ▶

Task-based onboarding	
Microsoft: Software teams	
Method	Why useful?
Real task-based onboarding	"Newcomers in software engineering teams learn technical and organizational knowledge effectively through active participation in real tasks, as opposed to passive observation." "Working on real tasks with team members fosters opportunities for socialization and collaboration, critical components of successful onboarding."
learning by doing	"Task assignment enables balancing between integrating newcomers and maintaining team productivity."
Progressive tasks	"Early small wins through simple tasks build confidence, which is critical for subsequent engagement and integration."
Task assignment	"Task assignment enables balancing between integrating newcomers and maintaining team productivity."
Google: Software engineers	
Method	Why useful?
Simple tasks at beginning	"The first project assigned to new software engineers is called a 'starter project'. The project is supposed to be short (around two weeks) and be a good introduction into a specialized field."
Codewalks (Real tasks guide)	"Codewalks... trace through examples of technology use in the real code base."
Step-by-step, hands-on online tutorials	"These are classic hands-on tutorials in which the learner follows step-by-step instructions to solve a given task using proprietary Google technologies. The important aspect here is that the learner actually gets to use the technologies directly."
Role model identification	"Newly hired engineers should identify successful engineers who have extensive experience of 'working (in) the system' and copy their behavior. For this purpose, a list of the most productive and influential software engineers is available on the intranet."
Weekly Snippets & OKRs	"Weekly Snippets. An application that allows each employee to write a very short (bullet point) report about what he or she did during the last seven days. Objectives and Key Results (OKRs). A practice that encourages Googlers to set measurable objectives."
IBM	
Method	Why useful?
Learning Badge	"A learning badge is awarded after completion of designated, usually assessed, learning activities." "Skill badges are associated with hands-on application of concepts and theory. The focus of learning assessments for skill badges is on effective application of the subject matter."
Your Learning Online platform	"The 'one stop' Your Learning platform covers all the key stages in an employee's learning journey, from setting up learning goals and selecting which learning activities to engage in, to monitoring learning progress and recording learning outcomes."
AI-based personalization and nudging	"The most recent development includes a new application aimed to further boost individual learning activities through offering personalized 'nudging' and social learning."

2.2.2 From Categorization To Clustering: A Shift In Research Perspective

As the research progressed, it became increasingly evident that the initial three-part classification: task-based, content-based, and structured social, **could not adequately support the intended design goal:**

1. Onboarding practices observed across real-world cases revealed **high degrees of method integration**, making rigid categorization less effective for synthesis.
2. Design goal is to develop a modular onboarding guideline that adapts to diverse user profiles, rather than assigning users into fixed strategic formats. These findings led me to reconsider the analytical framework.

Before fully shifting toward a function-based clustering approach, I first observed that **many companies adopted similar onboarding techniques under different names**. To better understand these overlaps and shared functions, I **used the original three categories as a reference to construct a transitional Venn diagram** (Fig. 2.4). This visualization allowed me to group functionally similar methods, despite differences in naming or origin, into unified method labels such as Real Task or Team Integration.

These regrouped labels served as the foundation for the next step, in which I analyzed each method cluster based on its **contextual role** and **specific effectiveness in different organizational settings**. The result is a set of **function-oriented onboarding clusters**, presented in the summary table on the next page.

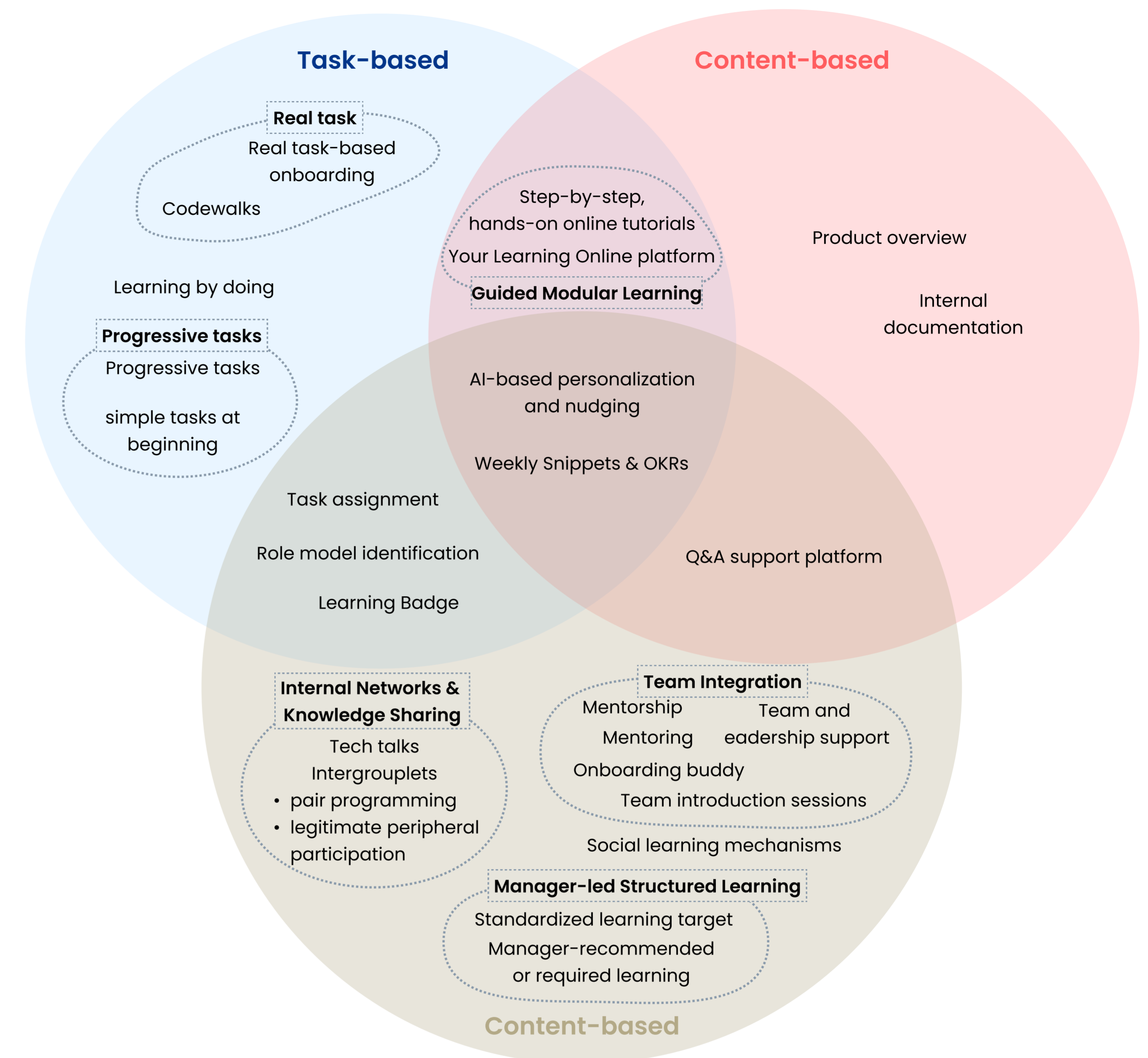


Fig. 2.4 - Transitional Venn Diagram of Onboarding Method Overlaps.

Onboarding Method/Cluster	Contextual Insight
---------------------------	--------------------

Real Task	Helps newcomers develop technical familiarity and social belonging simultaneously, especially effective in engineering teams where onboarding is deeply embedded in production work.
Learning by Doing	Offers a hands-on entry into team practices while maintaining team productivity, suitable for fast-moving environments with limited time for structured training.
Progressive Task	Builds confidence through increasing task complexity, ideal for roles that require gradual knowledge layering or long-term ramp-up.
Product Overview	Gives newcomers a sense of the bigger picture, useful for cross-functional teams or roles not directly involved in product development.
Internal Documentation	Facilitates asynchronous onboarding and reduces bottlenecks, effective in mature teams or global teams operating across time zones.
Task Assignment	Enables learning through contribution, giving newcomers responsibility in a way that promotes autonomy and engagement without overloading.
Role Model Identification	Helps new employees align their behavior and expectations by observing experienced peers, particularly useful in flat or flexible team structures.
Learning Badge	Formalizes and motivates skill development, especially suited to large organizations that require scalable validation of learning outcomes.
Guided Modular Learning	Provides guided orientation to complex systems and supports personalized pacing and path selection.
Q&A Support Platform	Fosters peer collaboration and self-service learning through informal question exchanges, useful in fast-scaling teams with dynamic issues.
AI-based Personalization and Nudging	Offers automated, adaptive learning suggestions and micro-supports, particularly helpful for distributed teams or environments with limited mentorship resources.
Weekly Snippets & OKRs	Encourages self-reflection and outcome-driven learning by asking employees to report and reflect weekly, reinforcing accountability and progress.
Team Integration	Reinforces emotional safety and inclusion through consistent team support, especially impactful in remote or cross-cultural settings.
Social Learning Mechanisms	Builds informal knowledge exchange and social reinforcement, suitable for open knowledge environments and collaborative teams.
Manager-led Structured Learning	Ensures alignment with organizational goals and compliance standards, effective for regulated industries or performance-monitored roles.
Internal Networks & Knowledge Sharing	Promotes cross-team knowledge circulation and practice sharing, especially beneficial in large or agile organizations that emphasize learning culture.

Tab. 2.5 – Contextual insights mapped to clustered onboarding methods.

This table summarizes **contextual insights** for each identified onboarding method or cluster. By comparing their functional roles and situational benefits, it reveals **how different techniques align with specific organizational needs**. While grounded in existing literature, these interpretations are developed through cross-case comparison and synthesis, forming a foundation for subsequent design phases.

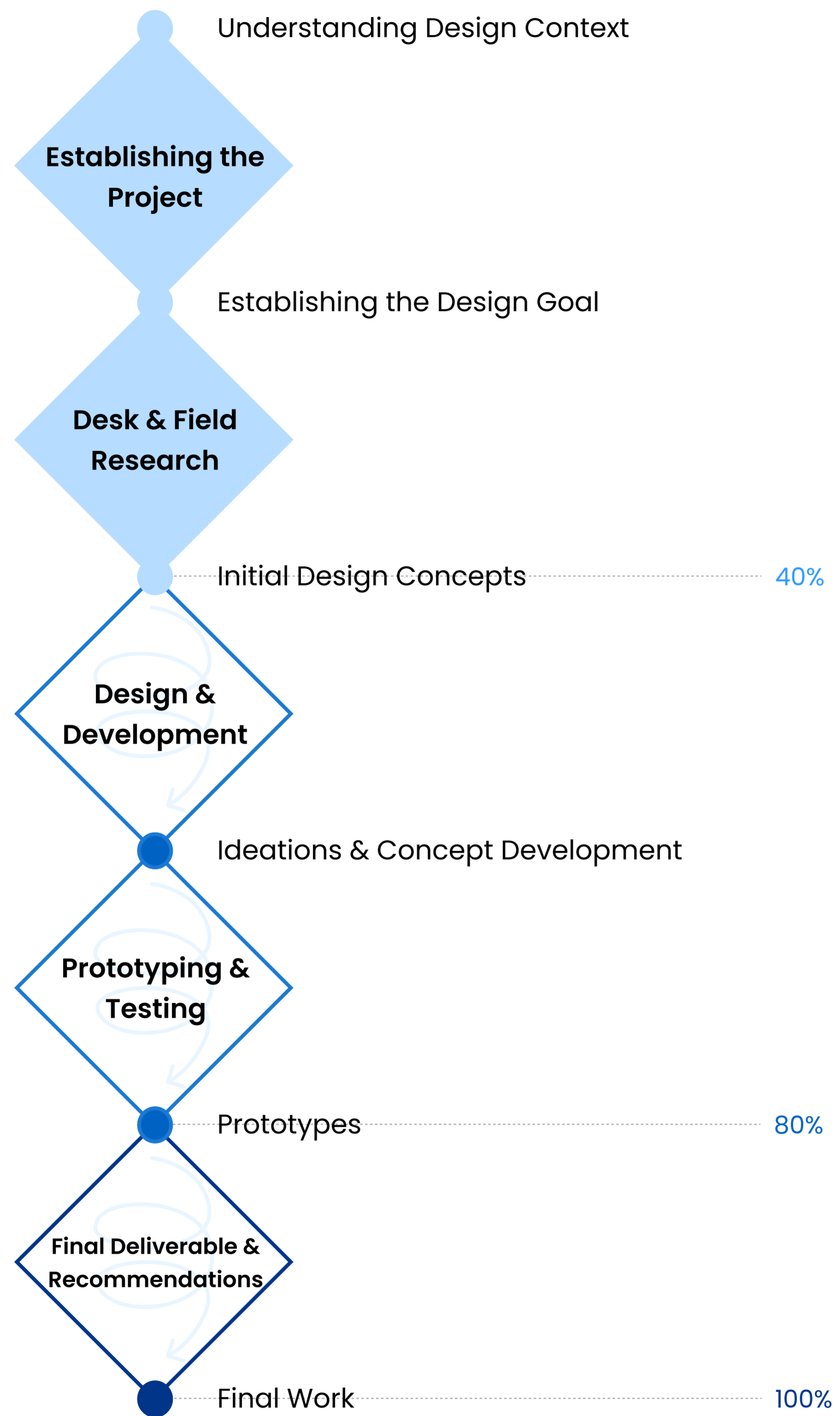
2.3 Chapter Summary

This section marked a methodological shift from framework-based categorization (task-based, content-based, structured social) to **function-oriented clustering of onboarding practices**. Through a comparative mapping process and Venn diagram analysis, onboarding methods were reorganized into a **clustered method pool** based on shared functions and contextual effectiveness. This transition not only accommodated the high degree of method integration observed in practice, but also better aligned with the project’s design goal: enabling modular onboarding strategies tailored to individual employee profiles.

A key insight emerging from this synthesis is that certain onboarding methods, such as learning by doing, tend to **perform particularly well in specific organizational environments**, for example, those that are fast-paced or execution-driven.

Next Step: Field research

To explore whether similar patterns exist at the **individual level**, the next chapter turns to field research. This phase builds on the three personas introduced in Chapter 1, which were defined based on employees’ digital experience levels. The study will examine whether individuals with **different backgrounds and work histories** exhibit distinct **onboarding preferences**, and how their actual onboarding experiences relate to the methods identified in this analysis.



3. Field Research

This chapter reports the field research conducted to capture employees' real onboarding experiences during digital transformation. Building on the structured understanding from desk research, this phase used semi-structured interviews with system users to uncover hidden frictions, emotional dynamics, and support needs. The collected data were analyzed through hybrid coding, combining deductive theory-driven categories with inductive pattern recognition. The findings provide nuanced insights into learning, confidence, social interaction, and individual differences, forming a practical foundation for developing the onboarding guideline.

3.1 Research Setup

3.1.1 Research Rationale And Methods

While the desk research in Chapter 2 offered a structured understanding of common onboarding practices and frameworks, it also revealed a critical limitation: **onboarding strategies for digital system adoption are often highly context-specific and emotionally nuanced**. Standardized models may suggest best practices, but they rarely capture how individual employees actually navigate these processes in the messiness of real-world organizational life. Literature such as Ju et al. (2021) and Spencer & Ignacio (2023) emphasizes that factors like task complexity, mentorship availability, organizational culture, and role ambiguity significantly shape onboarding outcomes in unpredictable ways.

To move beyond theoretical abstraction and ensure that my design directions are grounded in authentic user needs, I conducted a qualitative field research focused on employees' lived onboarding experiences during enterprise system migrations. This study aims to uncover not just what onboarding methods were used, but how they were received, interpreted, and adapted in practice.

I adopted **semi-structured interviews** as the primary method. This format allowed for open-ended yet focused discussions that surfaced both task-related reflections and emotional or interpersonal dynamics. By exploring how individuals made sense of onboarding content, processes, and social interactions, I was able to gain a richer understanding of the invisible frictions and coping strategies that shaped their transitions.

For data analysis, I applied **a hybrid coding strategy** that blends deductive theory with inductive pattern recognition. The process involved five stages:

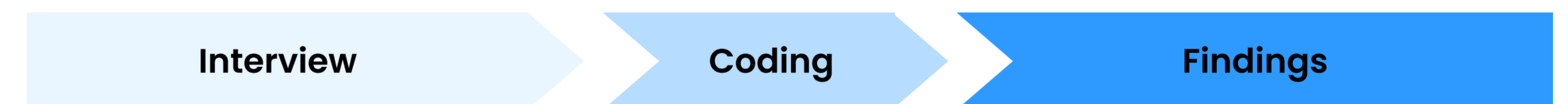
- 1. Initial Coding:** I conducted a preliminary review of the transcripts to familiarize myself with the information.
- 2. Line-by-Line Coding:** Each transcript was then coded line by line to ensure fine-grained attention to meaning, context, and emerging patterns.

3. Iterative Development Using Hybrid Coding: The coding process was guided by a hybrid approach. Deductive codes were drawn from Ju et al. (2021), who identified three key themes (**Individual Development**) in onboarding: **learning, confidence building and social interaction**. These provided a theoretical starting point. During the analysis process, new themes or potential points of opportunity were identified by open coding based on what was recurring in the interviewees' expressions but did not fall within the predefined framework.

4. Theme Combination: After iterative analysis, three additional themes (**Individual Differences**) were added to support emerging findings: **personality, emotion and cognition**. These reflected responses about internal states and structural onboarding approaches, and helped contextualize how onboarding was shaped over time.

5. Insight Prioritization and Design Relevance Check: In the final stage of coding, insights across themes were re-evaluated for their design implications. Insights considered closely tied to onboarding friction points were highlighted as key insights in preparation for the subsequent concept development phase.

This fieldwork plays a critical role in the overall design process. By anchoring subsequent concept development in both theoretical insight and firsthand experience, it ensures that the resulting onboarding guideline is not only conceptually sound but also practically responsive to the realities of digital transformation.



3.1.2 Participant Profile And Procedure

This study involved five participants who had directly experienced onboarding during enterprise system transitions. The **primary research focus was on system users:** employees who represent the target users of newly implemented digital systems. These participants were selected to reflect a range of digital fluency levels, onboarding exposures, and job scopes, in alignment with the personas developed earlier in the project.

Among the 5 participants, three were internal employees at Amgen (working in R&D and Operations-related functions), and two were from external companies undergoing similar digital transformation processes. Notably, two of the Amgen participants also held onboarding-related responsibilities, acting as informal or formal onboarding leads within their teams. While their dual roles provided useful contextual insight into onboarding design and delivery, the study's main analytical lens remained focused on **their experiences as system users navigating new digital environments.**

All participants were selected based on a key inclusion criterion: **having direct experience transitioned from a legacy system to a newly implemented digital platform.** This ensured that each interviewee could provide firsthand reflections on their onboarding journey during a period of technological change.

Recruitment was conducted through internal referrals and professional networks. Informed consent was obtained from all participants. Ethical approval for this research was granted by the TU Delft Human Research Ethics Committee as well as Amgen's internal governance process.

A detailed breakdown of the interview steps, setup, and tools used is provided in *Appendix 5*.

3.1.3 Research Question

To answer these questions, open-ended interviews were conducted using a flexible guide organized around six core topics. Each topic was designed to elicit detailed reflections on a specific dimension of the onboarding experience, including learning, support, social interaction, confidence, and long-term adoption. This structure allowed participants to describe their personal journeys in depth while ensuring comprehensive coverage of key areas that influence onboarding effectiveness from a system user's perspective.

Tab. 3.1 - A table shows the list of research questions.

Table 3.1 summarizes the mapping between each research topic and its corresponding open-ended questions.

Research Topic	Open-ended questions
How do employees first experience onboarding and initial support?	Do you remember what it was like when you first started using the new system? What kind of support or guidance did you receive at that point? What was the very first thing you remember being asked to do?
How do employees figure out how to use new systems during onboarding?	What helped you most when trying to understand how the system works? Did you use any materials like tutorials, videos, or documents? How useful were they? Were there any moments you felt stuck or unsure? What helped you get through them?
What kind of peer or team support do employees rely on?	Did anyone guide you or help you during your onboarding? If yes, how? How easy or hard was it to reach out for help when needed? At what point did you feel like you could use the system naturally, or work with others without needing extra help?
Which onboarding experiences do employees find most helpful?	Looking back, was there anything that really helped you get started with the new system or tools? Based on how you were onboarded, would you say it was more task-driven, content-based, or social in nature? Or was it something else entirely? Was there anything that confused you or didn't work well in the onboarding? If you could redo one part of your onboarding to make it better, which part would it be?
How do employees continue to receive help after initial onboarding?	After the first few days or weeks, did you still get any support when needed? If you ran into issues later, what did you usually do, ask for help, look things up, or manage on your own?
What could improve the onboarding experience?	What's something that really worked and should definitely stay? If you could give advice to the person designing onboarding for this system, what would it be?

3.2 Analysis

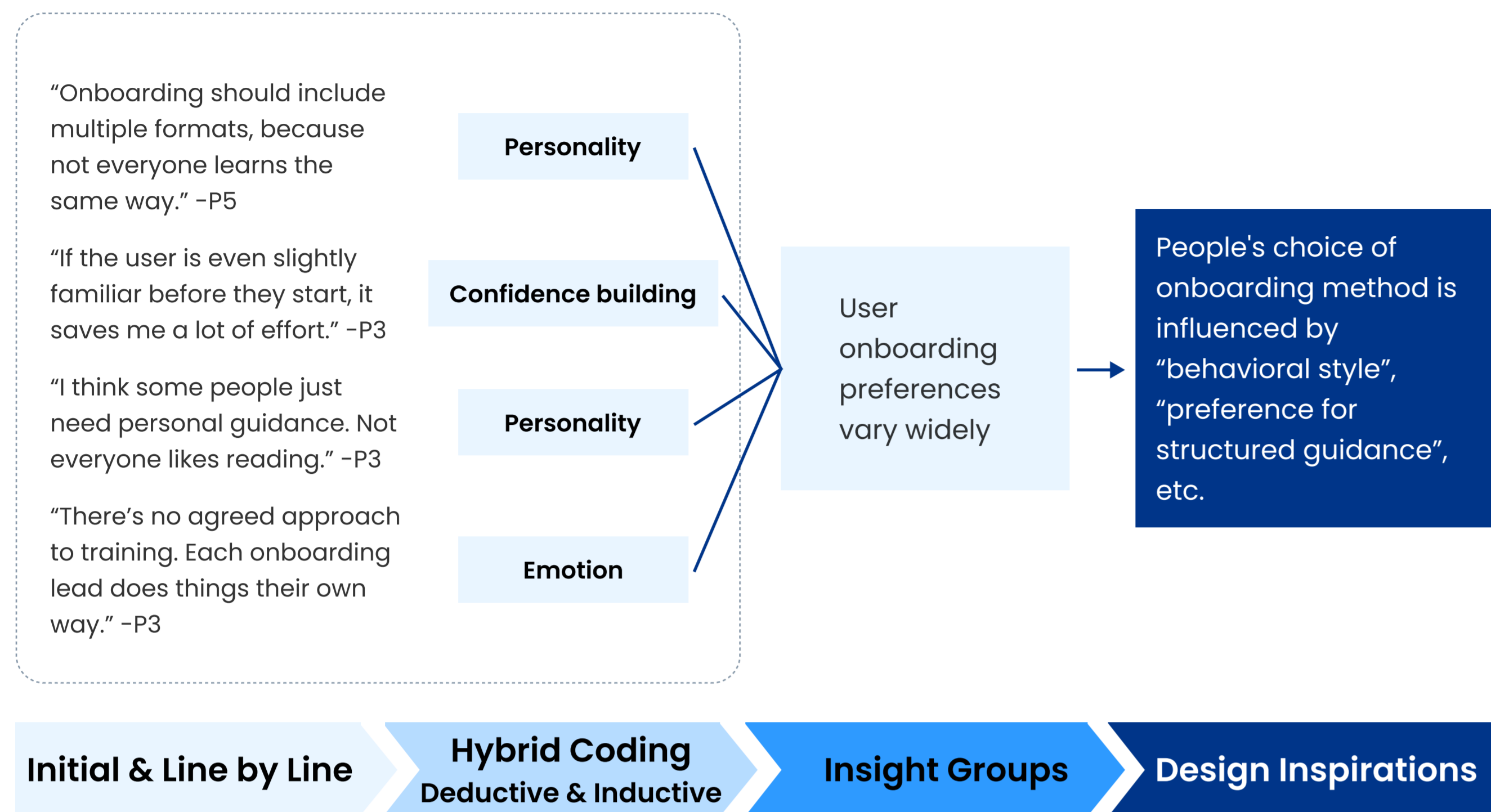


Fig. 3.2 - Overview of the Coding Process: A step-by-step structure of how the interview data was processed, from raw quote extraction to final design implications.

3.2.1 Initial & Line-By-Line Coding

To gain a grounded understanding of employees’ onboarding experiences, I began the analysis with a systematic review of the interview transcripts. This stage focused on identifying and capturing meaningful expressions, patterns, and tensions directly from the spoken narratives. The process followed two interlinked sub-steps: initial coding and line-by-line coding.

In the **initial coding** phase, all interview transcripts were reviewed in full to gain a holistic sense of the content and emotional tone. This allowed me to identify early recurring ideas and note potentially significant moments, even before formal categorization began. This also helped capture not only the clearly stated opinions, but also the subtle frustrations or concerns implied between the lines.

Next, in the **line-by-line coding** phase, each transcript was analyzed sentence by sentence to extract individual insights. Statements were rewritten into short to develop meaningful representations, preserving the speaker’s original meaning as faithfully and specifically as possible. These were then visualized as individual sticky notes, forming the foundation for all subsequent theme-building.

The goal at this stage was not to classify, but to stay close to the data. This allowed unexpected or even contradictory insights to emerge, without being constrained by predefined structures..

This stage produced a total of 100+ coded sticky notes, each tagged with its corresponding participant ID (P1-P5). These are compiled in Board 1: Initial & Line-by-Line Coding (see Appendix 6), where they are presented in raw, ungrouped form. A simplified visual overview of the coding process is shown in Figure 3.2 below.

This process created a flexible foundation for clustering and synthesis in the next phases, allowing inductive findings to emerge while maintaining transparency and traceability of all data points.

3.2.2 Hybrid Coding & Theme Combination

Following the line-by-line extraction, the next step focused on clustering the raw quotes into meaningful thematic categories. This stage adopted a hybrid coding approach, combining deductive theory-driven codes with inductive pattern recognition to support both academic grounding and contextual flexibility.

The **deductive coding** process was based on the literature proposed by Ju et al. (2021), which identifies three core domains for **individual development** during enterprise system onboarding:

1. **Learning:** How users absorb system-related knowledge.
2. **Confidence Building:** How users gain readiness or assurance to act.
3. **Social Interaction:** How users engage with others to support their learning.

These categories formed the initial coding structure and were used to label quotes that directly aligned with the predefined themes.

However, as the interviews unfolded, participants began to express a wide range of responses that were not adequately captured by the existing themes. In particular, many responses reflected not only what employees did during onboarding, but **how they approached it from an individual perspective**. To account for this, three inductive themes were added through iterative clustering and open coding. These are:

1. **Personality:** Stable, long-term individual differences.
2. **Emotion:** Short-term, situationalized mental state differences.
3. **Cognition:** Differences in information processing.

To reflect this dual structure, the six final themes were reorganized into two overarching categories:

- **Individual Development:** Learning, Confidence Building, Social Interaction.
- **Individual Differences:** Personality, Emotion, Cognition.

Grouped sticky notes from the initial coding phase were moved and clustered visually according to these six themes (see Board 2: Hybrid Coding & Theme Combination, in Appendix 6). Each quote was tagged with a theme that best reflected its primary focus.

This theme-building stage not only ensured theoretical alignment with existing onboarding literature, but also made space for new insights to emerge from practice, particularly around **personal variability** in onboarding needs.

3.2.3 Insight Prioritization And Design Relevance Check

While the six coding themes provided a broad lens to understand employee onboarding experiences, not all of them were equally relevant to the design goal of this project. Therefore, this step was carried out to prioritize insights with the strongest connection to design implications.

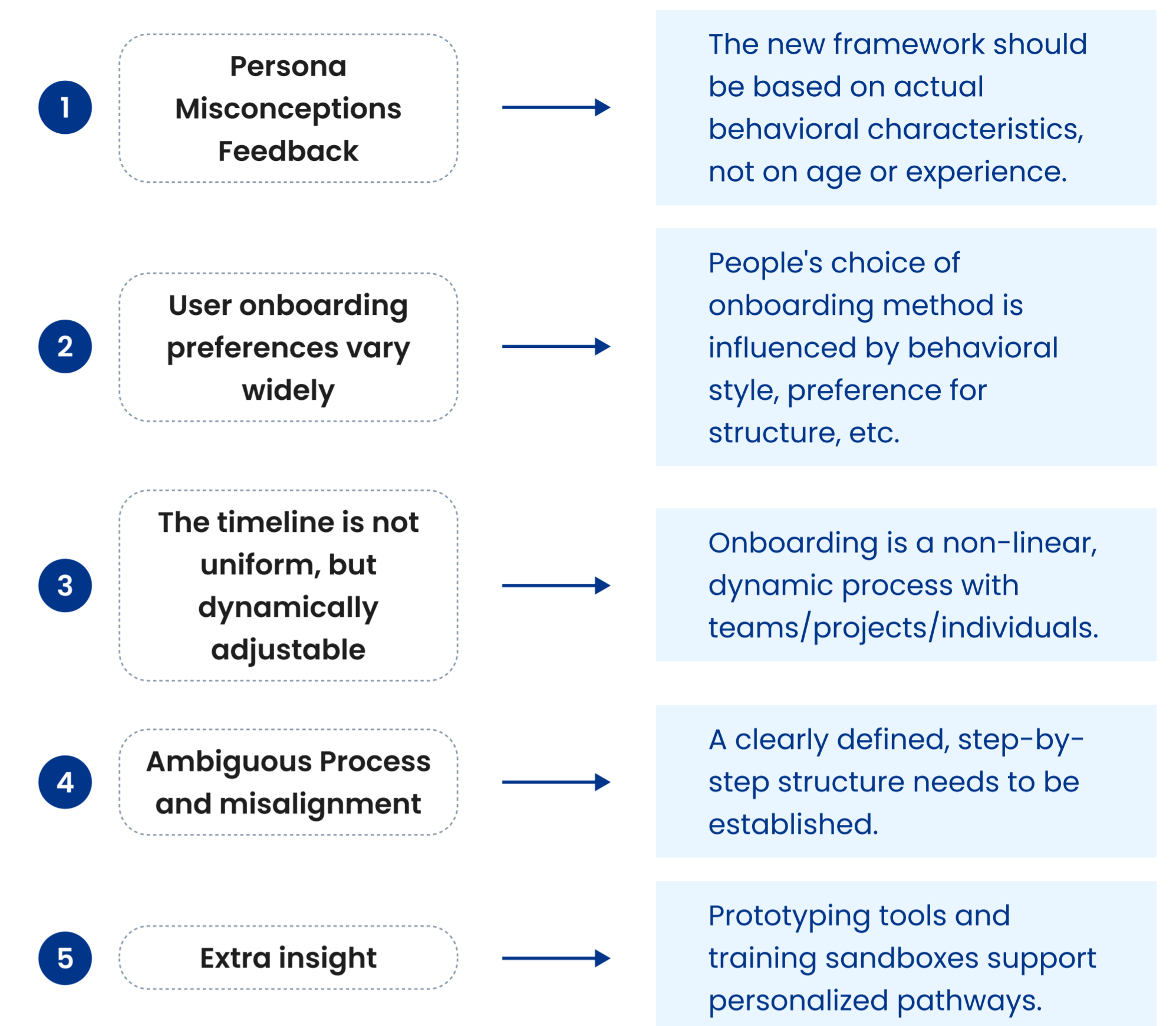
The first action in this step was to highlight sticky notes across all themes that were directly relevant to the design goal. These high-priority quotes represented user struggles, behavioral preferences, or structural gaps that could inform potential design directions.

Next, instead of organizing them back into the original six themes, these highlighted quotes were re-clustered through a **cross-theme combination** process. That is, quotes from different themes were grouped together when they reflected a common insight. For example, a quote originally tagged under personality could be combined with one from confidence building if both pointed to the same challenge in user-driven onboarding.

This process yielded five Insight Groups, each representing a consolidated design-relevant pattern derived from the data. Each group then informed one corresponding design inspiration, guiding the development of the onboarding framework in the next chapter.

The following table summarizes these five groups and their associated design takeaways:

Fig 3.3 - From Design-Relevant Quotes to Insight Groups and Inspirations.



A complete version of this clustering, including each quote and its participant reference, is available in Appendix 6, Board 3: Insight Prioritization.

Key Insights and Design Implications

Beyond identifying pain points, the five insight groups also suggest potential concept directions for onboarding design. For instance:

- The diversity of onboarding preferences calls for a modular or adaptive strategy;
- Timeline variability points toward non-linear, self-paced onboarding structures;
- Unclear processes imply the need for more transparent, progressive onboarding maps.

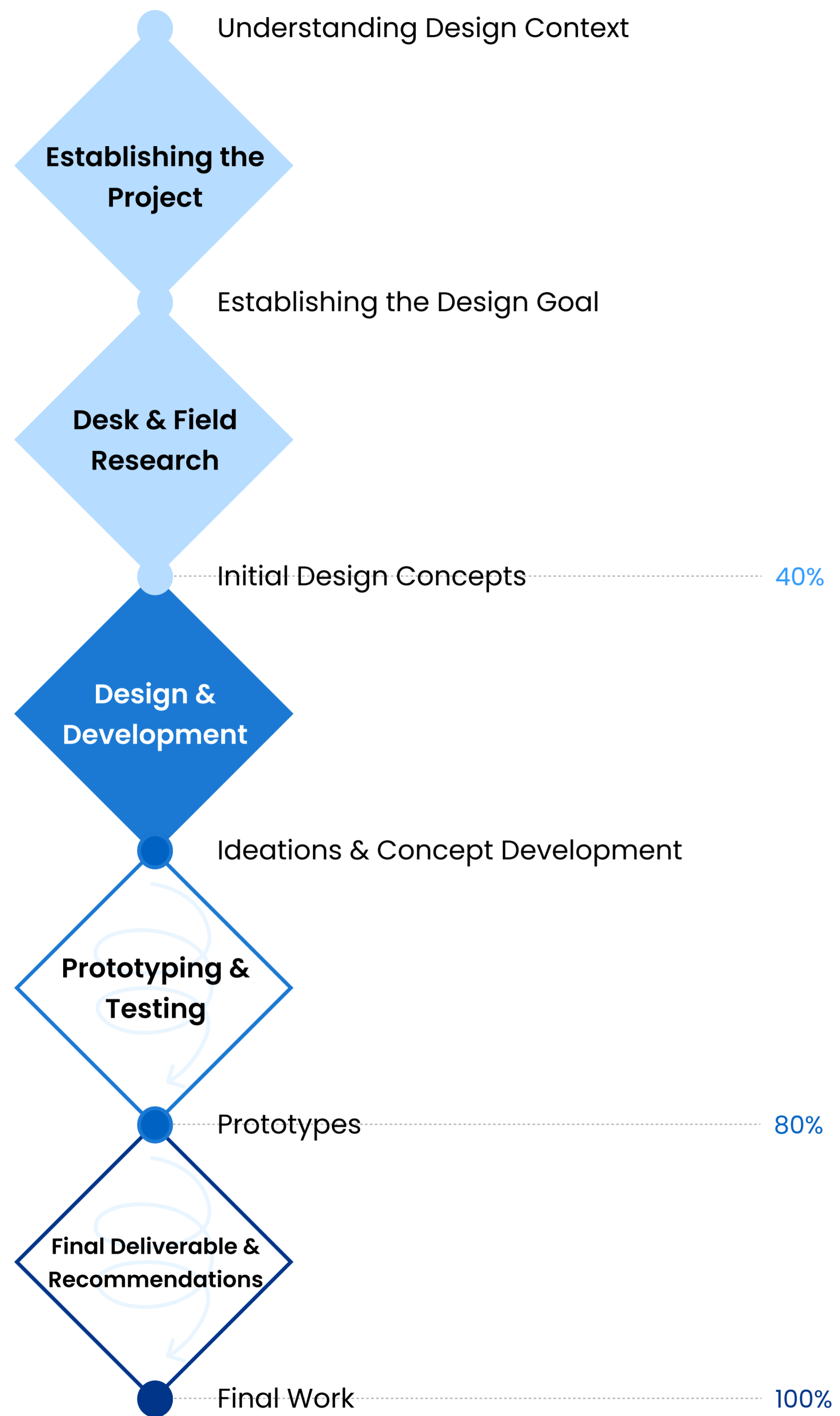
These preliminary ideas provide the conceptual foundation for the next stage of this project, where they will be developed into concrete onboarding design strategies.

One significant realization during this phase was the **invalidation of the initial persona model**. Early-stage assumptions had loosely grouped users based on “tech level,” often with implicit biases, such as associating youth with digital fluency or seniority with resistance to change. However, interview data challenged these assumptions repeatedly. Participants in senior roles occasionally

demonstrated strong digital skills and adaptive behaviors, while some younger users expressed low confidence and a preference for structured support.

Onboarding needs emerged as being more strongly shaped by individual **behavioral tendencies** (e.g., whether someone prefers hands-on experimentation or guided instruction), **emotional confidence**, and **team-specific dynamics** than by static demographic attributes. These findings point to the necessity of rethinking *how users are categorized in the context of onboarding strategy*.

This opens up a key design challenge: **how to define employee profiles in a way that meaningfully supports strategy matching**. Onboarding design must respond to nuanced user traits that affect how individuals learn, adapt, and engage with systems. This question forms the starting point for the next chapter, which explores **how prior research has approached user classification in both behavioral and organizational design domains**. The goal is to build a more suitable framework for translating diverse user profiles into actionable onboarding strategies.



4. Design & Development

This chapter translates research findings into a structured onboarding guideline. By bridging theoretical frameworks, field insights, and organizational input, it develops a logic flow that connects employee profiles to actionable onboarding methods. The design process rethinks user classification, adapts Jones' six-dimensional socialization model, and integrates risk reflection to enhance adaptability. The main contribution of this chapter is the formulation of a profile-to-method mapping framework, supported by both backend logic and a demonstrative interface.

4.1 Rethinking User Types

While field research findings have revealed the limitations of traditional persona-based classifications, particularly those relying on static attributes such as age or assumed digital fluency, these insights alone are insufficient to establish a new, evidence-based user model. In order to build a more robust foundation for adaptive onboarding design, it is essential to explore how users have been categorized in prior literature across domains such as digital transformation, organizational behavior, and onboarding process.

This section reviews relevant theoretical frameworks that focus on behavioral, cognitive, or psychological dimensions of user variation. Rather than aiming to propose a definitive model, the review seeks to identify **personality-oriented frameworks** that can support the development of differentiated user profiles in enterprise onboarding contexts. These models are evaluated not only in terms of their empirical basis and application scope, but also in how they might inform the design of profile-driven onboarding strategies in later stages of this project. The goal is to establish a meaningful foundation for **linking user characteristics to onboarding strategies selection, enabling onboarding leads to act on user diversity in a more structured and personalized way.**

4.1.1 Existing Research On Personality Typing

Personality-based frameworks such as the Myers-Briggs Type Indicator (MBTI) have been widely used to study behavioral variation in organizational contexts. Park et al. (2012) explored how MBTI personality types influence work behavior in R&D environments and found that certain types were more closely associated with collaborative tendencies, autonomy needs, or preference for structured tasks. Similarly, Cohen et al. (2013) investigated the MBTI types of project managers and reported correlations between personality traits and managerial success rates. Their findings suggest that **personality characteristics can meaningfully predict individuals' attitudes toward responsibility, communication, and leadership styles, reinforcing the value of behavioral differentiation in organizational planning.**

While MBTI has demonstrated empirical relevance in organizational behavior research, its application tends to focus on **individual psychological characteristics** rather than interactive or

environmental dimensions of work (McCrae & Costa, 1989; Pittenger, 2005). As such, although the MBTI's four dichotomies (e.g., introversion–extraversion, sensing–intuition) offer insight into personal preferences, they provide limited guidance when it comes to aligning onboarding strategies with both individual behavior and organizational framing. For example, onboarding design often involves decisions about sequencing, structure, and role modeling, which are shaped **not only by personality but also by team structure and role transitions.**

Given the need to account for both individual variation and organizational context, a more structurally grounded framework is required to support onboarding strategy design. This motivates the search for a complementary model that retains behavioral differentiation but expands beyond the scope of MBTI's intra-personal orientation.

4.1.2 Organizational Socialization Theory

To support onboarding strategy design with a more structured foundation, this project draws upon the six-dimensional theory of organizational socialization proposed by Van Maanen and Schein (1979). The model outlines six bipolar tactics: collective vs. individual, formal vs. informal, sequential vs. random, fixed vs. variable, serial vs. disjunctive, and investiture vs. divestiture. Which describe how newcomers are introduced into an organization through different structural and interpersonal arrangements. These dimensions offer a systemic perspective on how onboarding processes can be configured to match different socialization needs.

Recent studies, such as Godinho et al. (2023), demonstrate that **this theoretical framework remains applicable in contemporary onboarding contexts.** Their onboarding handbook explicitly adopts the six-dimension model as “a guiding structure to define onboarding stages and associated activities,” **citing its ability to ensure coherence between onboarding interventions and organizational culture.** The strength of this model lies in its structural clarity and practical applicability qualities that make it especially valuable when designing modular onboarding strategies linked to user profiles.

4.1.3 Bridge To Design Application

Although the six-dimensional model of organizational socialization was originally proposed in the context of new employee integration, the underlying mechanisms it describes, namely **learning, adaptation, and behavioral change**, also characterize the process of onboarding existing employees to new digital systems. As discussed in earlier sections (see Section 1.3.6 and 2.2.1), this project adopts an expanded definition of onboarding that emphasizes the transition experienced by system users during organizational transformation. Prior research confirms that similar psychological and behavioral mechanisms are involved when individuals are asked to re-orient within changing work environments (Bauer et al., 1998; Flanagin & Waldeck, 2004; May & Finch, 2009).

Godinho et al. (2023) likewise apply Jones' socialization theory to onboarding design in enterprise contexts, using it to map structural onboarding activities. This precedent supports the relevance of the model beyond its original use case. In this project, the six dimensions are not interpreted as fixed onboarding types, but rather **as design criteria that help translate user profiles into actionable onboarding strategies**. By doing so, the model enables **onboarding leads to navigate user diversity in a structured way**, facilitating modular onboarding design that accounts for both individual tendencies and organizational structure.

4.2 Overall Structure

4.2.1 Defining The Output: What Is The Guideline?

The core design outcome of this project is defined as a **guideline**: a structured, operational process that supports onboarding leads in translating employee profiles into tailored onboarding methods. This **guideline** functions as a **decision-support mechanism**. It offers step-by-step logic for interpreting user characteristics and matching them with context-appropriate onboarding strategies.

This definition reflects a deliberate scope choice. While many onboarding solutions focus on information collection, this project starts from a different entry point. The assumption is that **user profiles have already been gathered through pre-existing channels such as surveys or assessments, managed by Amgen's**

internal teams. This direction was discussed and confirmed with internal stakeholders, who expressed confidence in the organization's capacity to manage the data collection phase. As such, this project focuses specifically on how to act upon that data once it becomes available. Based on this input, the design task is to structure how onboarding leads can act on that information, making decisions not only based on role or seniority, but on nuanced behavioral preferences and situational variables.

The need for such a guideline emerged from both field research and literature. Interview findings revealed the limitations of one-size-fits-all onboarding approaches and highlighted the role of individual traits in shaping onboarding effectiveness. Meanwhile, theories such as Jones' six-dimensional model of organizational socialization (Van Maanen & Schein, 1979) offered a structural vocabulary for understanding onboarding preferences. By bridging these two inputs, the project constructed a logic path **from employee profile to onboarding method**, not to categorize users, but to **provide onboarding leads with actionable suggestions aligned to user diversity**.

In this context, the term **"guideline"** was chosen because it emphasizes procedural clarity and decision-making support. The goal is not to prescribe one ideal solution, but to equip onboarding leads with a flexible yet structured reference that helps them navigate varied onboarding needs across employee types.

To illustrate how onboarding leads would actually interact with this guideline, a storyboard was created to visualize the decision flow from employee profile to method suggestions.

4.2.2 From Profile To Method: Initial Concept Guideline

Building on the foundation laid by previous research, this section presents the initial guideline logic that underpins the Profile-to-Method Guideline. The goal is not to deliver static onboarding templates, **but to offer a structured process that helps onboarding leads make informed decisions based on user diversity**. By linking employee profiles, captured through behavioral and contextual dimensions to suggested onboarding methods, the model operationalizes personalization in a practical, step-by-step format.

1. Scenario Overview

To illustrate the application of the guideline in practice, a high-level storyboard (Figure 4.1) was created to visualize how onboarding leads would interact with the system when applying the guideline. Starting from interpreting behavioral and scenario traits, matching them with suitable methods, reflecting on risks, and arriving at method suggestions.

Storyboard: From Profile Interpretation to Method Generation

Figure 4.1 – Storyboard: From Profile to Method Generation

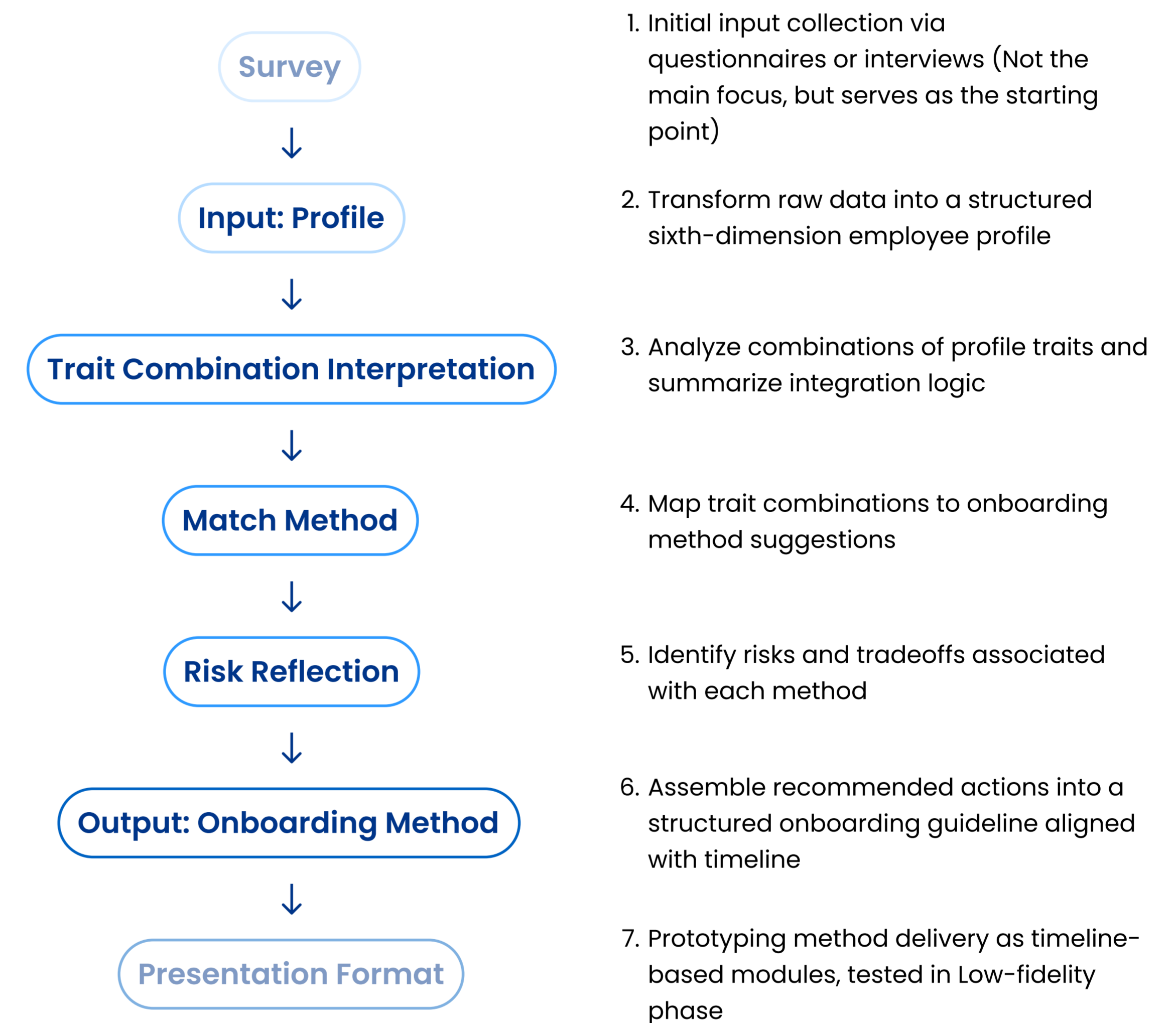


2. The process of backend logic

The overall backend logic of this derivation system is illustrated in Figure 4.2: Profile-to-Method Process Overview, which demonstrates how employee profiles are interpreted and transformed into actionable onboarding methods.

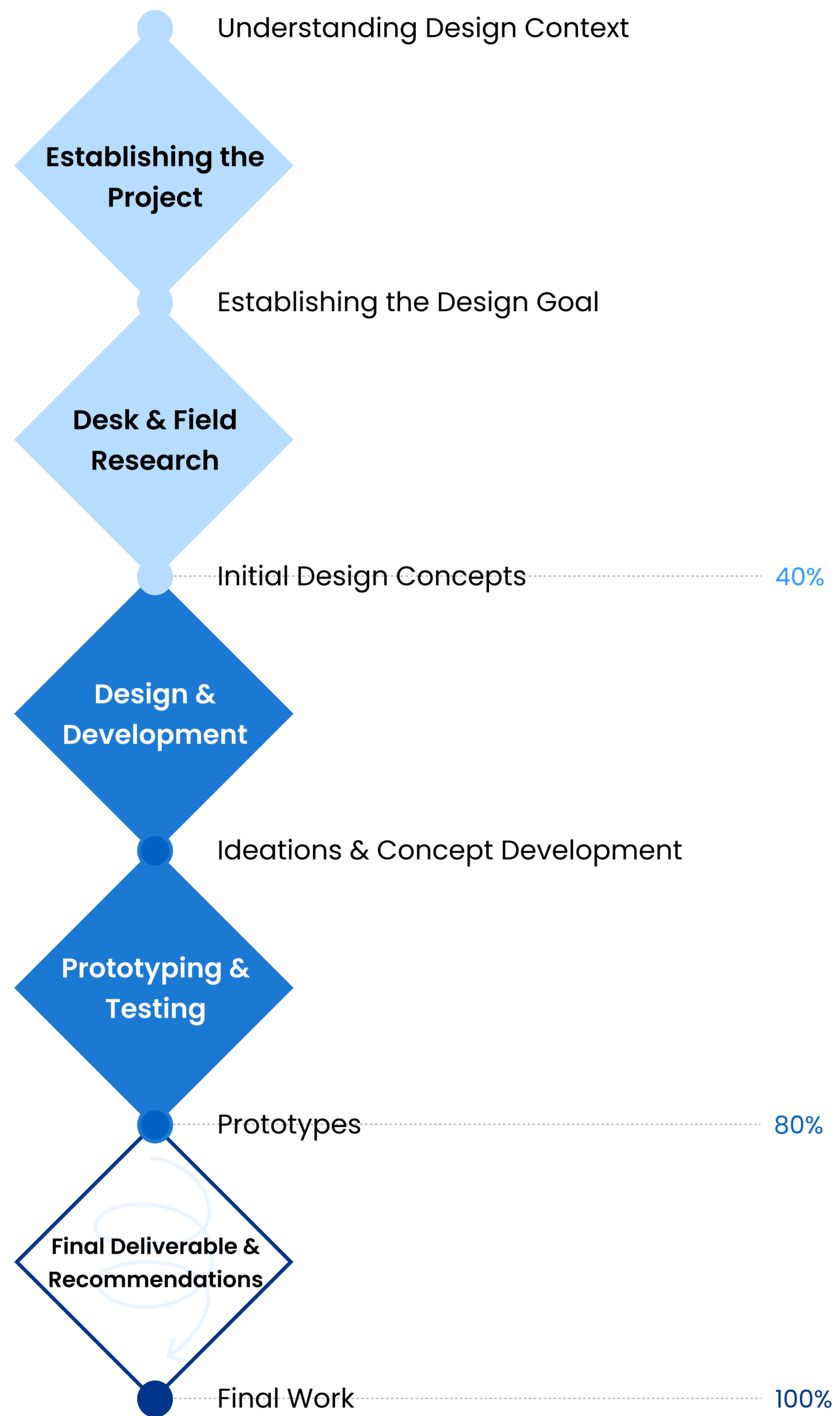
While this approach is grounded in Jones' six-dimensional framework, **it is not proposed as the only viable solution. Rather, it was selected for its clarity and compatibility with design-driven translation into structured onboarding actions.**

Fig 4.2 – Profile to method process overview.



The resulting output takes the form of a modular onboarding guideline for onboarding leads, which can be interpreted as a visual timeline or method list depending on context.

To evaluate whether both the backend logic and the frontend interface of this guideline are functional and understandable, the next chapter conducts prototype testing rounds to assess the accuracy of the profile-to-method derivation as well as the clarity of its visual presentation.



5. Prototyping & Testing

This chapter presents three rounds of prototyping and testing that refined the Profile-to-Method onboarding guideline. Across the iterations, early validation, low-fidelity prototyping, and interface refinement were conducted to ensure the logic was functional, scalable, and usable in practice. The process converged into a final validated guideline that supports onboarding leads in making profile-driven training decisions. A final verification was conducted, confirming the outcome without major changes. Remaining limitations and opportunities for future development are discussed in the next chapter.

5.1 Introduction

This chapter presents the three prototyping rounds that transformed the initial concept into a validated onboarding strategy guideline. Building on the Profile-to-Method logic established in the previous chapter, this phase focuses on evaluating both the backend logic and the system design interface. The dual objective is to verify whether the logic is functional and scalable across profiles, and whether the interface is understandable and usable for onboarding leads in practice.

Specifically, it covers Rounds 1 to 3, progressing from early structure validation to low-fidelity testing and visual refinement. Each round integrates user feedback to improve not only the clarity and scalability of logic interpretation but also the practical usability of the interface.

- **Round 1** explores whether the profile-based logic is functional at a minimal level and whether onboarding leads can intuitively follow the interface flow using simple mockups.
- **Round 2** introduces low-fidelity prototypes to refine logic clarity and adaptability, while testing whether the design reduces potential confusion in real decision-making scenarios.
- **Round 3** produces a near-final version that demonstrates scalable logic and an improved interface presentation, incorporating feedback from both designers and internal employees at Amgen.

Together, these three rounds represent the core design validation efforts. The final round, focused on delivery and implementation, will be introduced in the next chapter.

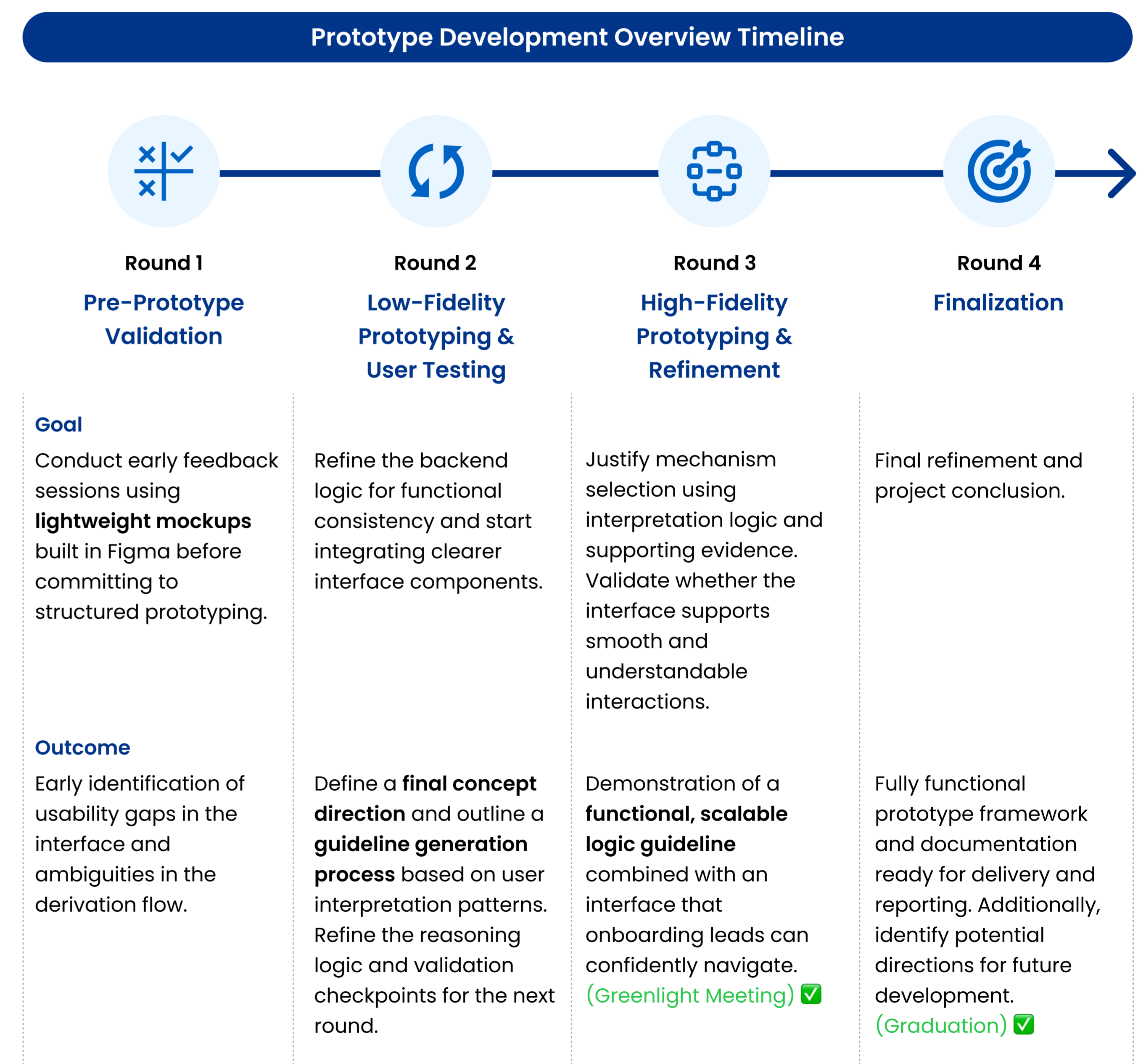
The following diagram outlines this four-round prototyping journey.

5.2 Overview Timeline

This overview summarizes the four key rounds of the prototype development process, highlighting each phase's design objective and key outcomes. It serves as both a visual overview of the validation journey and a structured record of how the guideline evolved from concept logic to practical, user-facing design.

In this context, the framework is defined as **a practical guideline to support onboarding decision-making across diverse team situations.**

Fig. 5.1 - Prototype development timeline with goals and outcomes.



5.3 R1: Pre-Prototype Validation

5.3.1 Testing The Mapping Logic And Interface

Dimension	Polarity	Characteristic
Behavior-based Dimensions		
Engagement Style	Individual	Prefers working independently and navigating onboarding at own pace with personalized autonomy.
	Collective	Prefers engaging in shared onboarding experiences with peers, leveraging group momentum and emotional support.
Identity Socialization	Investiture	Seeks affirmation of their past identity and experience within the new role; expects onboarding to value their existing expertise.
	Divestiture	Accepts the need to leave behind previous assumptions or behaviors; open to full cultural reorientation.
Role Modeling Need	Serial	Learns by observing experienced colleagues in similar roles; prefers structured mentorship.
	Disjunctive	Learns without needing a direct role model; more comfortable defining their own approach in loosely defined roles.
Scenario-based Dimensions		
Task Flow Preference	Sequential	Prefers learning that is structured from basic to complex in logical steps; values progression.
	Random	Comfortable jumping between topics and learning paths; handles non-linear onboarding.
Time Expectation	Fixed	Needs clarity on timeframes, goals, and deliverables; performs best when onboarding is time-boxed.
	Variable	Learns flexibly without fixed time expectations; prefers freedom to extend or contract onboarding depending on context.
Guidance Format	Informal	Learns best through flexible, peer-driven, or organically structured interactions (e.g. Q&A, peer walkthroughs).
	Formal	Learns best through institutionally provided training materials and clearly assigned formats (e.g. presentations, slide decks).

Fig. 5.2 - Categorization of Onboarding Dimensions.

1. Objective

Design and validate a **guideline** that translates employees' onboarding-related traits into structured onboarding recommendations, while also checking whether a lightweight interface can make the derivation understandable for onboarding leads.

To support clearer interpretation and application, the six dimensions from Jones' Organizational Socialization theory were further categorized into **behavioral-based traits** and **scenario-**

based traits.

Specifically, R1 aims to confirm that the six dimensions can be interpreted into trait combinations that drive method suggestions, identify ambiguities in the mapping logic and in the risk reflection step and identify early usability issues in the mockup interface, including labels, navigation, and output readability.

2. R1 Test Plan: Logic and Interface

Purpose

- Assess whether the logic from employee profiles to onboarding method suggestions is functional at a minimal level, understandable, and logically consistent.
- Identify confusion points in strategy matching, risk interpretation, wording, and visual hierarchy.

Participants

- 3 internal colleagues and design students with onboarding experience or design background.

Testing Method

- Task-based walkthrough with think-aloud using a Figma click-through mockup.
- Comprehension checks after each step; ask participants to restate the step's purpose and their rationale.
- Observe whether users reach consistent or divergent conclusions when interpreting the guideline.

Expected Outcome

- Understand whether others can follow the logic and understand the guideline structure independently.
- Suggestions for refining profile-to-method guideline clarity and restructuring risk sections.
- A prioritized list of interface issues and copy changes needed for clarity and learnability.
- Validation checkpoints to inform Round 2.

3. Inputs

Six dimensions were grouped into two categories for interpretation.

Behavior-based dimensions reflect personal learning styles and preferences, such as: Individual vs Collective, Investiture vs Divestiture, Sequential vs Random.

Scenario-based dimensions reflect expected onboarding context or team environment, such as: Fixed vs Variable, Serial vs Disjunctive, Informal vs Formal.

Profile example:

Employee profiles are generated through questionnaires, interviews. In this project, *test uses a simulated profile A to avoid data sensitivity issues:*

- **Behavioral Traits:** Individual, Investiture, Sequential
- **Scenario Traits:** Fixed, Serial, Formal

Start Of Guideline Prototyping

Based on the logic structure introduced in Chapter 4 (see Fig. 4.1), this initial prototype test shows the core reasoning flow of the guideline. A simulated employee profile was created directly as input, bypassing earlier steps such as survey and raw data collection (Step 1&2). The walkthrough begins from Step 3. The table below combines Steps 3 to 5, including analyzing trait combinations, suggesting matched methods, and reflecting associated risks, into one table to be evaluated in this phase.

Note: *The table presents typical combinations based on commonly observed onboarding patterns. In real-world usage, the system should allow flexible expansions for edge-case combinations or single-dimension mappings depending on user context.*

Some of the suggested methods were adapted from case-based insights documented during the desk research phase (see Figure 2.5), where contextual conditions implicitly aligned with certain onboarding methods.

Profile Interpretation Summary

In the prototyping phase, this profile summary was created to show what onboarding leads might receive after profile-to-method matrix assessment is completed. Acting as a lightweight personality snapshot, providing the onboarding lead with a quick analysis of the system user's profile:

The behavioral traits (Individual + Informal + Sequential) indicate a need for self-paced autonomy, a relaxed setting, and learning that builds logically over time. The scenario traits (Fixed + Serial + Investiture) suggest that the user performs best with clear expectations, consistent mentorship, and onboarding that reinforces their sense of role clarity.

Together, these suggest that onboarding should be **modular without being isolating, structured without being rigid, and supportive without being over-controlling.**

Profile A-to-Method Matrix

1. Behavior-based Combinations (Engagement & Delivery Style)			
Combination	Interpretation	Suggested Method	Potential Risk
Individual + Informal	Prefers low-pressure and flexible learning environments.	Provide self-guided modules with optional check-ins.	May lack accountability or miss early intervention points.
Informal + Sequential	Learns well through structured informal exploration.	Offer informal resources like short tutorials or peer Q&A, arranged in progressive steps.	Could lead to inconsistencies in information intake.
Individual + Sequential	Enjoys autonomy but benefits from structured flow.	Design a modular track where tasks unlock step by step.	May create confusion if task dependencies are not well explained.
2. Scenario-based Combinations (Format & Pacing)			
Fixed + Serial	Performs best in predictable and logically ordered onboarding.	Use a stable calendar with topics building on each other weekly.	Rigidity might limit responsiveness to individual needs.
Serial + Investiture	Values consistency from team members and wants to reinforce their identity.	Combine shadowing with weekly feedback that reflects prior strengths.	May reinforce existing habits and reduce openness to new ways.
Fixed + Investiture	Appreciates predictable processes and opportunities to integrate existing knowledge.	Offer clearly structured modules with early validation checkpoints.	Risk of boredom if content is too basic or redundant
3. Cross-Trait Combinations (Interaction & Expectation Alignment)			
Individual + Fixed	Likes working alone but within a defined timeline or structure.	Provide clear deadlines for self-paced modules, avoid last-minute changes.	User might procrastinate without regular check-ins.
Informal + Serial	Enjoys informal exposure but prefers when it's ordered by sequence.	Arrange lunch-and-learn sessions or peer talks by topic flow.	Informality may weaken message clarity or engagement.
Sequential + Investiture	Prefers learning gradually, while feeling their existing skills are acknowledged.	Design gradual challenges that reference prior experience and validate progress at each stage.	Feedback loops may be too vague without formal milestones.

Table 5.3 - Prototype Logic ▲
Table: Trait-to-Method Mapping with Risk Reflection.

Final Output

Based on the trait interpretation and profile-to-method mapping, the onboarding lead receives a personalized onboarding guideline structured along a clear timeline. Each phase incorporates methods aligned with the user's behavioral and situational traits, offering actionable steps throughout the onboarding journey.

For instance, a profile showing Fixed and Sequential preferences indicates the need for a stable, step-by-step onboarding flow. As a result, the strategy begins with a quick pre-assessment on Day 1 to identify known areas and skip redundant content, ensuring efficiency without disrupting logical progression.

Table 5.4 - Timeline-Based Strategy for Profile A.

See Table 5.5 for the resulting method plan customized for this profile.

Profile A: Resulting Method	
Timeline	
Day 1	<ul style="list-style-type: none"> Kick-off message from manager to reinforce role clarity and value (Investiture). Provide access to onboarding hub with self-paced modules (Individual + Fixed). Quick pre-assessment to customize starting point and skip redundant content (Fixed + Sequential).
Week 1	<ul style="list-style-type: none"> Learning track unlocked progressively: System Overview → Tools Introduction → Process Tutorials (Sequential + Informal). Optional Q&A session scheduled mid-week (Informal + Serial). Internal documentation hub for self-guided exploration (Individual + Informal).
Week 2-3	<ul style="list-style-type: none"> Peer mentorship touchpoint: assigned mentor offers weekly feedback (Serial + Investiture). Weekly reflection snippet: user fills a short self-check report (Individual + Fixed).
Sustain & Wrap-up	<ul style="list-style-type: none"> Gradual reduction of guidance, focus on independent execution (Individual + Sequential). Team-integration session and knowledge sharing with similar role holders (Investiture + Serial). Collect user feedback on pacing, clarity, and challenge (Used to refine future logic).

Dummy Prototype: Interaction Check

A wireframe was shown to participants after the logic walkthrough. The goal was to check basic interaction and step discovery: can users move from profile, to trait combination, to output, and find the Risk Reflection step using layout cues alone. No explanatory logic text is included at this stage.

1. Profile Display Variants

Two alternative views were provided to represent the user profile. The intent was to learn which view makes the profile easier to grasp at a glance.

Table 5.5 - Profile display A: Spider chart with polarity labels on the outer ring.

Each axis represents one dimension. The outer ring labels show the selected polarity for each dimension.

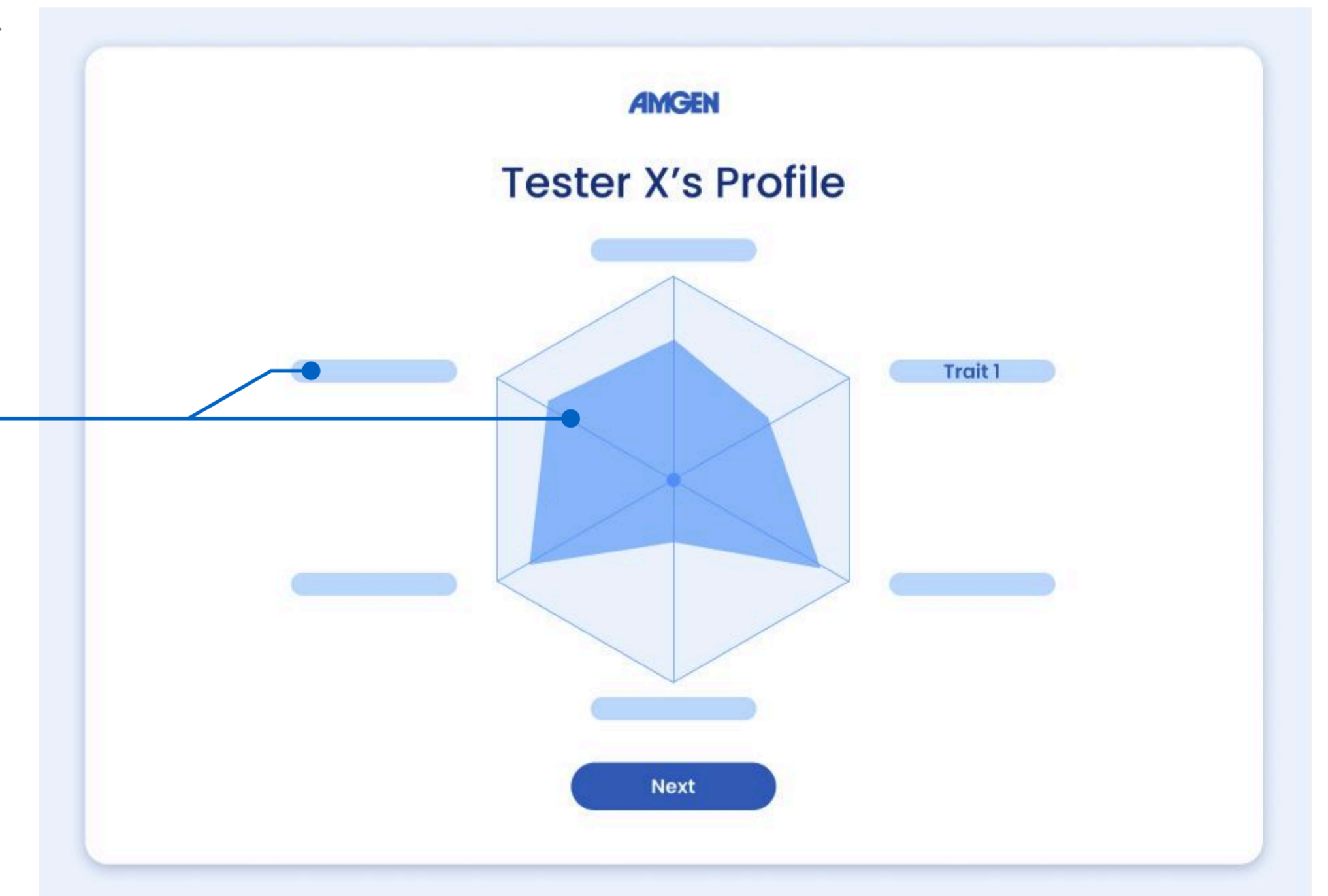


Table 5.6 - Profile display B: Slider bars showing twelve traits around a neutral midpoint.

Twelve sliders represent both polarities of the six dimensions.

Neutral midpoint at 0.



2. Traits Combination and Potential Risks

This interface mirrors the logic flow reviewed on the previous pages while keeping the visual test content-light. Users combine traits, confirm the selection, and the system returns candidate onboarding method suggestions. Each suggestion carries a concise “Potential risk” note produced by the same rule set.

Table 5.7 – Traits Combination screen.

Drag any trait card to start a combination.

Drop two or more traits here to form a combo.

The system generates a suggested onboarding method for this combo.

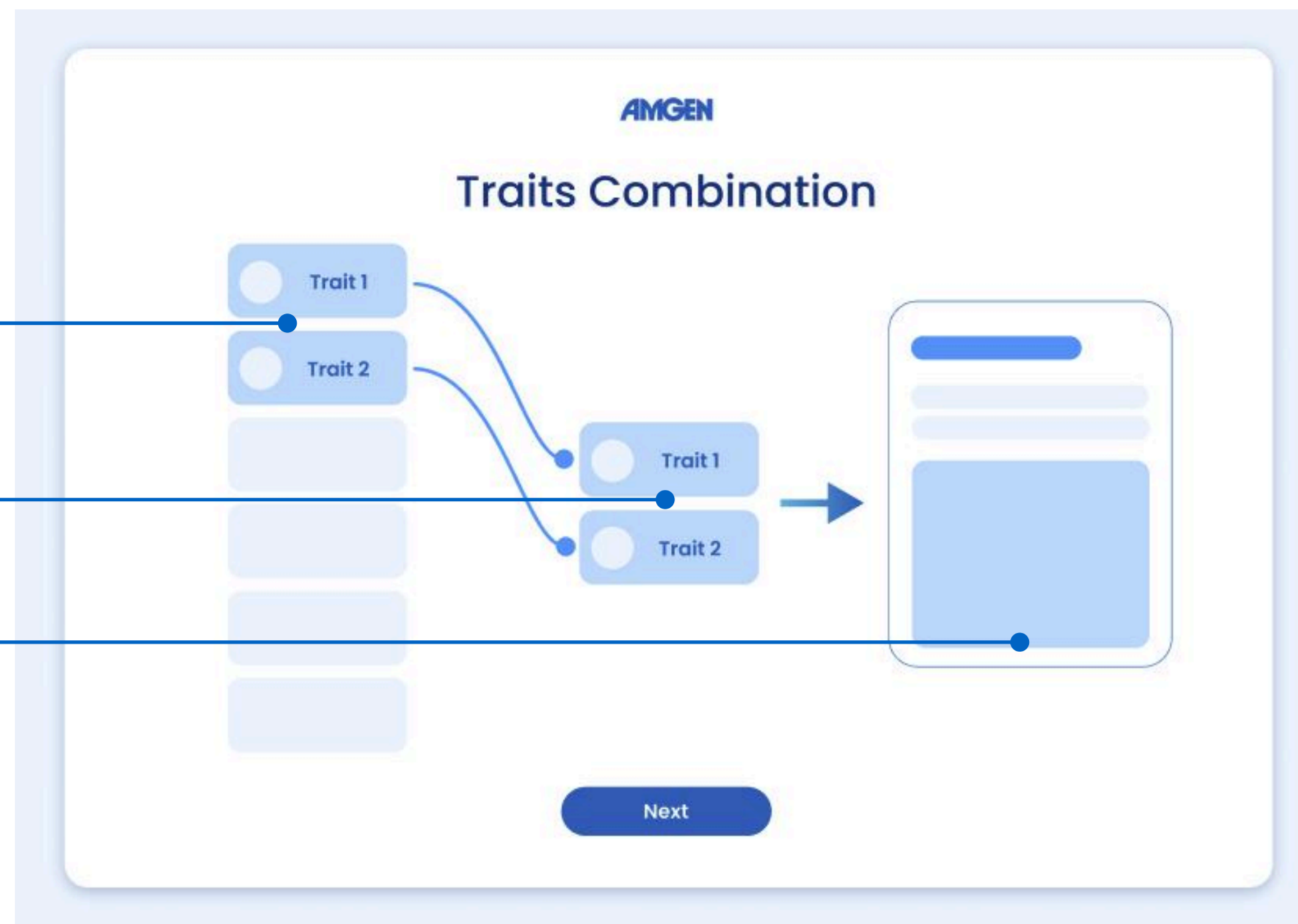


Table 5.8 – Potential Risks screen.

Warning pop-ups show potential risks and notes for this method.



3. Final Onboarding Method

For onboarding leads who prefer to bypass the analysis steps and go straight to the outcome, the system presents this Final Method view. It delivers the finalized set of onboarding methods and corresponds to the timeline plan shown in Figure 5.4.

Table 5.9 – Final Method view.

The top timeline shows the onboarding phases.

The list below shows which methods will be used in each phase.



This round tested both parts of the system: the backend logic for profile-to-method derivation and the frontend interface for clarity and ease of use. The logic ran at a minimal functional level, and the interface was broadly understandable.

The next section summarizes these insights and states what will be adopted or revised, then carries the decisions into Round 2 low-fidelity prototyping.

5.3.2 Key Feedback And Adjustment

1. Key Feedback from Testing

All three testers were able to understand and apply the generated methods using the current guideline structure. The test effectively validated the logical flow from input profile to onboarding method and **confirmed that the structure was clear, usable, and aligned with the test goal**. The following feedback points summarize key issues observed during the walkthrough:

Feedback 1: Combinatorial overload

The current method relied on randomly combining two dimensions to generate strategy suggestions. However, in real contexts, strategy implications may be based on combinations of one, two, or even three traits. This leads to a **combinatorial overload**, reducing clarity and limiting practical usability.

Feedback 2: Lack of prioritization

The final strategy guideline presents all suggested methods in parallel, with no mechanism to indicate which strategies are more relevant or urgent.

Testers suggested **prioritizing dominant traits** instead of assigning equal weight to all combinations.

Feedback 3: Grouping logic unclear

One tester questioned the logic behind the dimension grouping structure, for example, why Collective, Formal, Sequential and other two all are grouped together, while Informal or Random are positioned oppositely. Currently, the two poles of each dimension are presented without clear academic justification for their order or grouping. The lack of an explicit behavioral rationale makes the structure harder to justify or expand.

Feedback 4: Methods too abstract for practical use

Some testers noted that suggested onboarding methods felt abstract and lacked operational clarity. While the trait-to-method matching provided psychological insight, it did not specify concrete actions or tools that onboarding leads could implement.

They recommended translating methods into more actionable mechanisms, including platform suggestions or execution formats.

Feedback 5: Interface terminology need clarification

Although onboarding leads would get a short orientation, testers still found several terms and headings confusing. They suggested adding contextual help that appears on hover or via an info icon, and tightening labels for key steps.

Feedback 6: sliders over spider chart

Most testers considered the slider-bar view clearer and faster to read than the spider chart. Sliders made polarity and strength immediately legible, while the spider chart felt visually dense.

Feedback 7: Color scheme acceptable

Testers requested no changes to the current palette. Visual hierarchy were considered adequate for this stage.

3. Adjustments and Design Direction

Adjustment 1: Replace random combination with trait-based mapping

Instead of relying on dimension pairings, the new model maps each trait to a relevant method based on predefined logic.

This improves conceptual alignment, supports modular construction, and reduces ambiguity in how strategies are derived.

Adjustment 2: Introduce dominant dimension logic

User profiles often show **extreme values** in certain dimensions. These **dominant traits** will be treated as primary drivers in future strategy suggestions.

This prioritization mechanism will enhance the guideline's personalization and ensure that the most relevant methods appear earlier in the sequence.

Adjustment 3: Dimension Polarity Grouping

Drawing on Van Maanen & Schein's (1979) framework, one possible way to group the six dimensions is by their underlying behavioral orientation. This behavioral lens supports clearer mapping and internal consistency, though it is not intended as a universal model.:

- **Organization-Centric Dimensions:** Collective, Formal, Sequential, Fixed, Serial, Investiture
Emphasize structure, control, rule-based instruction, and consistency.
- **Individual-Centric Dimensions:** Individual, Informal, Random, Variable, Disjunctive, Divestiture
Emphasize autonomy, flexibility, self-exploration, and identity transformation.

Adjustment 4: Extend mapping from method to mechanism

To address the need for actionable implementation, the guideline was extended beyond method selection. Each method is now linked to one or more onboarding mechanisms:

specific tools, activities, or platforms that onboarding leads can directly apply.

This revised grouping model will be applied in future iterations to clarify the logic and improve consistency across the framework.

Adjustment 5: Add contextual help and microcopy

Provide short tooltips or pop-ups for ambiguous terms and step headings, align labels with the guideline vocabulary, and add an info icon where needed.

Conclusion

This initial test achieved its goal of validating both the reasoning structure and the step-by-step flow of the guideline, while also checking the interface for clarity and ease of use. With general agreement on the overall logic, the next phase will deepen refinement: clarifying how each trait-method pairing is derived, verifying that the logic scales across profiles, and improving interface comprehension through contextual help and a default slider-based profile view. Rounds 2 and 3 will focus on increasing the precision of the matching logic and re-testing the updated interface for understandable, confident use by onboarding leads.

5.4 R2: Lo-Fi Prototyping & User Testing

5.4.1 Prototyping Logic Refinement

1. Objective

This round aims to test whether the refined logic, pairing each selected onboarding dimension with its interpretation, matched method, and corresponding mechanism, can generate onboarding strategy plans that are perceived by users as personally relevant, clear, and useful.

In parallel with logic refinement, the low-fidelity prototype introduced clearer labels, a slider-based profile view, a dedicated Risk Reflection step, and contextual help entry points.

2. Prototype Update Summary

To address feedback collected from Round 1, several major updates were introduced into this round's prototype structure:

- **Dimension Interpretation:**

The six original dimensions were decomposed into twelve distinct onboarding traits (see Fig. 5.2), **separating each**

- polarity into its own interpretation. These traits were further grouped into behavior-based and scenario-based categories, and each was assigned a unique definition and potential onboarding risk (see Appendix 7).

- **Prioritization Logic:**

A dominant trait detection rule was added, helping identify which dimensions exhibit the user's strongest onboarding preferences. These dominant traits now anchor the strategy generation, while remaining traits serve as secondary inputs.

- **Refined Output:**

The final output no longer stops at suggesting onboarding methods. Instead, each method is now linked to one or more **execution-ready mechanisms**: specific tools, platforms, or actions that can be directly implemented by onboarding leads.

- **Visual Profile Representation:**

A redesigned six-dimensional slider profile was created to visually display each user's onboarding preferences. This enables a more intuitive understanding of dominant and supporting traits at a glance.

3. Why move from trait to mechanism?

Interpretations clarify the onboarding meaning behind each trait, while matched methods offer actionable directions.

Adding the mechanism layer makes these directions tangible by specifying how the strategy can be **implemented in real onboarding activities**.

This conversion allows onboarding leads to directly map user traits to execution-ready strategy components, while also minimizing conflicts between strategy elements by rooting each mechanism in a clear logic chain.

4. Mechanism Mapping & Reference System

In Round 1, **methods and mechanisms were treated as interchangeable**, which blurred the boundary between strategic direction and operational execution. For example, in Chapter 2 (see Table 2.5), case study insights were labeled as onboarding methods, but in practice, many of them reflected platforms, tools, or actions more aligned with mechanisms. As a result, trait-to-method reasoning and method-to-implementation execution became conflated.

To address this, two key improvements were introduced in this round:

- **Internal Mechanism Library Usage:**

During this phase, I gained access to an **internal Amgen onboarding mechanism list**, which outlines concrete and deployable onboarding tools, platforms, and templates. This list was used as a **verified mechanism database**, allowing the prototype to test logic against actual enterprise-supported options.

- **Clarifying Methods vs. Mechanisms (See Appendix 8):**

A refined logic structure was introduced to clearly differentiate between **methods (strategic direction)** and **mechanisms (implementation action)**. Each trait is now first mapped to a method, which is then translated into one or more mechanisms aligned with the method's purpose.

5. How trait prioritization improves mechanism generation?

To improve personalization, this round introduces dominant traits, users' strongest onboarding preferences, as the core anchor for generating onboarding strategies.

By focusing on dominant traits, the resulting onboarding plans can more accurately address users' most prominent behavioral inclinations. Supporting traits are then incorporated to enrich and balance the structure. This approach increases the relevance and specificity of the strategy while ensuring that users' strongest characteristics are clearly captured and reflected in the final onboarding mechanism.

6. Participants

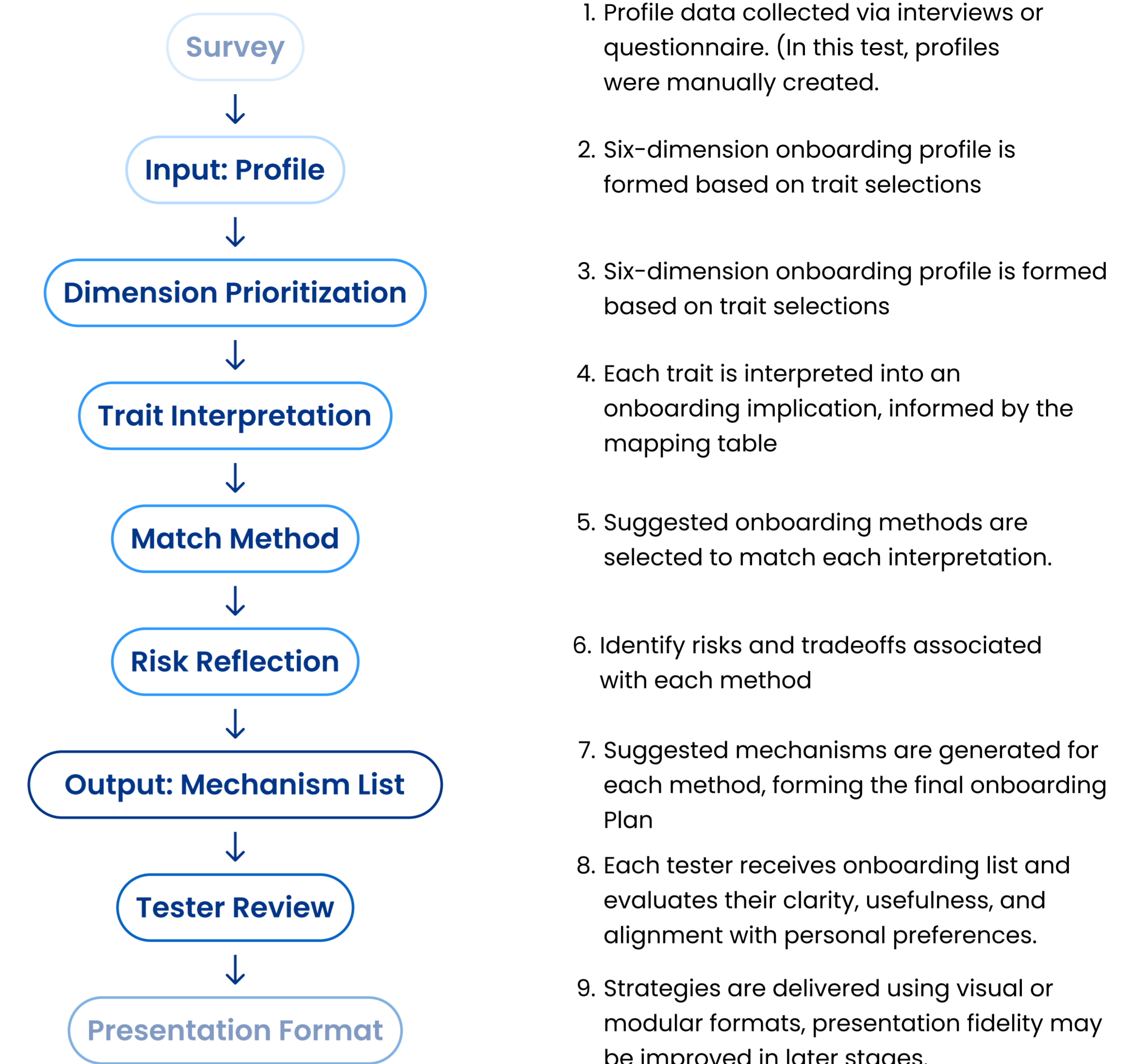
5 testers were recruited, including four internal employees from Amgen and one external participant with relevant enterprise onboarding experience.

Each tester was asked to manually identify their onboarding preferences by selecting a position on each of the six onboarding dimensions, rather than completing a structured survey.

7. Profile-to-Mechanism Guideline

This round adopts a structured one-to-one mapping logic, where each onboarding trait is interpreted, matched with a method, and then translated into one or more implementation-ready mechanisms.

The updated mapping process is illustrated in Figure 5.5, showing how user traits are translated step by step into onboarding mechanisms through a structured interpretation chain.



1. Profile data collected via interviews or questionnaire. (In this test, profiles were manually created.)
2. Six-dimension onboarding profile is formed based on trait selections
3. Six-dimension onboarding profile is formed based on trait selections
4. Each trait is interpreted into an onboarding implication, informed by the mapping table
5. Suggested onboarding methods are selected to match each interpretation.
6. Identify risks and tradeoffs associated with each method
7. Suggested mechanisms are generated for each method, forming the final onboarding Plan
8. Each tester receives onboarding list and evaluates their clarity, usefulness, and alignment with personal preferences.
9. Strategies are delivered using visual or modular formats, presentation fidelity may be improved in later stages.

Figure 5.5 - Updated Profile-to-Mechanism Mapping Process.

▲ 8. Evaluation Approach

To validate the relevance and clarity of strategies generated through the trait to mechanism chain, each tester received a personalized analysis report and interacted with the low fidelity prototype.

Tasks

- T1 Identify dominant traits on the profile screen and confirm the selection.
- T2 Follow the chain from trait interpretation to matched methods.
- T3 Compare the candidate mechanisms and select the one they judge most suitable for their own onboarding.

Measures

- The testing and observation approach remained consistent with Round 1: moderated think-aloud with observer notes, followed by a short interview.
- Qualitative records of user actions, hesitations, and verbal explanations while completing T1 to T3.

- Participants' rationale for the mechanism they selected.
- Qualitative comments on unfamiliar terms, confusing headings, and perceived usefulness.

Success criteria

At least 80% participants complete the flow without facilitation and state that the selected onboarding mechanism feels useful and appropriate for their profile.

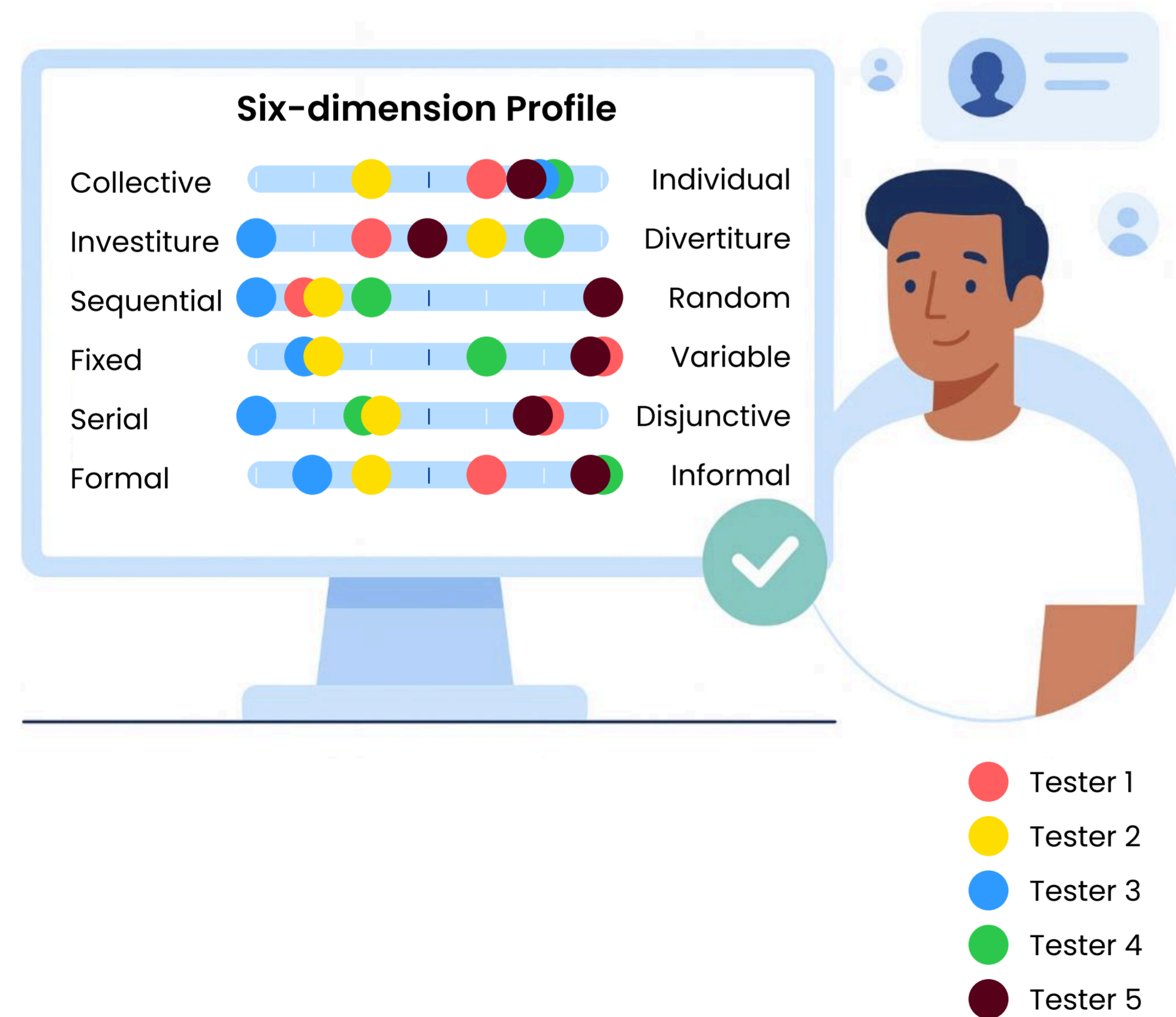
5.4.2 Visual Profile Overview And Method Selection

To support the walkthrough of the updated guideline process, Figure 5.6 presents a consolidated visualization of all five testers' onboarding profiles. Each colored dot represents one tester's selection across the six onboarding dimensions.

In the following section, a full step-by-step report is presented based on one selected tester's profile to demonstrate how personalized onboarding strategies were generated through the interpretation-to-mechanism chain.

The complete reports for the remaining four testers are provided in Appendix 9: Full Profile-to-Mechanism Reports for All Testers.

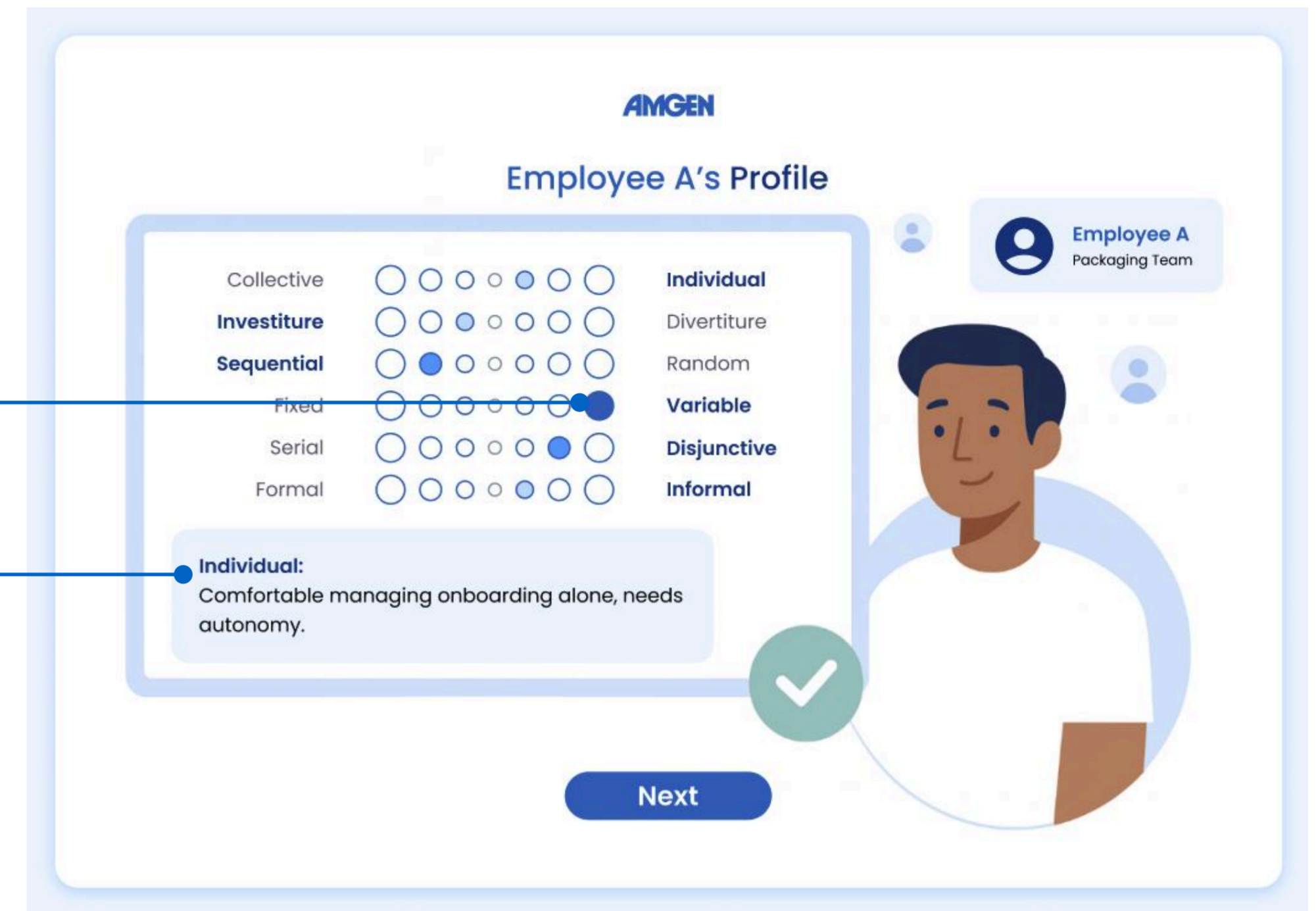
Figure 5.6 - Aggregated Six-Dimension Profiles Across All Testers.



Next, the full interpretation-to-mechanism chain is demonstrated through the example of Tester 1.

1. Employee Profile

Figure 5.x - Six dimensional overview with polarity and priority bubbles.



Larger and darker bubbles highlight stronger preferences.

Move the cursor over a term to see its definition and polarity.

Table 5.8 - Backend prototype Logic Matrix: Trait-to-Method Mapping with Risk Reflection.

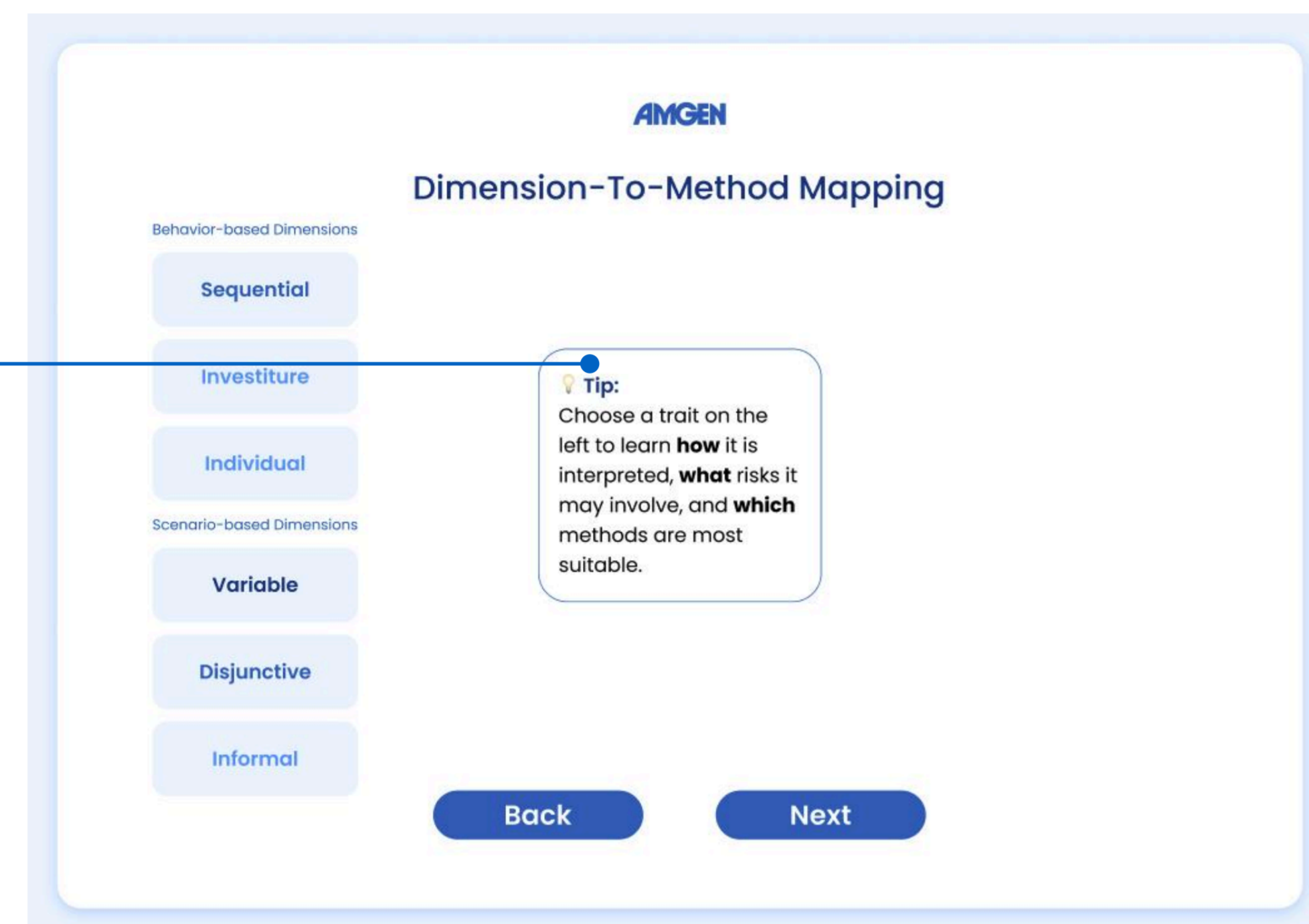
Tester 1: Profile-to-Method Matrix

Dimension	Interpretation	Matched Method	Risk
Behavior-based Dimensions			
Sequential	Feels secure when onboarding steps are clearly defined and follow a set sequence	Task Ramp-up: Supports step-by-step learning aligned with user-defined sequences	Break onboarding into sequential milestones with guidance
Investiture	Feels motivated when their prior identity is respected and early responsibilities are granted	Contribution-based Tasking: Gives newcomers manageable responsibilities that support learning, independence, and engagement	Misjudged confidence may cause under-preparation
Individual	Comfortable managing onboarding alone, needs autonomy	Internal Documentation: Offers autonomous access to structured content for independent learners	Isolation and lack of timely feedback or support
Scenario-based Dimensions			
Variable	Prefers controlling their own learning speed with adjustable pacing options	Guided Modular Learning: Enables flexible pacing with structured guidance modules	Lack of clarity on progress or expectations
Disjunctive	Needs onboarding tools that help self-orient without relying on peer or mentor references	Guided Modular Learning: Enables flexible pacing with structured guidance modules	Lack of orientation, risk of poor integration
Informal	Feels more engaged when onboarding happens through casual interactions and peer support	Learning by Doing: Offers a hands-on entry into team practices while maintaining team productivity	Ambiguity and inconsistent knowledge acquisition

2. Profile Interpretation and Risk with Matched Methods

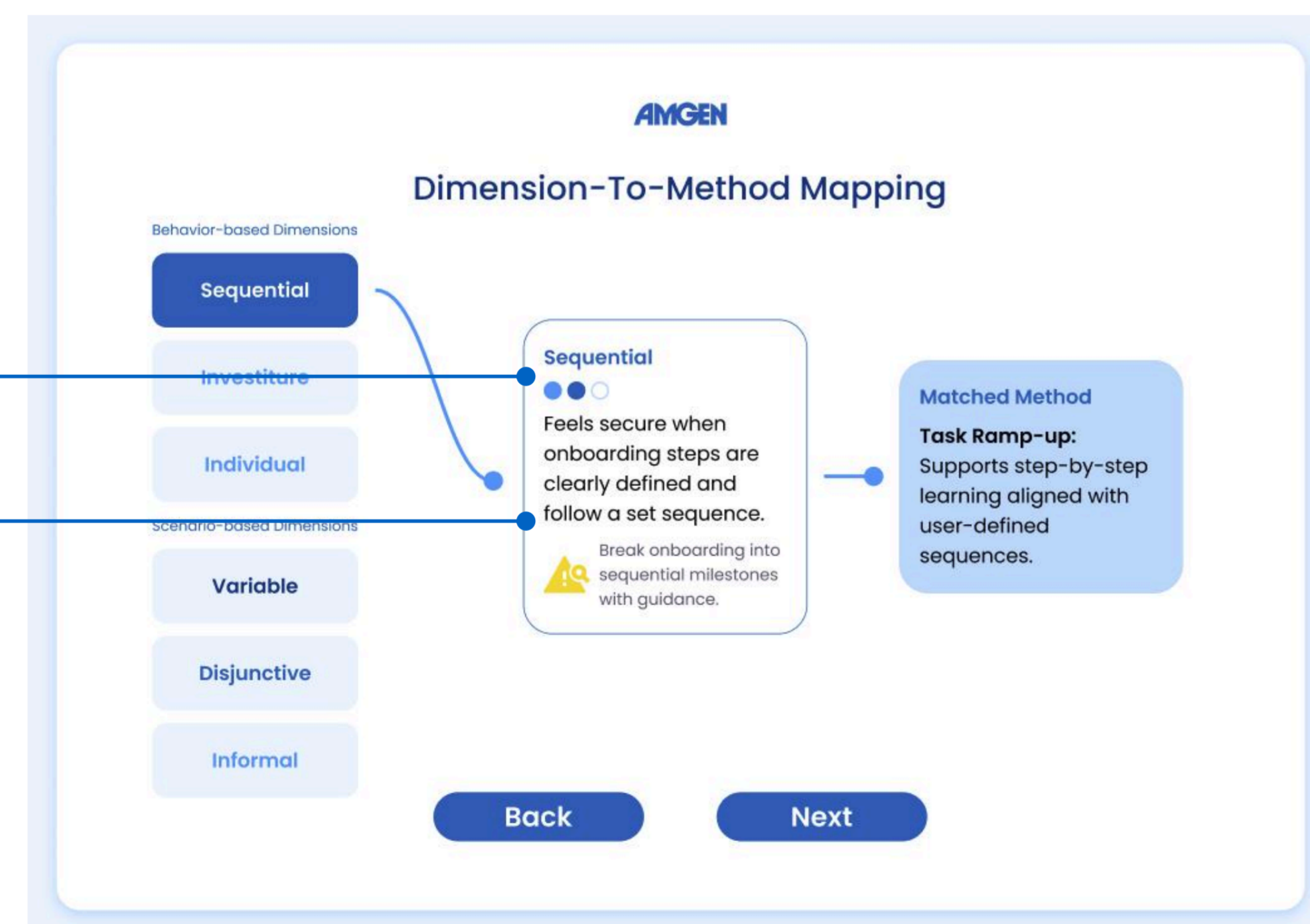
For each six-dimensional profile, this view shows the priority of every trait, a concise interpretation and its potential risk, then proposes a matched onboarding method. Select a trait on the left to reveal its priority lights, the short explanation, the risk note, and the recommended method.

Figure 5.x - Dimension to Method Mapping, empty state with tip.



Quick guidance on how to navigate this step.

Figure 5.x - Dimension to Method Mapping, selected trait with priority, interpretation, risk, and matched method.



Two lights on means medium priority for this trait.

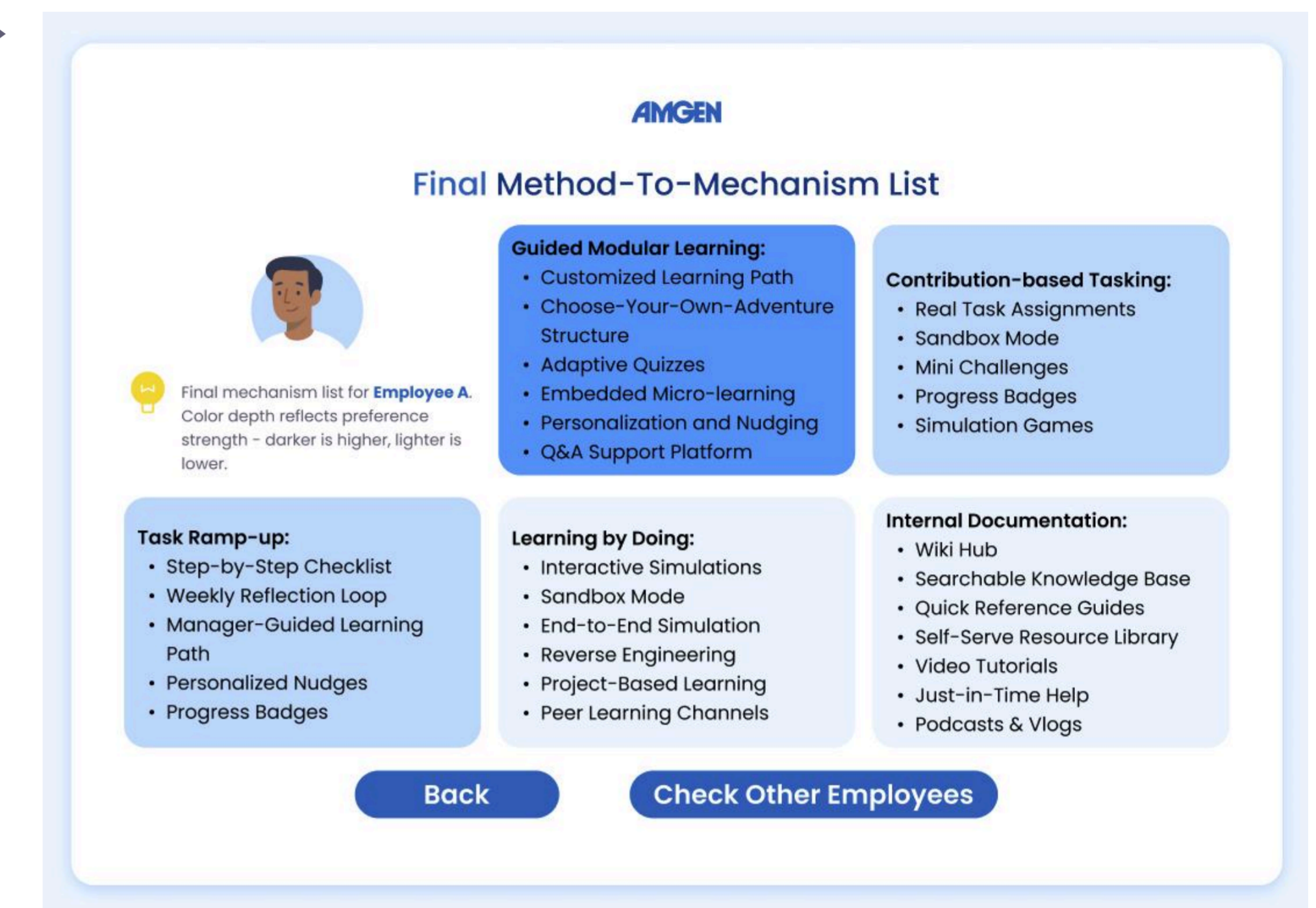
A short description of how this trait affects onboarding.

3. Personal Mechanism Plan

A consolidated list of mechanisms derived from the selected methods for this employee. Color depth indicates fit strength from high to low, enabling onboarding leads to apply the most suitable actions first.

Note: Figure 5.x shows the final mechanism list for this employee. This list is not sourced from public websites or literature. All items come from Amgen's internal onboarding mechanism library, which catalogs enterprise approved tools and platforms, and provides an initial grouping that I adopted here.

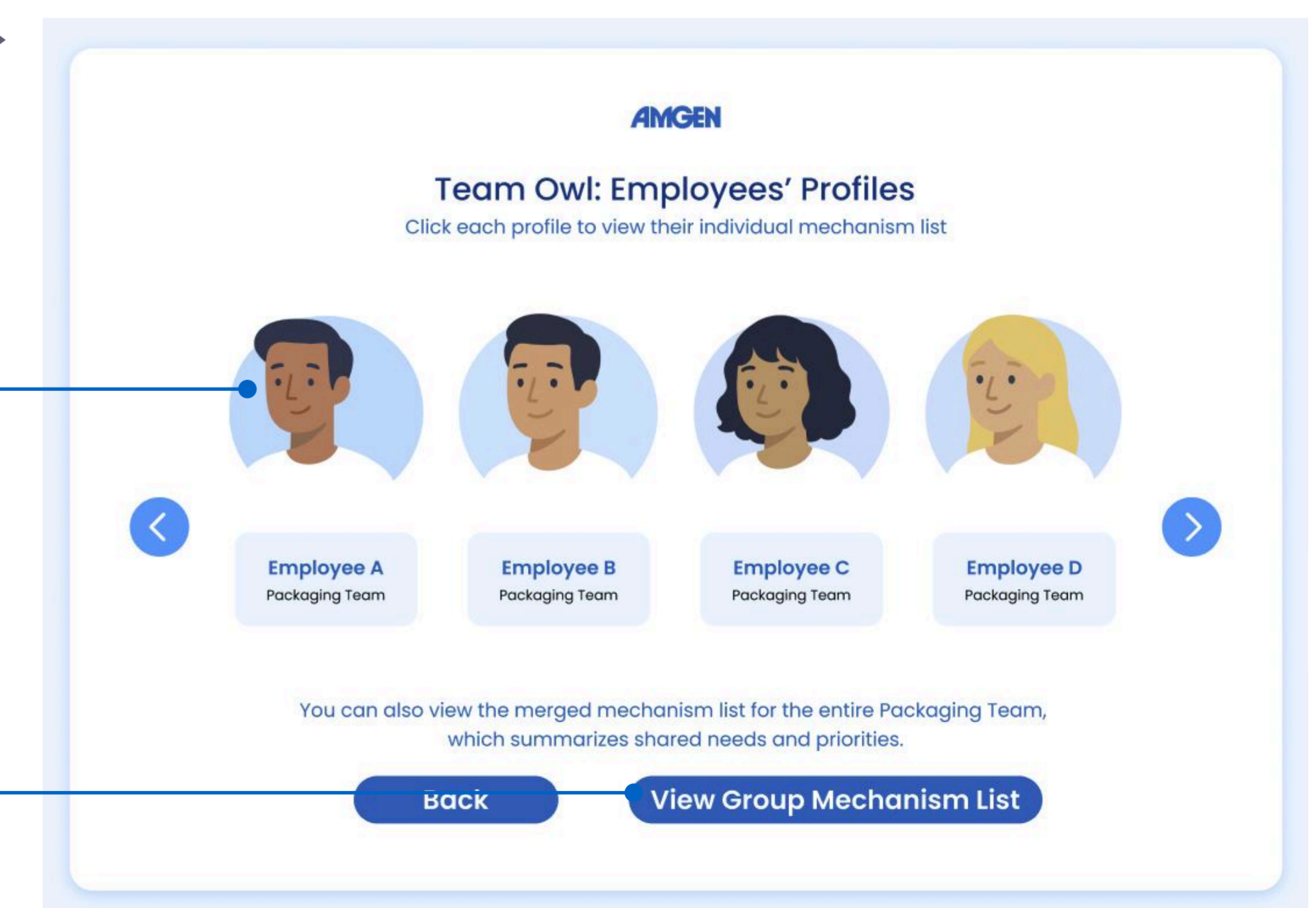
Figure 5.x - Personal Mechanism Plan. Mechanisms grouped by method, color depth shows fit strength.



4. Team View: Group Profiles and Shared Mechanism List

Onboarding is often one to many. This section shows how an onboarding lead reviews a team's profiles, inspects each person's mechanism list, then opens a merged group mechanism list. The group list highlights what works for most members, shows who each item fits.

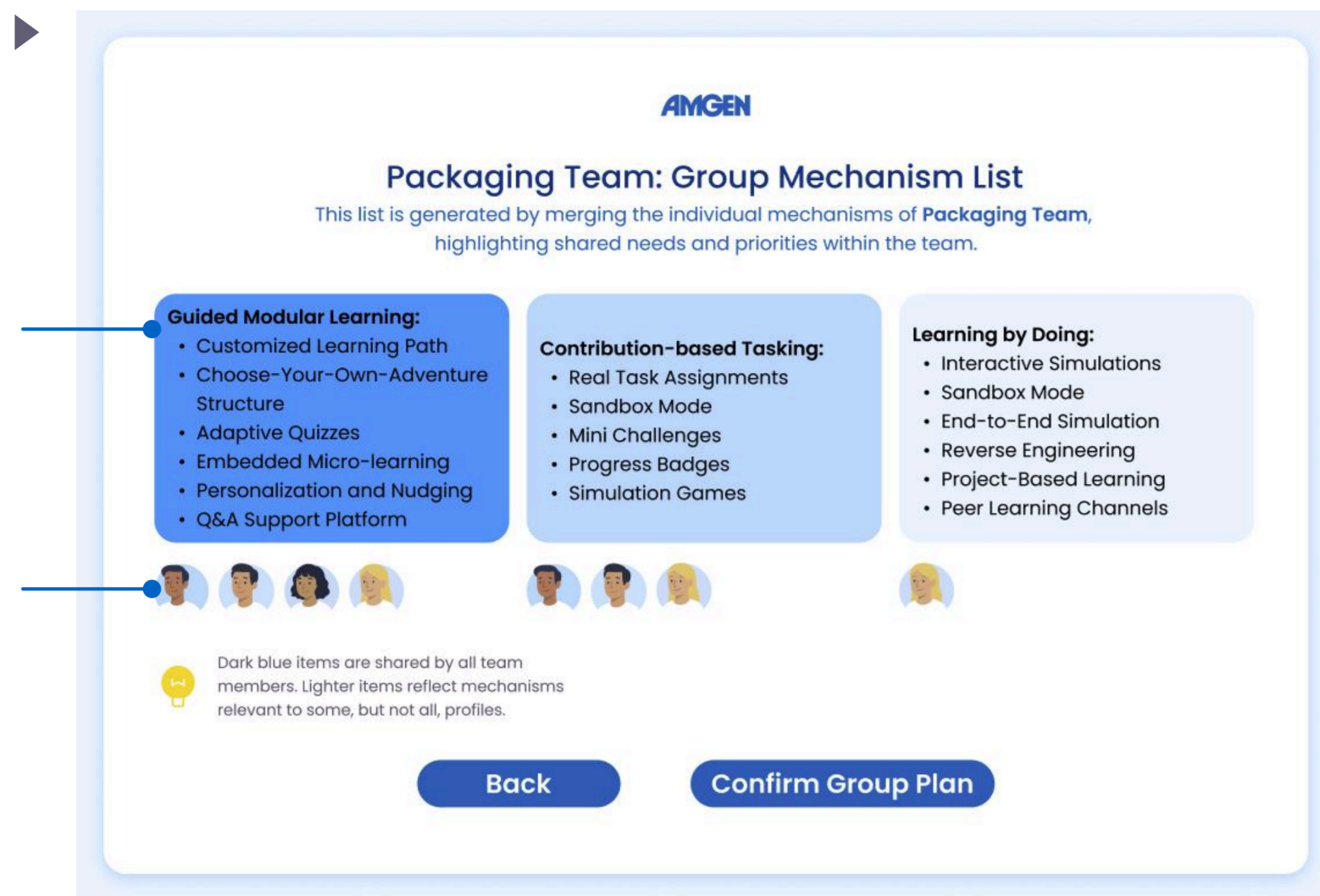
Figure 5.x - Carousel of employee profiles with a link to the group mechanism list.



Each avatar opens the employee's profile and personal mechanism list.

Jump to the merged list for the whole team.

Figure 5.x - Merged mechanisms for the team. Darkness shows agreement level.



Dark items indicate strong agreement across the team.

The number of avatars shows how many team members have this mechanism in their personal mechanism list.

5.4.3 Prototype Refinement: Logic And Interface

1. Key Feedback from Testing

Overall, testers found both the prototype's onboarding logic and the interface clear and usable. Icons and texts did not cause confusion, and interactions felt smooth.

Meanwhile, testers found the prototype's onboarding logic intuitive and structurally coherent. While most mechanisms felt appropriate, a few misalignments were identified. Nevertheless, the step-by-step flow was seen as meaningful and aligned with the intended design goals:

Feedback 1: Matching Misalignment

Some testers felt that moving from trait interpretation to a matched item was too constrained and singular. They questioned why each interpretation maps to only one named item, given that the final plan can later unfold into multiple mechanisms.

Feedback 2: Risk Disconnection

Testers acknowledged the inclusion of potential risks as a thoughtful addition, particularly for anticipating user misfits. However, they also noticed that these risks were not integrated into the final output, such as the mechanism lists or personalized strategy summaries.

Feedback 3: Combine Profile First VS. Combine Mechanism

One tester suggested inverting the generation sequence. Instead of producing a mechanism list per person and aggregating later, start with a combined view to identify common needs first, then

tailor individual lists. This could reduce complexity when many employees are onboarded together.

Feedback 4: Interpretation vs. Method redundancy

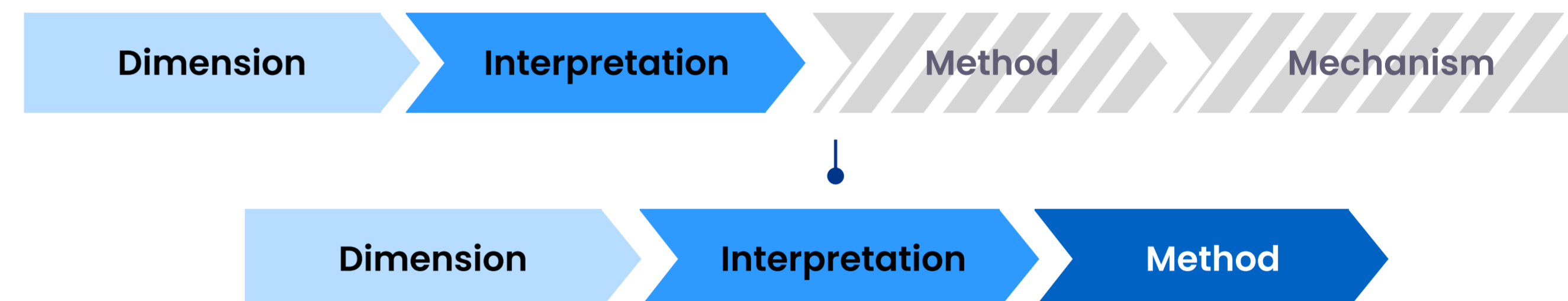
An Amgen tester questioned the necessity of a separate Method step. In his view, the named method often repeats the interpretation in another label, which makes the chain feel longer without adding evidence.

He recommended reducing the chain from Interpretation to Method to Mechanism, to a leaner Interpretation to Mechanism, or making the method a lightweight label rather than an extra inference step.

2. Adjustments and Design Direction

Adjustment 1: Unifying Method and Mechanism

What changed: The "Mechanism" step was merged with "Method" to avoid redundancy and to adopt a more user-friendly terminology. The chain was simplified from Dimension → Interpretation → Method → Mechanism → Risk → Output to



Why: Reviewers found that "Mechanism" overlapped with "Method" and introduced unnecessary layers. Moreover, the term sounded overly technical, making it less intuitive for onboarding leads. **By unifying both under "Onboarding Method,"** the framework maintains conceptual clarity, reduces inference jumps, and communicates the design in a more accessible way.

Adjustment 2: Standardize first, then map back

What changed: Before any mapping, each item in Amgen's internal methods list is tagged with one or more dimension labels (e.g., Sequential, Formal, Fixed). Tags are agreed in a short alignment session with onboarding leads and recorded as a shared label table. Matching then uses label overlap: the closer an employee's six-dimensional profile is to a method's labels, the higher its match.

Why standardize first:

- **Reduce subjectivity.** Decisions follow a written rule set rather than ad-hoc judgment.

- **Consistency and audibility.** Different people and teams obtain the same results; every decision traces back to the label table.
- **Scalability.** When the internal method list changes, you only tag the new items; the rules remain stable.

In short, R3 first aligns the rule set (shared labels), then lets the system match by labels making 'interpretation to method' transparent and reproducible.

Adjustment 3: Risk Tagging

While the risk layer was well received, it was not explicitly integrated into the final outputs. In response, a **lightweight tagging method** will be added to the method list (e.g., put a tag "⚠️ high risk scenario is X" next to the generated method).

Note that risks are not flaws of the methods themselves, but stem from individual preference profiles.

When a user shows a strong inclination toward one dimension (e.g., Fixed), **their adaptability to the opposite dimension** (e.g., Variable) **often decreases**. This may lead to misalignment or stress if a method reinforces their dominant trait too strongly while ignoring the suppressed one.

Adjustment 4: Profile Combination (Future Option)

One tester suggested beginning with aggregated profiles to identify shared needs before generating individual method lists. While this offers a promising direction, it would require a structural redesign of the framework. Given that only one tester raised this and the current scope constraints, this path will be reserved as a future refinement option rather than a current adjustment.

5.5 R3: Hi-Fi Prototyping & Refinement

5.5.1 What Changed Since Round 2

This round implements the key decisions from Round 2 and delivers a near-production flow that is both logic-complete and interface-complete. The focus is to confirm that the Dimension to Interpretation to Method chain works end-to-end with standardized labels, integrated risk notes, and exportable outputs for both individuals and teams.

1. Unifying Method and Mechanism.

In this guideline, a Method refers to a concrete onboarding option that leads can apply in practice, such as using a specific platform, tool, or structured activity. For example, this may include tools or platforms like SMEs dashboards or WalkMe, each representing an actionable way to support users during onboarding.

2. Label-first matching implemented.

Each internal method carries one or more dimension labels. Ranking is driven by label overlap with the profile.

3. Backward standardization and mapping.

To reduce subjective inference, onboarding leads first define a **unified method library** that reflects what the company can provide. They attach Six Dimensions labels to each method based on real content and constraints. Matching then runs **backward** from labeled methods to a given profile, creating one to one or one to few correspondences. Details of this workflow are presented in Section 5.5.2.

5.5.2 Output Package: Interface & Logic Walkthrough

Dimension Matrices & Profile Codes

This round introduces two compact matrices that encode the six onboarding dimensions into lookup-friendly profile codes.

1. Behavior Dimension Matrix (B1-B8)

The Behavior Dimension Matrix combines the three behavior traits (Collective vs Individual, Investiture vs Divestiture and Sequential vs Random) into eight canonical profiles B1-B8.

▼ Each cell expresses one 3-trait combination (e.g., B1 = Collective + Investiture + Sequential).

Figure 5.x - Behavior Dimension Matrix.

Behavior Dimension Matrix					
		Sequential		Random	
		Investiture	Divestiture	Investiture	Divestiture
Collective	B1 C-Inv-Se	B3 C-Div-Se	B2 C-Inv-Ra	B4 C-Div-Ra	Collective
Individual	B5 Ind-Inv-Se	B7 Ind-Div-Se	B6 Ind-Inv-Ra	B8 Ind-Div-Ra	Individual

2. Scenario Dimension Matrix (S1-S8)

The Scenario Dimension Matrix combines the three context traits (Fixed vs Variable, Formal vs Informal and Serial vs Disjunctive) into eight canonical profiles S1-S8.

Scenario Dimension Matrix							
		Formal		Informal			
		Serial	Disjunctive	Serial	Disjunctive		
Fixed	S1 Fx-Fo-Sr	S3 Fx-Fo-Ds	S2 Fx-Inf-Sr	S4 Fx-Inf-Ds	Fixed		
Variable	S5 Va-Fo-Sr	S7 Va-Fo-Ds	S6 Va-Inf-Sr	S8 Va-Inf-Ds	Variable		

Figure 5.x - Scenario Dimension Matrix.

3. Behavior x Scenario Combinations (BxS)

A person's profile is expressed as a pair B#-S#. Rows = B1-B8 (from the Behavior matrix) and columns = S1-S8 (from the Scenario matrix).

The cross grid yields 8 x 8 = 64 possible profile codes used for label-first matching.

Table 5.x - Behavior-Scenario Combination Grid.

Note: To avoid duplicate diagramming work, the composite grid table below was auto-generated with ChatGPT from my matrix definitions; labels and semantics are mine.

	S1	S2	S3	S4	S5	S6	S7	S8
B1	B1-S1	B1-S2	B1-S3	B1-S4	B1-S5	B1-S6	B1-S7	B1-S8
B2	B2-S1	B2-S2	B2-S3	B2-S4	B2-S5	B2-S6	B2-S7	B2-S8
B3	B3-S1	B3-S2	B3-S3	B3-S4	B3-S5	B3-S6	B3-S7	B3-S8
B4	B4-S1	B4-S2	B4-S3	B4-S4	B4-S5	B4-S6	B4-S7	B4-S8
B5	B5-S1	B5-S2	B5-S3	B5-S4	B5-S5	B5-S6	B5-S7	B5-S8
B6	B6-S1	B6-S2	B6-S3	B6-S4	B6-S5	B6-S6	B6-S7	B6-S8
B7	B7-S1	B7-S2	B7-S3	B7-S4	B7-S5	B7-S6	B7-S7	B7-S8
B8	B8-S1	B8-S2	B8-S3	B8-S4	B8-S5	B8-S6	B8-S7	B8-S8

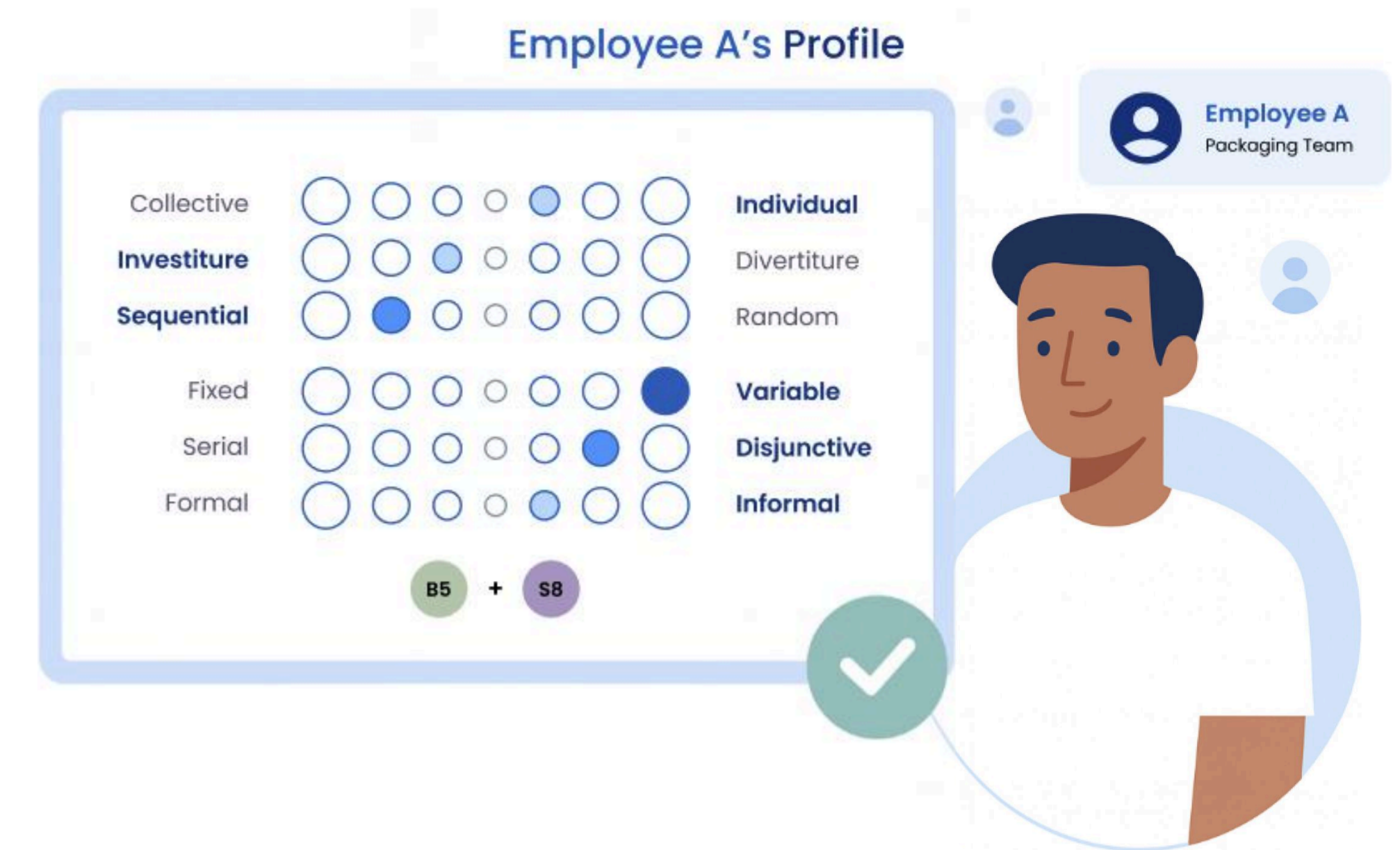
4. Example profile used in R3 (Employee A: B5 + S8).

B5 = Individual + Investiture + Sequential

S8 = Variable + Informal + Disjunctive

In Round 3, this profile (See fig. X.X) is used as the running example to demonstrate the end-to-end flow from profile input to the generated method list and the related interface screens.

Figure 5.x - Example profile (Employee A).



Method Rating Template (-3 to +3 Scale)

Method	D1	D2	D3	D4	D5	D6	Code Mapping
Method 1	1	-1	-2	+3	+2	+1	B5 + S8
Method 2	2	-2	-2	+1	+2	+1	B5 + S8
Method 3	n						B + S
...	n						B + S

Table 5.x - Massive Rating Template.

5. Method Rating Template

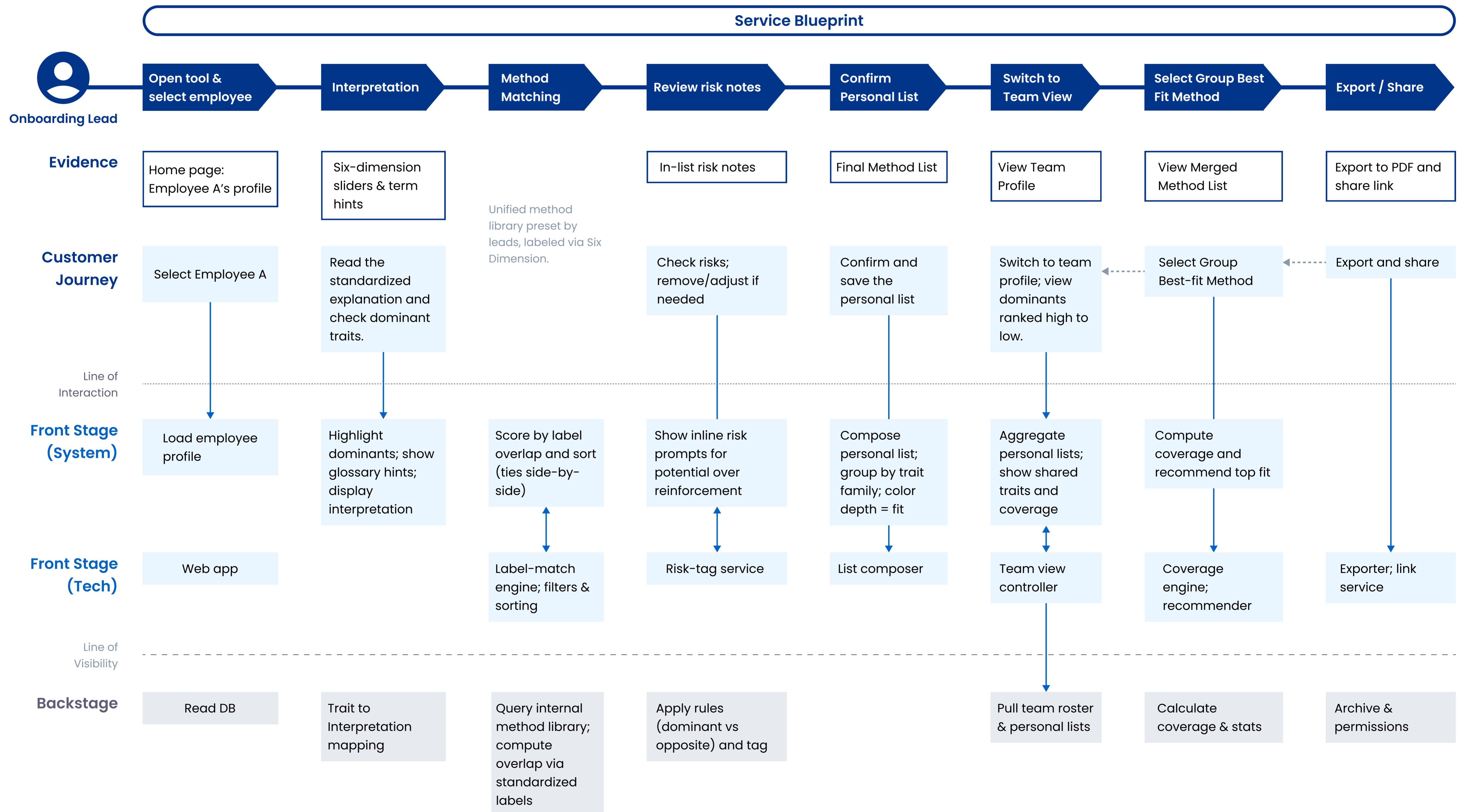
Before onboarding methods can be matched to employee profiles, all candidate methods are consolidated into a unified template. This rating creates a standardized representation of methods that mirrors the structure of employee profiles. (e.g., D1 = Collective vs Individual, D2 = Investiture vs Divestiture, ... up to D6 = Formal vs Informal).

Each method is rated across the six dimensions on a -3 to +3 scale, where negative values indicate strong alignment with the left-end trait and positive values with the right-end trait. The resulting table enables direct comparison between methods and profiles. Each method receives a code mapping (e.g., B5 + S8) derived from its rating pattern, which can then be matched against employee profiles in the same format.

Service Blueprint

To translate the refined logic into an implementable service, a service blueprint is introduced. It visualizes the onboarding lead's journey alongside the supporting operations, aligning what is visible to the lead (Evidence, Customer Journey, Front-Stage actions and Technology) with what happens behind the scenes (Backstage activities and Support Processes), separated by the Lines of Interaction, Visibility, and Internal Interaction.

Figure 5.x - Service blueprint for the profile-to-method flow.



5.5.3 Final Test

Objective

The final test aimed to evaluate whether the refined guideline could support onboarding leads in a realistic setting. Rather than measuring isolated interface functions, the focus was on whether the prototype logic and workflow could be meaningfully understood and applied in the context of onboarding during digital transformation.

Method

A contextualized usability test approach was adopted. The participants were asked to act from the perspective of onboarding leads, evaluating whether the process of moving from employee profiles to matched onboarding methods was understandable and applicable.

The evaluation was conducted qualitatively, combining:

- **Think-aloud walkthroughs**, where participants verbalized their reasoning while engaging with the prototype.
- **Open interviews**, which were conducted with each participant to capture reflections on clarity, workflow consistency, and perceived applicability of the prototype in real onboarding situations.

Participants

Four participants took part in the test:

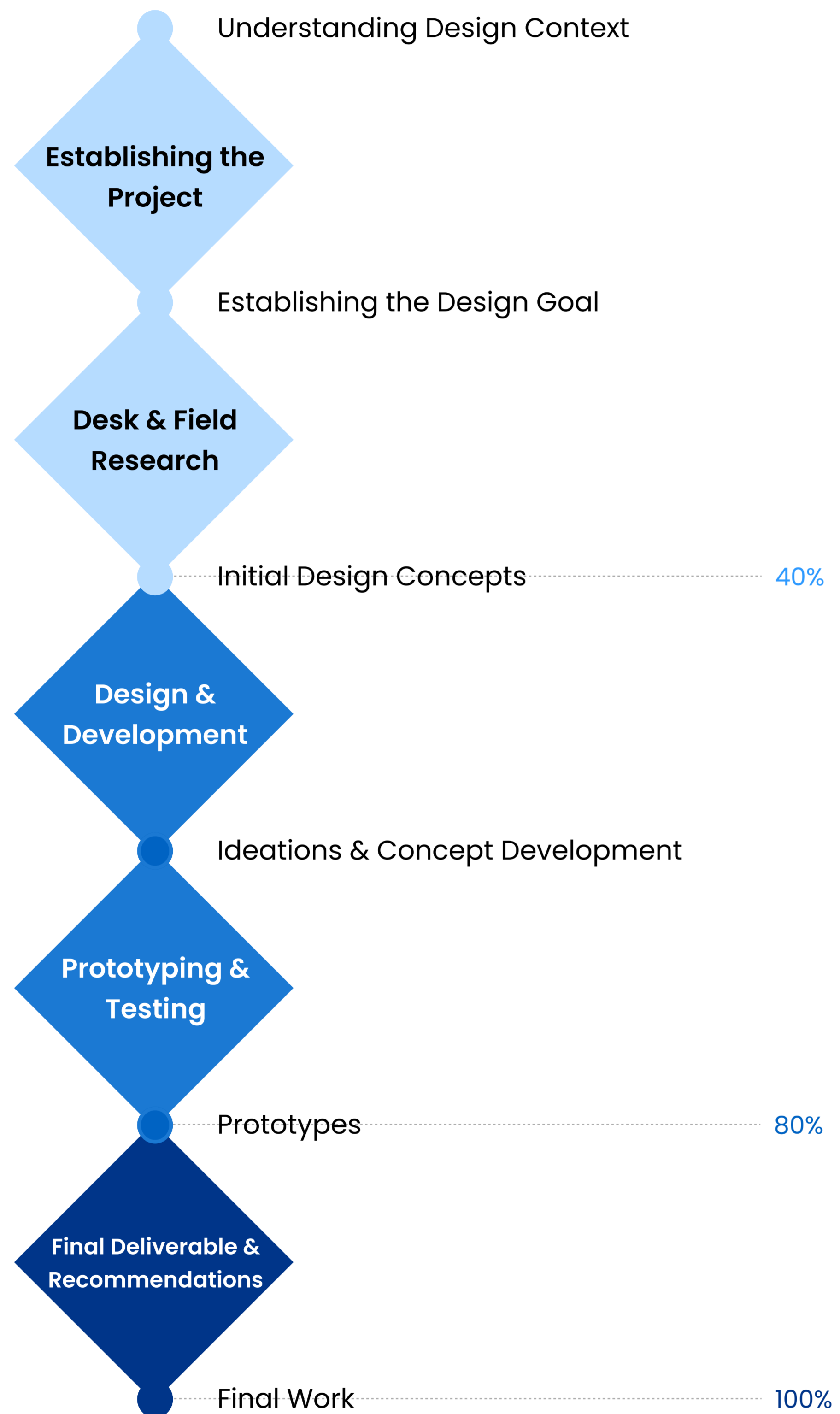
- Two internal employees from Amgen's Digital Transformation Team.
- Two external professionals with prior experience in digital transformation projects at other companies.

Limitations

This test did not attempt to replicate a live onboarding session, nor did it include the complete survey-based profiling process. Instead, it was designed as a scenario-based evaluation focusing on logic and workflow. The method ensured that the prototype was meaningfully assessed while acknowledging that practical performance in real onboarding environments would require further validation.

Feedback

The qualitative feedback collected from this test and final interface are not detailed in this chapter. Instead, it is synthesized and discussed in Chapter 6: Improvements & Recommendations, where it serves as the basis for outlining refinement directions and practical recommendations.



6. Final Deliverable & Recommendations

This chapter presents the final deliverable of this project and reflects on the outcomes of the validation process. It introduces the completed onboarding guideline, combining a refined backend logic with a functional frontend interface that enables onboarding leads to generate personalized training methods.

The chapter then outlines the detailed components of the deliverable, including the logic system, interface walkthrough, and group-level application. Feedback from the final round of testing is summarized into key limitations and paired with recommendations, highlighting areas for refinement in future iterations. By concluding with reflections on broader implications, this chapter not only consolidates the project outcomes but also positions the guideline as a foundation for continuous improvement within Amgen and beyond.

6.1 Introduction

This chapter presents the final deliverable of the project and reflects on the outcomes of the last round of testing and this whole project. The final deliverable guideline combines the refined logic structure with the interface, providing a complete representation of how onboarding leads can generate personalized training methods.

Although the final test confirmed that the overall logic and workflow were coherent, it also produced several constructive suggestions. These did not require fundamental changes to this guideline but highlighted opportunities for improvement and potential directions for future development. To capture these insights in a structured manner, the feedback and the corresponding responses are presented together in Section 6.3. For each feedback point, an explanation or solution is provided to clarify how the issue could be addressed, either conceptually or in future iterations.

By integrating the feedback with recommendations, this chapter not only demonstrates the maturity of the final deliverable but also positions the project outcomes as a foundation for further refinement in Amgen and other organizations undergoing similar digital transformation challenges.

6.2 Final Deliverable

6.2.1 Backend Logic

This storyboard illustrates the backend logic of how the onboarding guideline is applied in practice.

Before the actual process starts, **Step 0** takes place: onboarding leads work together to unify a standard list of onboarding methods and label each method with the corresponding traits. This step sets the foundation but is not part of the active rollout.

From Step 1, the onboarding lead begins with employee profiles generated through questionnaires. Amgen has the capability to collect system users' data internally, but since this project focuses on providing a framework for translating profiles into onboarding strategies, the data collection process itself is outside the scope of my design.

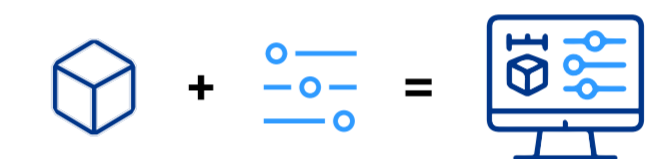
The **backend logic involves two layers of matching**: first, onboarding methods are scored and labeled against the six dimensions to establish a standardized method library; second, employee profiles are expressed using the same six-dimensional framework after survey results are processed. **Because both sides use the same coding system, they can be directly compared**, and the storyboard then visualizes how each profile is interpreted, mapped against methods, merged into a team list, and finally exported into a practical onboarding plan.

Note: The coding system that enables this process is introduced in section 5.5.2, and a more illustrative version of the onboarding lead journey is presented in the final showcase poster (see Appendix 10).

Fig. 6.1 - Backend logic and its mirrored matching between methods and profiles.



Step 0: Onboarding leads sit together to create a unified standard list of onboarding methods. Each method is labeled with one or more traits across the six dimensions.



Step 1: After surveys are completed, employee profiles are generated based on the same six-dimensional traits.



Step 2: The labeled employee profile and the labeled method list are compared. Matching across the six-dimensional produces a personalized list of methods suitable for that profile.



Six Dimensions: Framework used for labeling methods and profiles



System Users: Employees whose data are collected and translated into profiles



Training Methods: Standard list of onboarding methods created by onboarding leads



Profile (labeled): Employee profile expressed with six-dimensional traits



Method (labeled): Onboarding methods expressed with six-dimensional traits

6.2.2 Frontend Interface

While the backend logic ensures that employee profiles and onboarding methods can be systematically matched, the frontend interface translates this process into a clear and linear experience for onboarding leads. From their perspective, the system operates as a step-by-step flow: starting from the profile input, moving through trait visualization, and ending with a generated list of suitable methods.

To illustrate the process, Employee A is used as an example. This profile serves as the input for the frontend demonstration.

Fig. 6.2 - Six dimensional overview with polarity and priority bubbles.

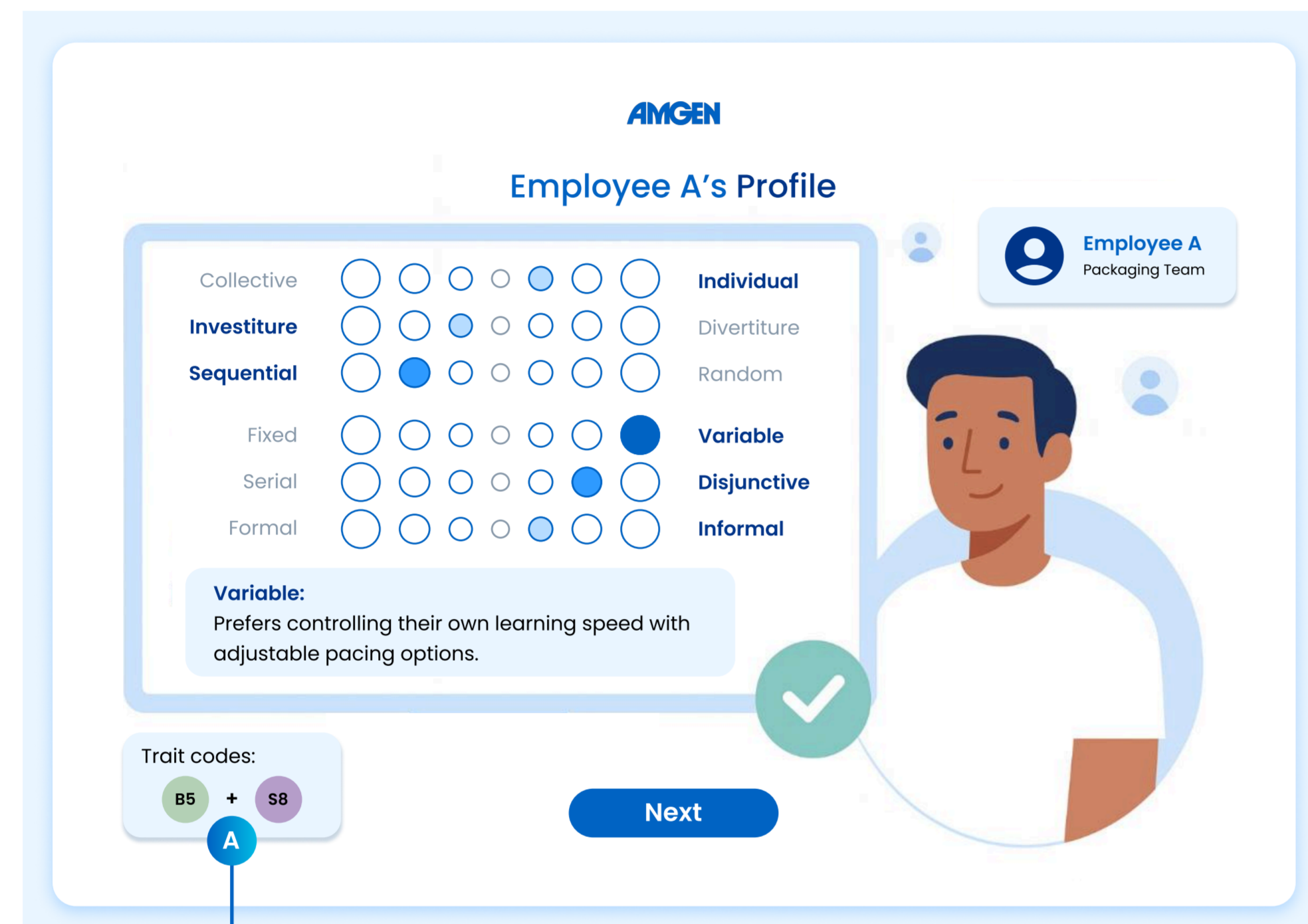
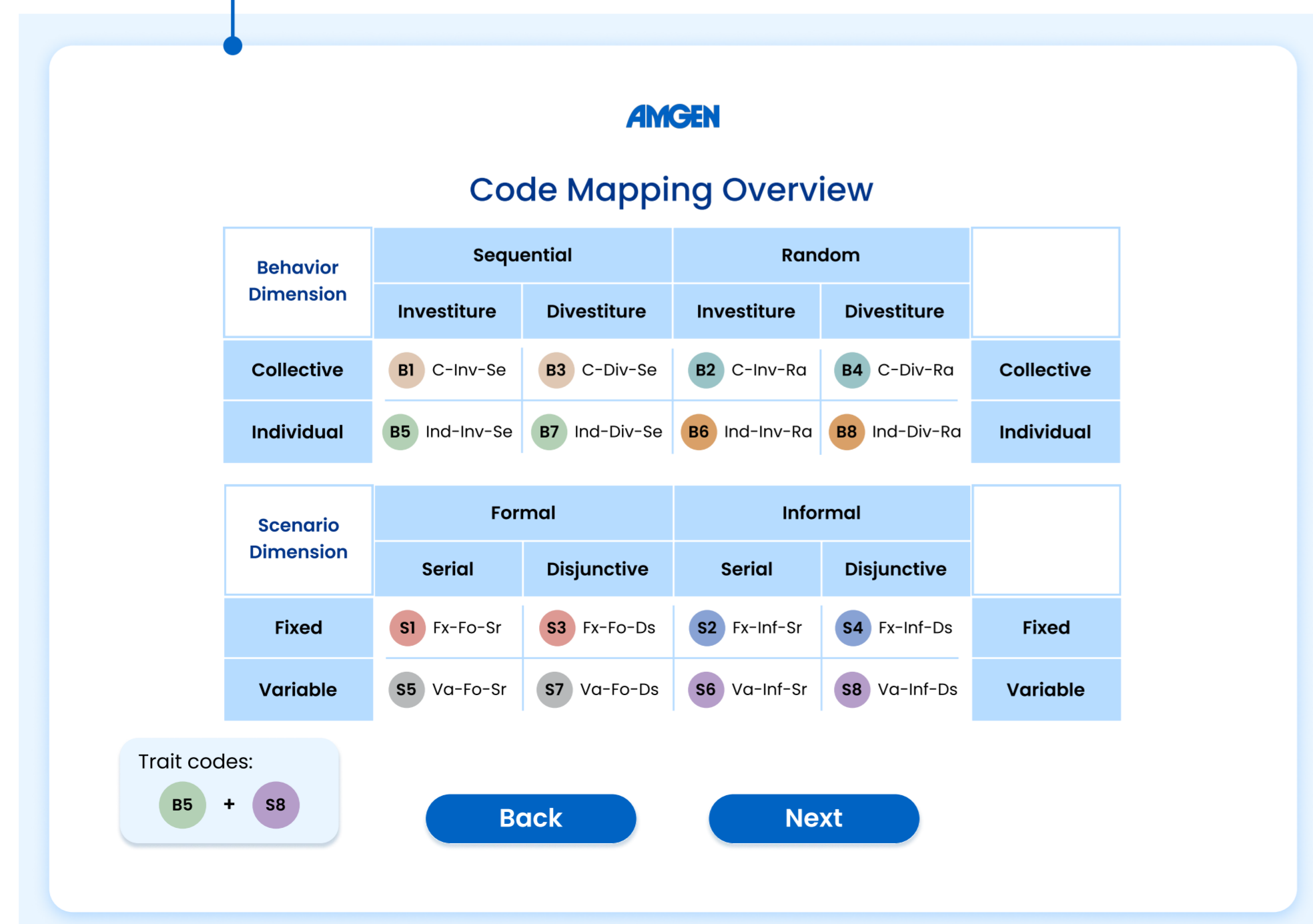


Fig. 6.3 - Code mapping system linking profile traits to standardized codes



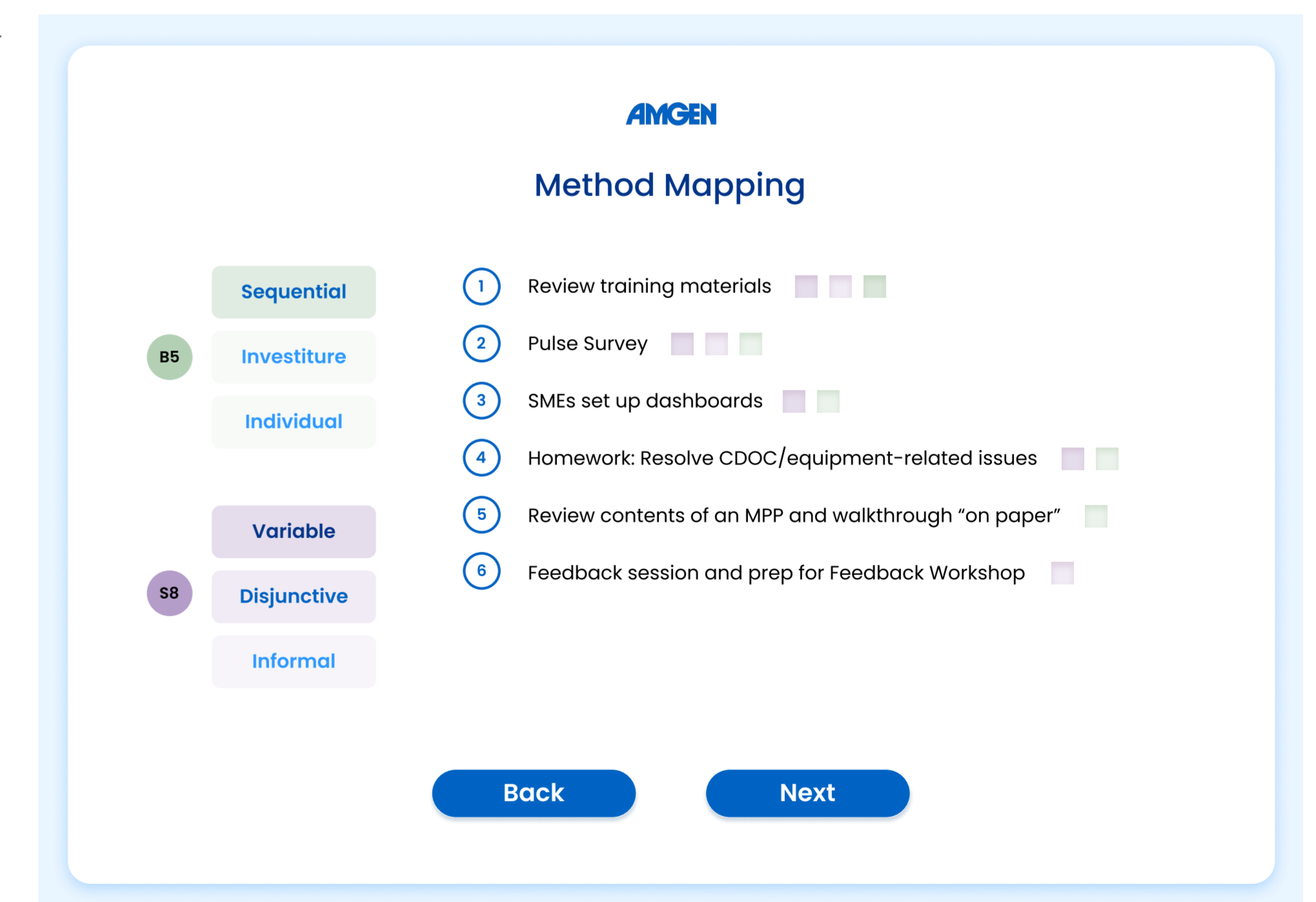
For Employee A, the resulting code is **B5 + S8**. If onboarding leads wish to understand how this code is derived, they can click the code shown in the lower-right corner of the interface **A**. This opens the Code Mapping Overview, where the underlying trait matrices are displayed.

In the Method Mapping interface, the left-hand side displays Employee A's trait preferences, ordered by strength. Darker colors indicate stronger alignment with a given trait, highlighting where the profile is most distinct. On the right-hand side, a set of representative methods is shown.

Note: These methods are simulated examples, included here to demonstrate how the mapping mechanism works.

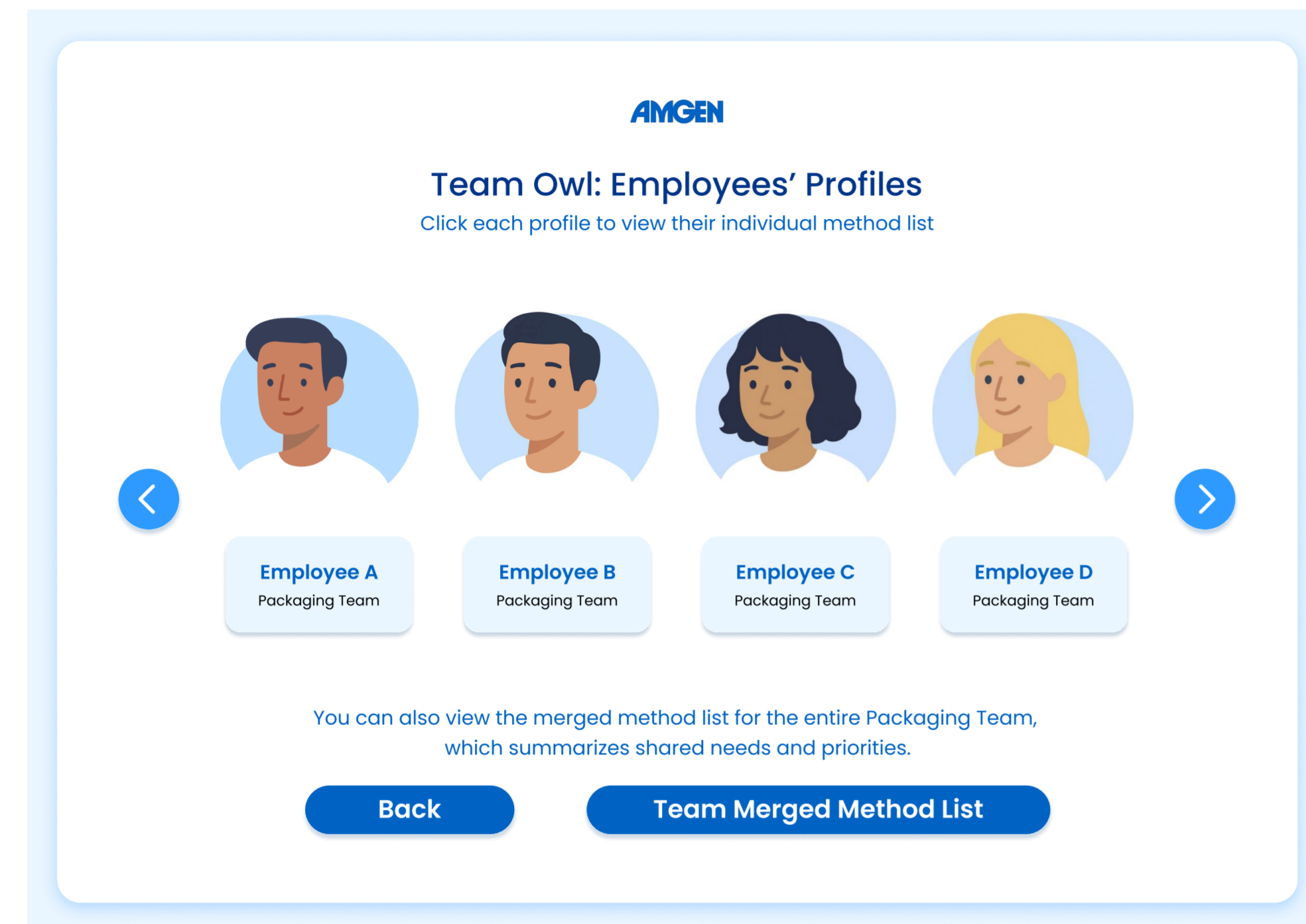
Each method carries **predefined trait labels**, which are compared against the employee profile. For instance, "SMEs set up dashboards" is associated with both Variable and Sequential, matching two of Employee A's stronger preferences. At the same time, all methods are ranked from higher to lower match. Since this method shares only two traits with Employee A's profile, it appears in the third position, while the first and second methods match three traits and are therefore ranked above.

Fig. 6.4 - Example of profile-to-method mapping for Employee A.



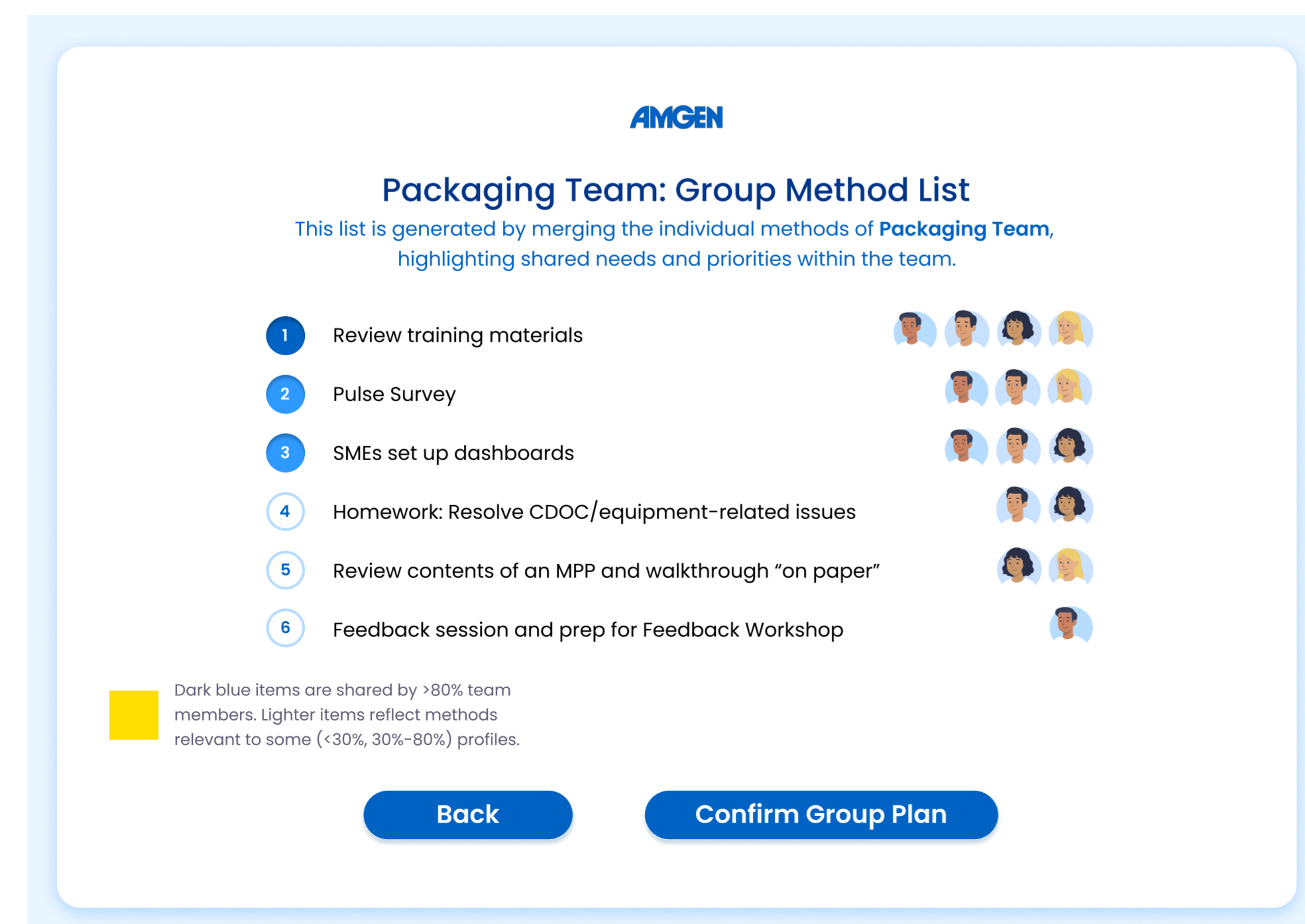
After generating the individual method lists, onboarding leads can also view the profiles at the team level. In this example, a group of four employees is shown (See fig. 6.5). The interface allows the onboarding lead to either review each individual profile separately or directly access the merged method list for the team.

Fig. 6.5 - Team-level profile overview (individual profiles selectable).



The merged list, aggregates the individual results and displays methods ranked by the extent to which they are shared across team members. For instance, "Review training materials" appears at the top because it is selected by all four employees.

Fig. 6.5 - Team-level profile overview (individual profiles selectable).



Compared to earlier prototype rounds, the underlying logic remains the same. The main adjustment here is in the visual presentation: the final group list is displayed in a ranked list format rather than the card-style blocks used in previous iterations (See fig. 6.6 and section 5.4.2).

6.3 Feedback & Recommendation

This section presents the key feedback and limitations identified in the final test and outlines how they can be addressed through explanations or potential solutions. Each feedback point is paired directly with a corresponding recommendation, indicating how the issue may be developed further or resolved in future iterations.

Limitation 1: Absence of a Neutral Option

During the test, one concern raised was the handling of neutral responses in the coding system. Currently, the design enforces a binary choice between two opposing traits (e.g., Collective vs Individual). Testers questioned how the system would interpret a profile where the participant identifies with neither side and selects a neutral position.



Recommendation:

For the current stage, the neutral option is intentionally excluded. The reasoning is that **forcing a preference helps reveal dominant tendencies**, which is essential for generating actionable onboarding strategies. If users select "neutral" too often, the resulting profile becomes overly generic and less useful for tailoring methods.

As a practical mitigation, the survey stage can include a short note encouraging participants to choose either side when possible, in order to increase the clarity of their profile. For future development, a more advanced coding system could incorporate neutral values or weighted scoring, allowing the guideline to capture more nuanced preferences while preserving interpretability.

Limitation 2: Lack of Scoring Precision for Methods

A second limitation concerns how training methods are defined within the coding system. While employee profiles are expressed on a graded -3 to +3 scale, indicating the strength of each preference, the current method labeling does not distinguish between strong and weak alignment. This creates a gap: if an employee shows a strong preference for a trait such as Variable, the system cannot always reflect the degree to which a method emphasizes that same trait. As a result, prioritization between methods may appear inconsistent.

Method Rating Template (-3 to +3 Scale)

Method	D1	D2	D3	D4	D5	D6	Code Mapping
Method 1	1	-1	-2	+3	+2	+1	B5 + S8
Method 2	2	-2	-2	+1	+2	+1	B5 + S8



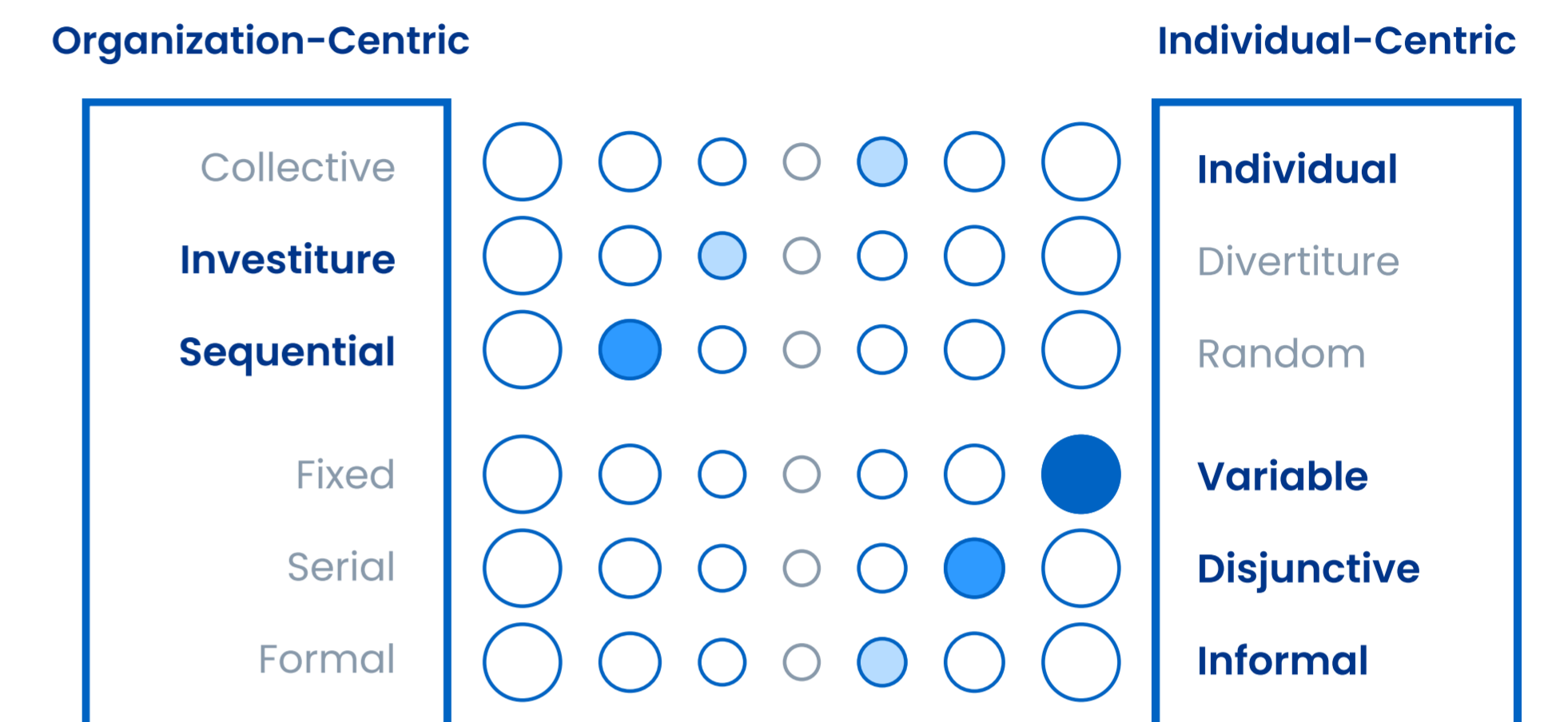
Recommendation:

Two potential approaches can be considered:

- 1. Simplification through binary labels:** Methods can be assigned only categorical labels (e.g., "Variable present" vs "Variable absent"), without trying to quantify strength. This would reduce ambiguity but also flatten the differentiation between methods.
- 2. Enhanced scoring through algorithmic support:** Future development could involve AI-assisted analysis or organizational knowledge bases to estimate the relative weight of traits in each method. For example, methods could be automatically rated as strongly, moderately, or weakly aligned with a trait, based on historical onboarding data or expert annotation.

Limitation 3: Polarization within Group Profiles

A limitation was observed in the generation of group-level method lists. When individual profiles within a team cluster strongly toward opposite ends of a dimension, such as Organization-Centric VS. Individual-Centric, the merged output may disproportionately favor one side. This results in a single method list that fails to accommodate the needs of users on the opposite end.



Recommendation:

To address this limitation, onboarding leads could consider dividing the group into **sub-groups** when polarization is evident.

One subgroup would follow strategies suited to Organization-Centric preferences, while the other would adopt methods aligned with Individual-Centric tendencies. This ensures that each extreme orientation is adequately supported, rather than forcing a one-size-fits-all solution.

In future development, automated detection of such polarization could be incorporated, prompting the onboarding lead to decide whether to split the group or apply tailored flexibility for minority users.

6.4 Conclusion

The central objective of this research was to design a guideline that enables onboarding leads to translate employee profiles into actionable onboarding methods through a verifiable and extensible process. The final deliverable demonstrates how this can be achieved by combining a coding system with an interface that visualizes the logic of profile-to-method mapping. By assigning both profiles and methods to the same six-dimensional coding framework, the system provides a structured way to generate a reliable match between individual preferences and available onboarding strategies.

While the project has established a coherent and usable guideline, it is important to acknowledge several limitations. As discussed in Section 6.3, the coding process may face challenges when users choose neutral positions, when method ratings are not clearly defined, or when group profiles become polarized. These limitations do not undermine the validity of the framework but highlight opportunities for refinement in future iterations.

Looking ahead, onboarding remains a dynamic process that must adapt to evolving organizational contexts. The six dimensions used in this project offer a strong foundation, yet future work may require revising or expanding the framework to include additional factors, such as task complexity or digital readiness, and to address varying degrees of preference strength. Similarly, the method library itself will need to be continuously updated to reflect the changing practices of real onboarding programs.

Amgen has already begun testing this framework within its digital transformation initiatives, and the expectation is that its applicability will extend to other organizations facing similar challenges. Ultimately, the value of this research lies not only in the immediate prototype but also in its potential as a flexible foundation for ongoing development and cross-organizational adoption.

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Appendix

1. Graduation Brief
2. General Onboarding Timeline
3. Content-based Guided Onboarding
4. Structured Social Onboarding
5. Field Research: Steps of Test and Interview Setup
6. Hybrid Coding Process
7. Dimension Interpretation Table
8. Onboarding Method & Mechanism Insight
9. Full Profile-to-Mechanism Reports for All Testers
10. Showcase

1. Graduation Brief – Kick Off Meeting

DESIGN FOR our future



Personal Project Brief – IDE Master Graduation Project

Name student Siqi Huang Student number 6021700

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT
 Complete all fields, keep information clear, specific and concise

Project title Designing Adaptive Onboarding Frameworks for Digital Transformation at Amgen

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

Amgen is a global biotechnology company specializing in innovative therapies. Its location in Breda, the Netherlands, manages manufacturing and logistics of final packaged drug products, including labeling, packaging, storage, and global distribution.

Within Amgen Operations, the Process Development (PD) organization is responsible for product and process development for drug substance, drug product and devices (for combination products). This project is being executed within the Digital Transformation department within the Combination Product Operations organization in PD specifically, focusing on the implementation of a digital thread for product and process development.

Design Context and Stakeholders:
 Amgen has made a strategic decision to implement a next generation (Next-Gen) Product Lifecycle Management (PLM) platform to set up a digital thread for product and process development and accelerate tech transfers to achieved increased speed and efficiency in getting its drugs to patients. This is deployed via the 3DEXPERIENCE platform by Dassault Systems utilized by Amgen as Software-as-as-Service (SaaS).

This requires an enterprise-wide transformation and organizational change management (OCM) requiring a majority of the functions within PD to switch from a siloed document-driven approach to a data-driven approach and increased collaboration. Despite its potential benefits, the transition to New platform has presented challenges in user adoption and engagement, particularly during the onboarding phase.

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introduction (continued): space for images

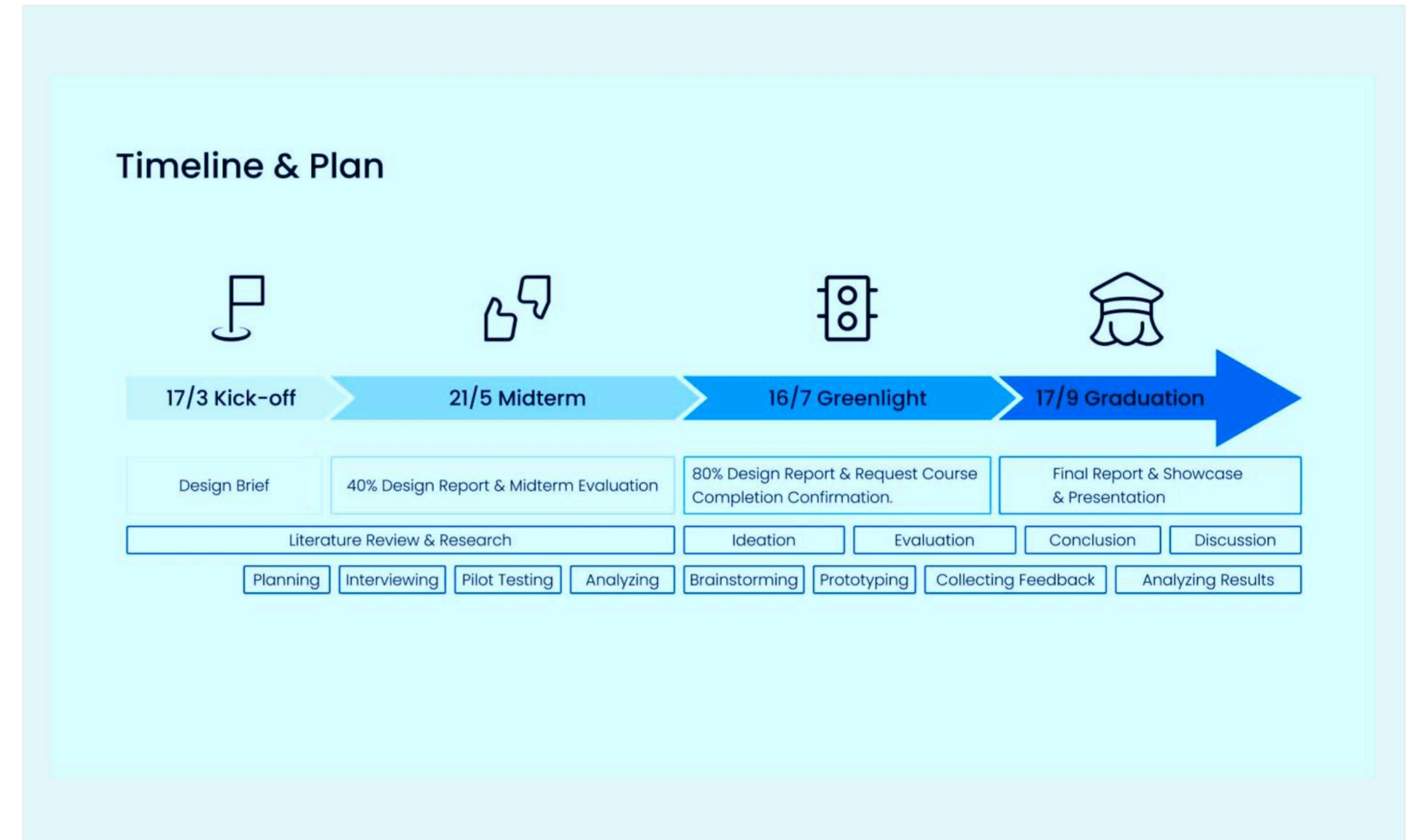


image / figure 1 Graduation Project timeline and plan.



image / figure 2

Personal Project Brief – IDE Master Graduation Project

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

Amgen is currently focusing on scaling up onboarding across several digital thread workstream, with a goal to consistently achieve effective adoption from targeted internal user groups. Research highlights key challenges in digital onboarding, including low user engagement, steep learning curves, and misalignment between training content and real-world workflows (Magistretti et al., 2021; Yu et al., 2023), resulting in a poor user experience and contributing to delayed adoption and sub-optimal utilization of digital tools.

Preliminary semi-structured interviews conducted with PD team members from different technical backgrounds and age groups indicate that:

1. The onboarding process is perceived as time-consuming and not sufficiently interactive.
2. The system's value is unclear to many employees, affecting motivation to adopt it.
3. Training materials lack adaptability to different expertise levels, hindering retention.

To address these issues, this project aims to identify the root causes of onboarding inefficiencies and develop an adaptive framework that enhances engagement, accelerates learning, and facilitates smoother adoption. By leveraging design thinking, dynamic capability theories, and user-centered strategies, this framework will provide

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design a holistic user-centered onboarding framework for enterprise-wide digital transformation to support seamless transition in business processes and ensure sustainment of changes implemented.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

To create a user-centered onboarding framework that facilitates a seamless transition during Amgen's digital transformation, I will begin by conducting literature research on digital transformation processes, onboarding strategies, and user experience best practices. Next, qualitative research methods, including interviews and pilot testing with stakeholders, will help identify user needs, expectations, and challenges during roll-out step.

After analyzing insights, the ideation phase will involve brainstorming solutions collaboratively. Through iterative prototyping, concept evaluation, and user feedback loops, I will refine the onboarding framework, ensuring it clearly outlines detailed roll-out steps. Finally, analyzing user feedback and results will support conclusions and broader discussions about the framework's applicability.

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting**, **mid-term evaluation meeting**, **green light meeting** and **graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief. The four key moment dates must be filled in below

Kick off meeting 17/3/2025

Mid-term evaluation 21/5/2025

Green light meeting 16/7/2025

Graduation ceremony 17/9/2025

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time

For how many project weeks

Number of project days per week

Comments:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five. (200 words max)

My ambition for this graduation assignment is driven by my strong interest in digital transformation, a topic highly relevant to many organizations today. This project provides an exciting opportunity to explore how companies effectively manage and sustain transitions to digital platforms. By independently handling a comprehensive project—from initial research to final delivery—I aim to strengthen both my design competencies and strategic thinking skills.

Through interviews, research, and my expertise in visual communication, I plan to clarify ambiguous processes and effectively visualize detailed onboarding steps. Working in collaboration with industry professionals at Amgen will significantly enhance my practical skills, bridging my current academic knowledge with future career aspirations. Additionally, I hope this framework can serve not only Amgen but also benefit similar digital transformation initiatives broadly. Engaging with cross-functional teams will further develop my teamwork, leadership, and communication abilities, aligning with my long-term goal of becoming a product manager after advancing my career as a UX or interaction designer.

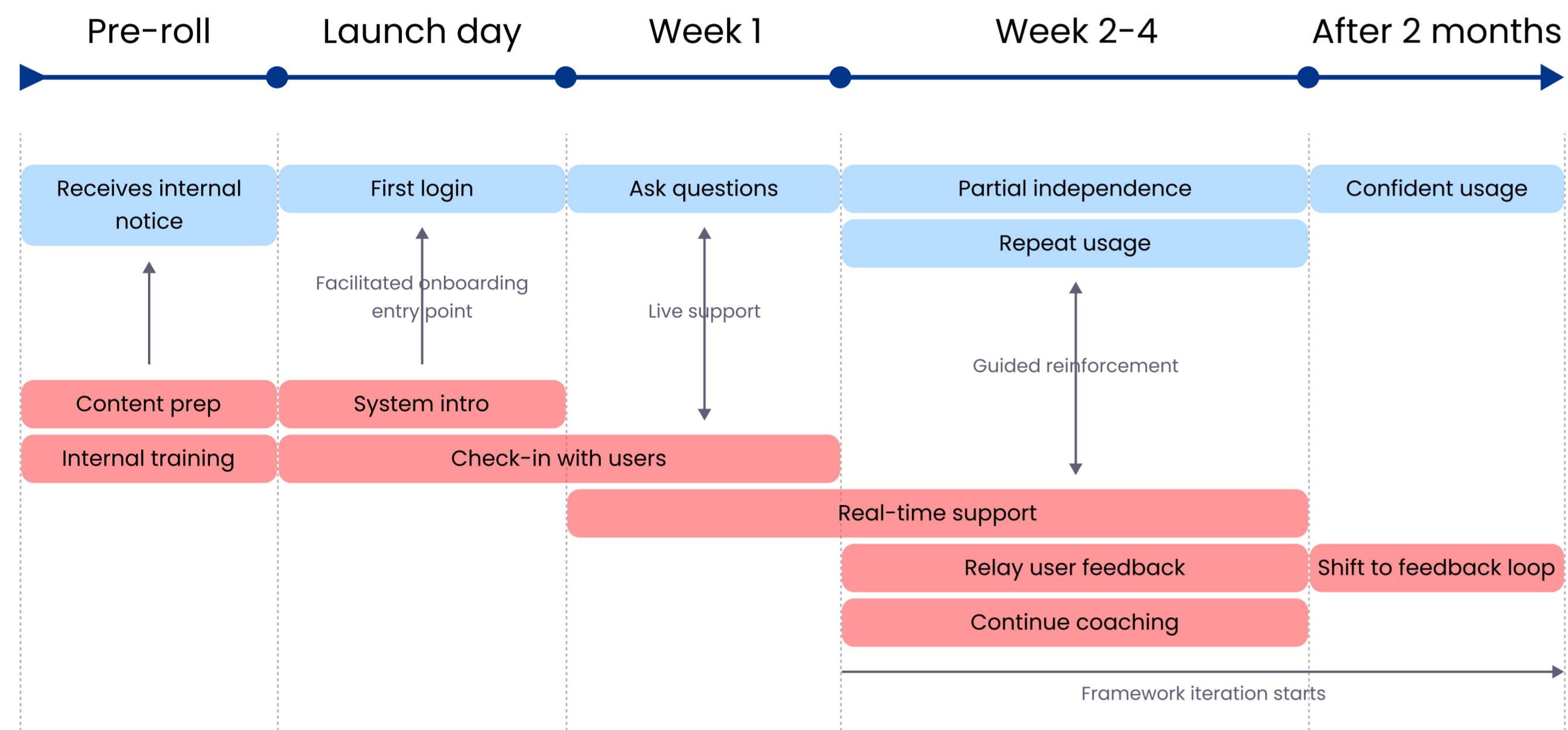
2. General Onboarding Timeline

Appendix 2 shows the main steps and key moments in onboarding, from pre-roll to post-launch. It involves gradually understanding the system and becoming confident in using it at work. The timeline below outlines key actions and touchpoints at each stage.

Appendix 2 - Onboarding timeline: Key actions and touch points.

This timeline does not reflect actual onboarding processes at Amgen, but represents a generalized reference structure commonly assumed in discussions.

Onboarding timeline



Onboarding leads

Onboarding leads refer to individuals within the organization who play a key role in helping others adopt new digital systems. They may act as facilitators, trainers, or peer-level coaches depending on the context.

Enterprise engineers

Enterprise engineers within an organization who use enterprise-wide software to complete daily tasks, focusing on learning the new system and integrating it into their workflow.

- Onboarding leads
- Enterprise engineers

3. Content-Based Guided Onboarding

b. Content-based Guided Onboarding

Content-based guided onboarding leverages a combination of instructional methods, such as step-by-step guides, interactive tutorials, and video walkthroughs, to support user learning and engagement during system adoption. This approach aims to accommodate diverse user preferences, lower cognitive barriers, and provide a more flexible onboarding experience.

This subsection presents a case study from IBM, focusing on the 'Your Learning' platform, which emphasizes continuous learning and upskilling through a digital learning marketplace. The platform offers a wide array of learning resources in multiple formats, personalized through AI-driven recommendations. By integrating diverse content delivery modes with adaptive learning pathways, IBM's system exemplifies how content-based onboarding can enhance user engagement and long-term skill development. The analysis draws on findings from Qin and Kochan (2020) and Stoiber (2022), providing insights into how content-based onboarding supports both immediate adaptation and sustained growth.

Appendix 3 - Multi-format guided onboarding analysis Form.

Content-based guided onboarding	
Core Features	Using multiple instructional formats to support initial user learning and reduce early-stage cognitive barriers.
	Formats typically include: 1. Step-by-step interactive guides 2. Scrollytelling tutorials 3. Video-based walkthroughs
Helps users quickly understand the basic functions when opening the tool for the first time, reducing the initial cognitive burden.	
Timeline (Focus on first-time system usage)	
<p>The diagram shows a horizontal timeline with three stages: 'First system entry', 'First tasks & exploration', and 'Optional reinforcement'. Below each stage, specific activities are listed: 'Immediate step-by-step guidance highlighting key features' for the first entry, 'Optional scrollytelling tutorials for deeper contextual explanations' for the first tasks, and 'Video tutorials available for users seeking additional help or reviewing complex workflows' for optional reinforcement.</p>	
Key Method	<ul style="list-style-type: none"> • Progressive feature introduction • Active + passive learning mix • User-driven access to resources
Usage Scenario	<ul style="list-style-type: none"> • Complex tools with diverse users • Early engagement critical for retention • Preference for self-paced onboarding

Multi-format guided onboarding	
IBM	
Method	Why useful?
Your Learning Online platform	"The 'one stop' Your Learning platform covers all the key stages in an employee's learning journey, from setting up learning goals and selecting which learning activities to engage in, to monitoring learning progress and recording learning outcomes."
AI-based personalization and nudging	"The most recent development includes a new application aimed to further boost individual learning activities through offering personalized 'nudging' and social learning."
Google: Software engineers	
Method	Why useful?
Step-by-step, hands-on online tutorials	"These are classic hands-on tutorials in which the learner follows step-by-step instructions to solve a given task using proprietary Google technologies. The important aspect here is that the learner actually gets to use the technologies directly."
Q&A support platform	"This dedicated mailing list allows new engineers to ask 'newbie' questions... one communication channel where new engineers can team up with peers and solve problems and questions collectively."
Weekly Snippets & OKRs	"Weekly Snippets. An application that allows each employee to write a very short (bullet point) report about what he or she did during the last seven days. Objectives and Key Results (OKRs). A practice that encourages Googlers to set measurable objectives."
Small-to-medium Agile teams (SMEs)	
Method	Why useful?
Internal documentation	"Documentation capturing local knowledge about data structures, algorithms, and control flow of the project."
Product overview (video, presentation)	"A presentation, video or similar that shows the functionality and features of their product as well as the business value."

4. Structured Social Onboarding

c. Structured Social Onboarding

Structured social onboarding supports newcomers in building trust, forming relationships, and integrating into the team culture. It emphasizes peer support, mentoring, and social rituals that foster a sense of belonging and reduce anxiety during early adoption.

This section outlines key characteristics of structured social onboarding, including peer support, role modeling, and community participation. These are informed by findings from Ng, Chan, and Qiu (2021), who highlight the importance of emotional adaptation and social connection in platform adoption. Additional evidence comes from Buchan et al. (2019), who studied Agile software teams and found that mentoring, team socializing, and psychological safety play a central role in effective onboarding. Although the study does not disclose specific company names due to confidentiality, it provides a grounded view of real-world team practices.

Appendix 4 - Structured social onboarding analysis Form.

Structured Social Onboarding	
Core Features	Strong emphasis on cultural and team integration: <ol style="list-style-type: none"> 1. Mentorship 2. Peer support 3. Team ceremonies 4. Community engagement Focus on building trust, belonging, role clarity.
Timeline (Early-stage of joining)	
Key Mechanism	<ul style="list-style-type: none"> • Peer learning & knowledge sharing • Team rituals & ceremonies • Assigned mentor system
Usage Scenario	<ul style="list-style-type: none"> • Agile team or cross-functional team • Remote or hybrid team • Large organizations with strong cultural focus • Teams emphasizing social belonging and collaboration

Structured Social Onboarding	
Microsoft: Software teams	
Method	Why useful?
Task assignment	"Task assignment enables balancing between integrating newcomers and maintaining team productivity."
Google: Software engineers	
Method	Why useful?
Tech Talks	"Tech Talks are also a good way to keep a sense of Google as a whole, to learn about what other teams are working on, what their plans are, and who their primary clients are."
Intergrouplets	"Intergrouplets are informal, ad-hoc groups that maintain various codes of practice and work to improve the quality of software development practices across teams. They contribute to the socialization of Nooglers (a name for its new hires), and support cultural coherence within the engineering organization."
Mentorship	"The mentor assigned to support enculturation during the first months allows them to convey doubts and address pressing needs with a trusted 'buddy' who has no direct operational/career relationship."
Q&A support platform	"This dedicated mailing list allows new engineers to ask 'newbie' questions... one communication channel where new engineers can team up with peers and solve problems and questions collectively."
Role model identification	"Newly hired engineers should identify successful engineers who have extensive experience of 'working (in) the system' and copy their behavior. For this purpose, a list of the most productive and influential software engineers is available on the intranet."
Weekly Snippets & OKRs	"Weekly Snippets. An application that allows each employee to write a very short (bullet point) report about what he or she did during the last seven days. Objectives and Key Results (OKRs). A practice that encourages Googlers to set measurable objectives."

Structured Social Onboarding	
IBM	
Method	Why useful?
Manager-recommended or required learning	"Managers can further add required courses and programs for their team members and review team members' learning progress."
Social learning mechanisms	"The most recent development includes a new application aimed to further boost individual learning activities through offering personalized 'nudging' and social learning."
Standardized learning target	"The organization expects every employee to spend a minimum of 40 hours in training and professional development each year, a target known as THINK 40." "This represents a shift... to an individual learning system... unlike the prior pattern, in part because employees are in control of the time spent in learning."
Learning Badge	"A learning badge is awarded after completion of designated, usually assessed, learning activities." "Skill badges are associated with hands-on application of concepts and theory. The focus of learning assessments for skill badges is on effective application of the subject matter."
AI-based personalization and nudging	"The most recent development includes a new application aimed to further boost individual learning activities through offering personalized 'nudging' and social learning."
Small-to-medium Agile teams (SMEs)	
Method	Why useful?
<ul style="list-style-type: none"> • Mentoring • pair programming • legitimate peripheral participation 	"In the Microsoft study, the problems of new graduates in onboarding are identified and the root cause of these is traced to their poor communication skills and social naïveté. The use of mentoring, pair programming and legitimate peripheral participation as onboarding techniques was shown to alleviate these issues."
Team and leadership support	"This is similar to the findings of our study which indicates the importance of team and leadership support as well as team socialization as onboarding techniques."
Spotify	
Method	Why useful?
Onboarding buddy	"Assigned onboarding buddies play a key role in helping new hires settle in, especially in a remote-first environment. They answer questions, explain team practices, and introduce new joiners to the social norms of the team."
Team introduction sessions	"We ensure all new hires are introduced on Slack and in team meetings, so they feel seen and part of the group from day one."

5. Field Research: Steps Of Test & Interview Setup

Steps Of Test

1. Research Method:

- a. Semi-structured interviews

2. Participant Profile:

- a. Total: 5 participants
- b. Selection based on earlier persona groupings: The Tech-Savvy Newcomer, The Busy Mid-Level Engineer and Tech-Naïve Experienced Engineer.
- c. Backgrounds:
 - i. Primarily Amgen employees in R&D and Operations functions (3 participants).
Two internal participants also held onboarding-related responsibilities, offering dual perspectives as both users and onboarding leads.
 - ii. Complemented by professionals from other companies with similar roles and onboarding contexts (2 participants).
 - iii. Role diversity and onboarding exposure were key considerations in participant selection.

3. Interview Setup & Flow

- a. Format: Online via Microsoft Teams
- b. Duration: Interview: ~20–30 minutes
- c. Steps:
 - i. Welcome & introduction (incl. HREC disclaimer)
 - ii. Project explanation (context, purpose)
 - iii. Open-ended questions
 - iv. Optional deep-dive or Q&A discussion
 - v. Wrap-up, thank participant, and explain data usage

4. Data Collection & Processing

- a. Audio recording
- b. Transcription
- c. Anonymized notes taken during/after session

5. Analysis Approach

- a. Thematic coding (hybrid: deductive and inductive)
- b. Affinity clustering to reveal cross-case themes and design implications

Interview Setup

1. Welcome & Introduction

- a. Before we get started, just to let you know: this session is part of my graduation project at TU Delft, in collaboration with Amgen.
- b. As approved by the TU Delft Human Research Ethics Committee, everything you share will be treated confidentially and anonymized before use. This interview will be audio recorded, and all data will be anonymized before use. If at any point you're uncomfortable or want to stop, just let me know.

2. Project Explanation

- a. This project looks into how employees at Amgen and similar organizations experience onboarding when new digital systems are introduced, specifically during the rollout of tools. I'm interested in how people actually learn to work with these systems, what kind of support they receive, and what challenges they run into along the way.
- b. So today, I'd love to hear about your experience: what supported you well, what caused friction, and how the onboarding process could have been improved.

3. Open-ended questions

- a. That's it for the setup. I'll now start asking some questions about your onboarding experiences.
- b. Just as a heads-up:
 - Task-based: hands-on learning through real tasks and execution
 - Content-based: structured learning guided by tutorials, documents, or videos
 - Social-based: peer-driven learning through discussion, mentorship, or team interaction

4. Optional deep-dive or Q&A discussion

- a. If something interesting comes up, I might ask a few follow-up questions. Also, if you have any questions or thoughts along the way, feel free to jump in, we can keep this quite conversational.

5. Thank participant & explain data usage

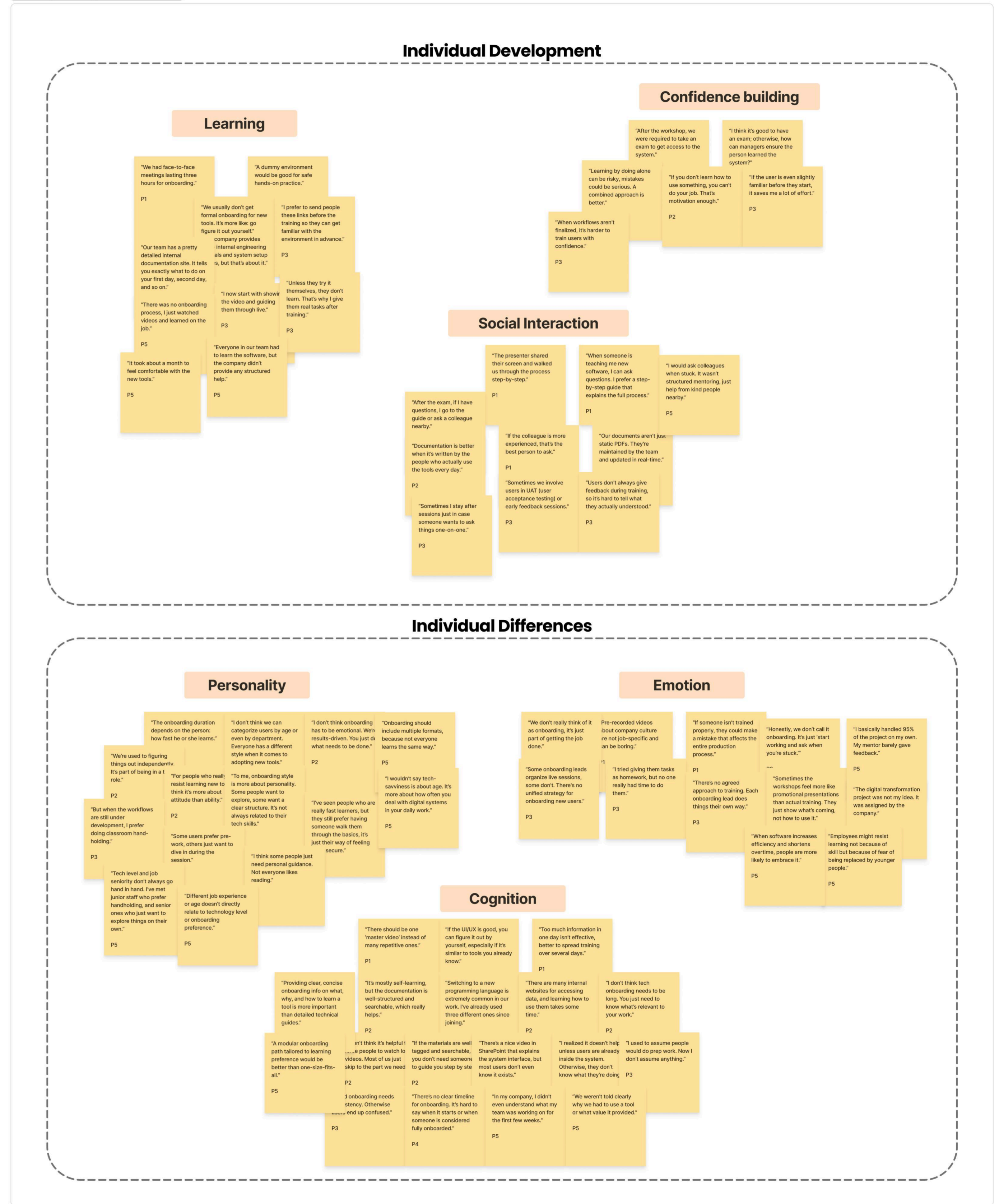
- a. Thanks for sharing your thoughts. That's the end of the main questions.
- b. As a reminder, the audio will be transcribed and anonymized, and nothing you say will be personally identifiable.
- c. If you have any final comments or questions for me, feel free to ask now. Otherwise, we're all set.

6. Hybrid Coding Process

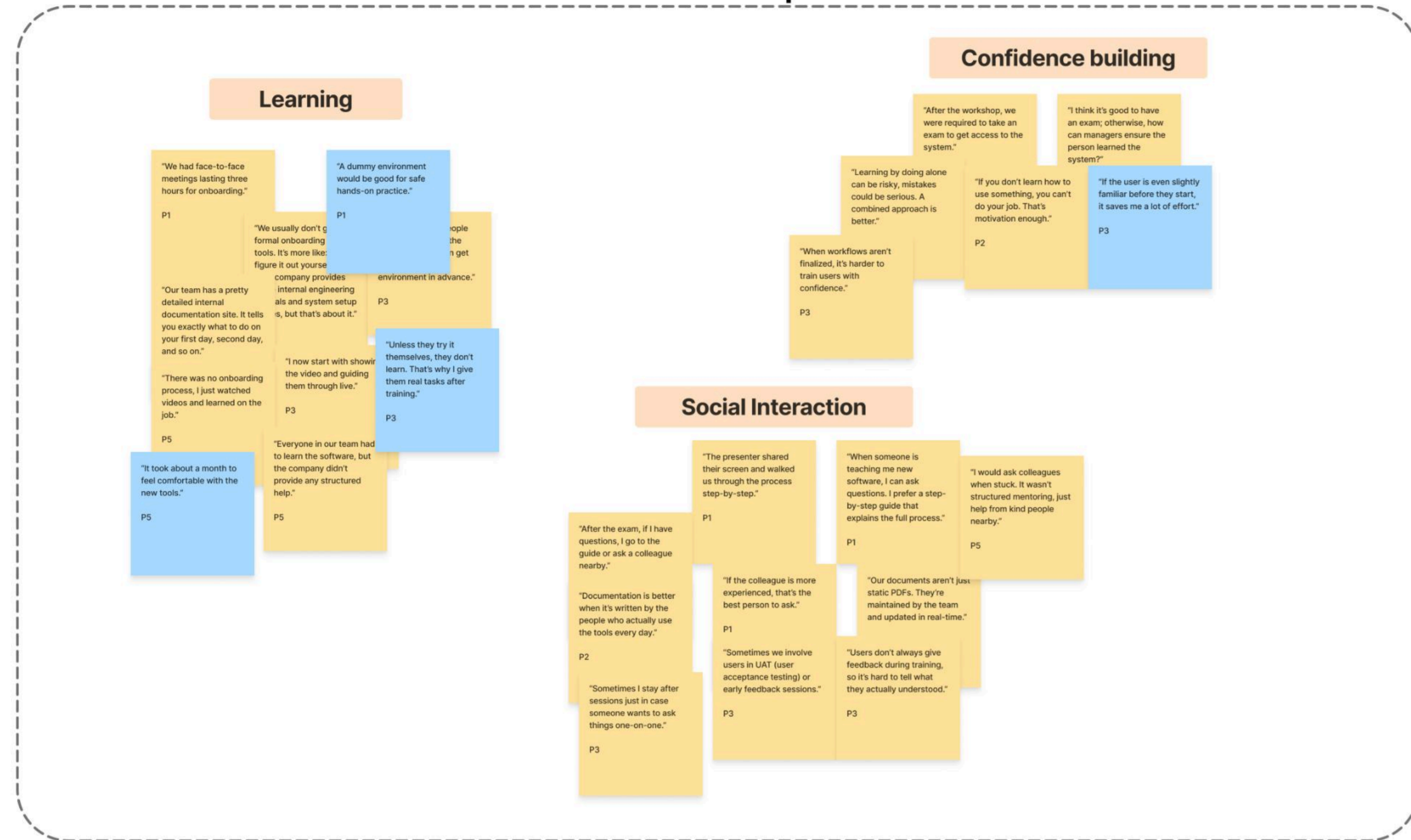
Board 1: Initial & Line-by-Line Coding



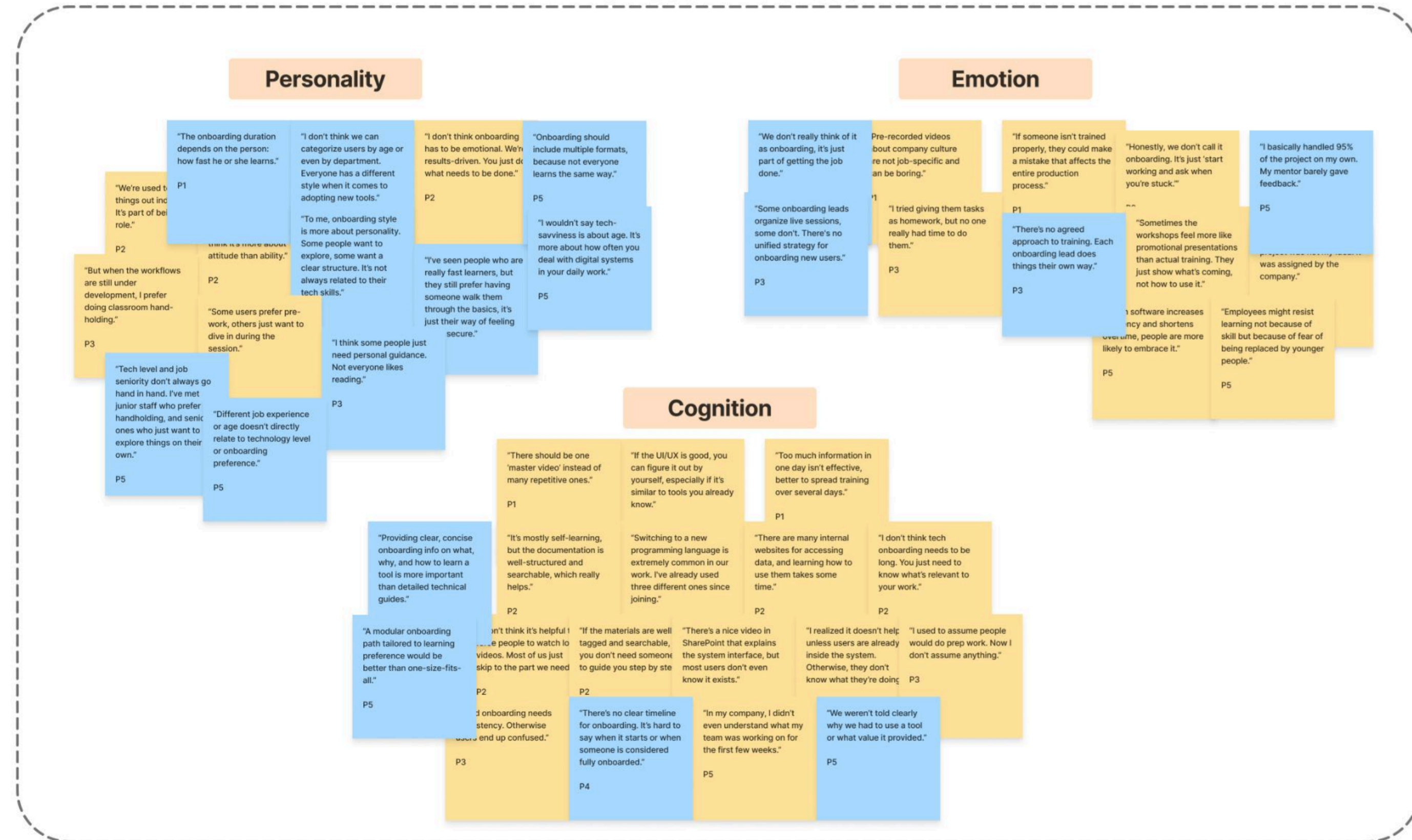
Board 2: Hybrid Coding & Theme Combination



Individual Development



Individual Differences



Insight Groups

1. Persona Misconceptions Feedback

"I wouldn't say tech-savviness is about age. It's more about how often you deal with digital systems in your daily work." P5

"Different job experience or age doesn't directly relate to technology level or onboarding preference." P5

"Tech level and job seniority don't always go hand in hand. I've met junior staff who prefer handholding, and senior ones who just want to explore things on their own." P5

"I don't think we can categorize users by age or even by department. Everyone has a different style when it comes to adopting new tools." P1

"I've seen people who are really fast learners, but they still prefer having someone walk them through the basics, it's just their way of feeling more secure." P2

2. User onboarding preferences vary widely

"Onboarding should include multiple formats, because not everyone learns the same way." P5

"If the user is even slightly familiar before they start, it saves me a lot of effort." P3

"I think some people just need personal guidance. Not everyone likes reading." P3

"Some onboarding leads organize five sessions, some don't. There's no unified strategy for onboarding new users." P3

"There's no agreed approach to training. Each onboarding lead does things their own way." P3

"To me, onboarding style is more about personality. Some people want to explore, some want a clear structure. It's not always related to their tech skills." P2

3. The timeline is not uniform, but dynamically adjustable.

"It took about a month to feel comfortable with the new tools." P5

"There's no clear timeline for onboarding. It's hard to say when it starts or when someone is considered fully onboarded." P4

"The onboarding duration depends on the person: how fast he or she learns." P1

4. Ambiguous Process and misalignment

"We weren't told clearly why we had to use a tool or what value it provided." P5

"Providing clear, concise onboarding info on what, why, and how to learn a tool is more important than detailed technical guides." P5

"I basically handled 95% of the project on my own. My mentor barely gave feedback." P5

"We don't really think of it as onboarding, it's just part of getting the job done." P2

5. Extra insight

"Unless they try it themselves, they don't learn. That's why I give them real tasks after training." P3

"A dummy environment would be good for safe hands-on practice." P1

"A modular onboarding path tailored to learning preference would be better than one-size-fits-all." P5

Design Inspirations

The new framework should be based on actual behavioral characteristics, not on age or experience.

People's choice of onboarding method is influenced by "behavioral style", "preference for structured guidance", etc.

Onboarding is a non-linear, dynamic process with teams/projects/individuals.

A clearly defined, step-by-step structure needs to be established.

Prototyping tools and training sandboxes are important mechanisms to support personalized pathways.

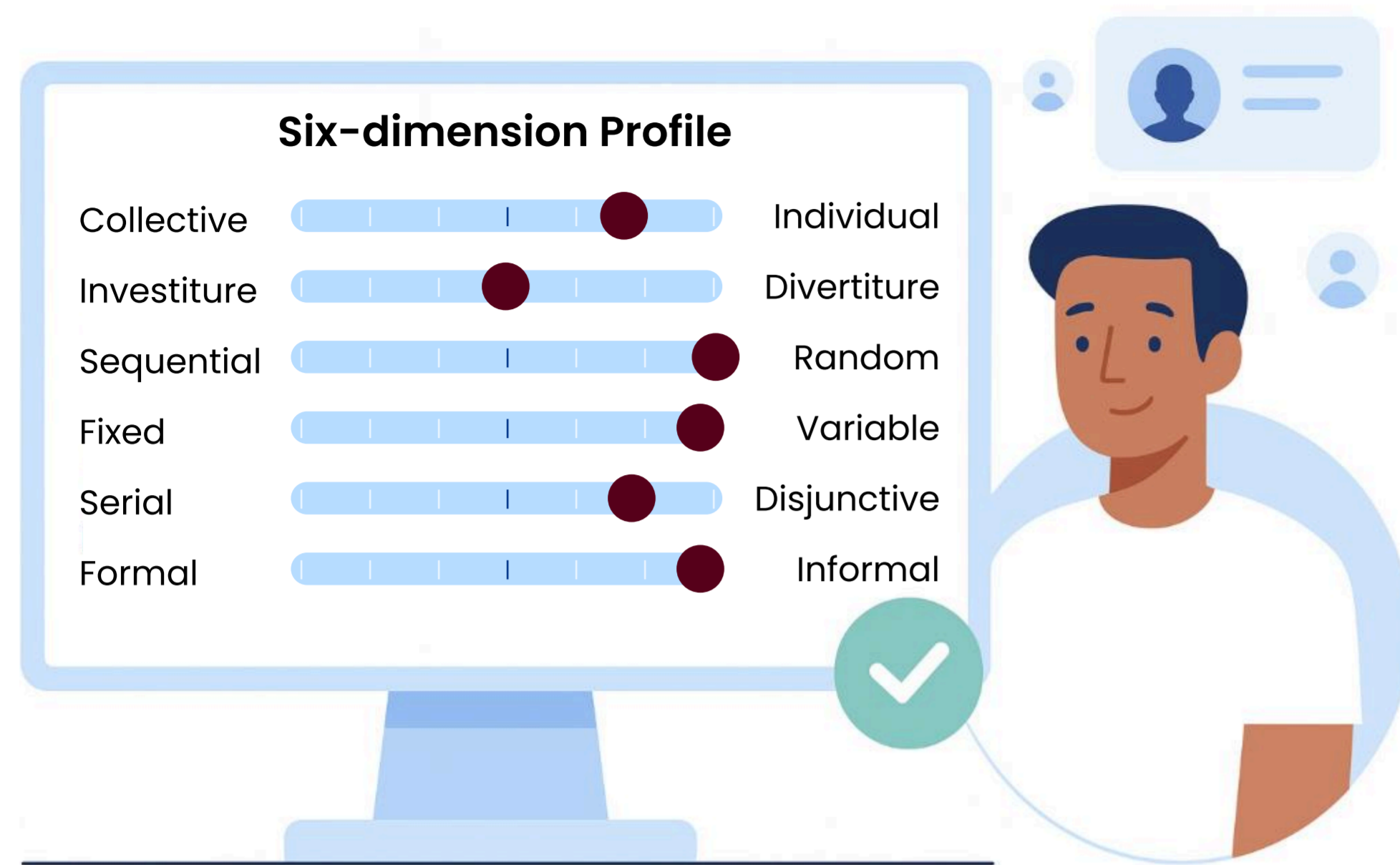
7. Dimension Interpretation Table

Profile-to-Method Matrix			
Dimension	Characteristic	Interpretation	Potential Risk
Behavior-based Dimensions			
Collective	Prefers shared experiences and group-based progression	Values learning in a social setting and draws motivation from group engagement	Groupthink or dependency on peer consensus
Individual	Comfortable working independently and setting own pace	Comfortable managing onboarding alone, needs autonomy	Isolation and lack of timely feedback or support
Investiture	Seeks recognition of prior experiences and capabilities	Feels motivated when their prior identity is respected and early responsibilities are granted	Misjudged confidence may cause under-preparation
Divestiture	Open to re-framing personal habits or values in new contexts	Responds better when onboarding challenges push them to evolve or redefine their role identity	Demotivation due to identity loss or role mismatch
Sequential	Prefers structured and stepwise progression	Feels secure when onboarding steps are clearly defined and follow a set sequence	Break onboarding into sequential milestones with guidance
Random	Comfortable with unstructured and emergent learning paths	Thrives in flexible environments with non-linear, self-directed learning opportunities	Confusion due to disconnection between tasks
Scenario-based Dimensions			
Fixed	Responds well to clear timelines and fixed milestones	Prefers predictable onboarding timelines with clear checkpoints and deadlines	Stress under rigid timelines; limited flexibility
Variable	Values flexible pacing and self-determined progress	Prefers controlling their own learning speed with adjustable pacing options	Lack of clarity on progress or expectations
Formal	Feels confident when engaging with rule-based structures	Feels more confident when learning follows formal rules, structures, or official processes	Over-standardization reduces relevance or engagement
Informal	Learns well through casual exchange and real-life observation	Feels more engaged when onboarding happens through casual interactions and peer support	Ambiguity and inconsistent knowledge acquisition
Serial	Draws confidence from support and structured feedback	Appreciates having a mentor figure to provide structured feedback and check-in guidance	Over-reliance on mentor limits autonomy
Disjunctive	Comfortable navigating novel roles without peer models	Needs onboarding tools that help self-orient without relying on peer or mentor references	Lack of orientation, risk of poor integration

8. Onboarding Method & Mechanism Insight

Onboarding Method & Mechanism Insight	
Method & Mechanism	Contextual Insight
Method	
Real Task	Helps employees develop technical familiarity and social belonging simultaneously, especially effective in engineering teams where onboarding is deeply embedded in production work.
Learning by Doing	Offers a hands-on entry into team practices while maintaining team productivity, suitable for fast-moving environments with limited time for structured training.
Task Ramp-up	Builds confidence through increasing task complexity, ideal for roles that require gradual knowledge layering or long-term ramp-up.
Product Overview	Gives employees a sense of the bigger picture, useful for cross-functional teams or roles not directly involved in product development.
Internal Documentation	Facilitates asynchronous onboarding and reduces bottlenecks, effective in mature teams or global teams operating across time zones.
Contribution-based Tasking	Enables learning through contribution, giving newcomers responsibility in a way that promotes autonomy and engagement without overloading.
Guided Modular Learning	Provides guided orientation to complex systems and supports personalized pacing and path selection.
Buddy System	Provision of regular guidance and psychological support
Mechanism	
Skill Validation Badge	Formalizes and motivates skill development, especially suited to large organizations that require scalable validation of learning outcomes.
Peer Role Modeling	Helps new employees align their behavior and expectations by observing experienced peers, particularly useful in flat or flexible team structures.
Q&A Support Platform	Fosters peer collaboration and self-service learning through informal question exchanges, useful in fast-scaling teams with dynamic issues.
Personalization and Nudging	Offers automated, adaptive learning suggestions and micro-supports, particularly helpful for distributed teams or environments with limited mentorship resources.
Weekly Reflection Loop	Encourages self-reflection and outcome-driven learning by asking employees to report and reflect weekly, reinforcing accountability and progress.
Team Integration	Reinforces emotional safety and inclusion through consistent team support, especially impactful in remote or cross-cultural settings.
Peer Learning Channels	Builds informal knowledge exchange and social reinforcement, suitable for open knowledge environments and collaborative teams.
Manager-Guided Learning Path	Ensures alignment with organizational goals and compliance standards, effective for regulated industries or performance-monitored roles.
Internal Networks & Knowledge Sharing	Promotes cross-team knowledge circulation and practice sharing, especially beneficial in large or agile organizations that emphasize learning culture.

9. Full Profile-To-Mechanism Reports For All Testers



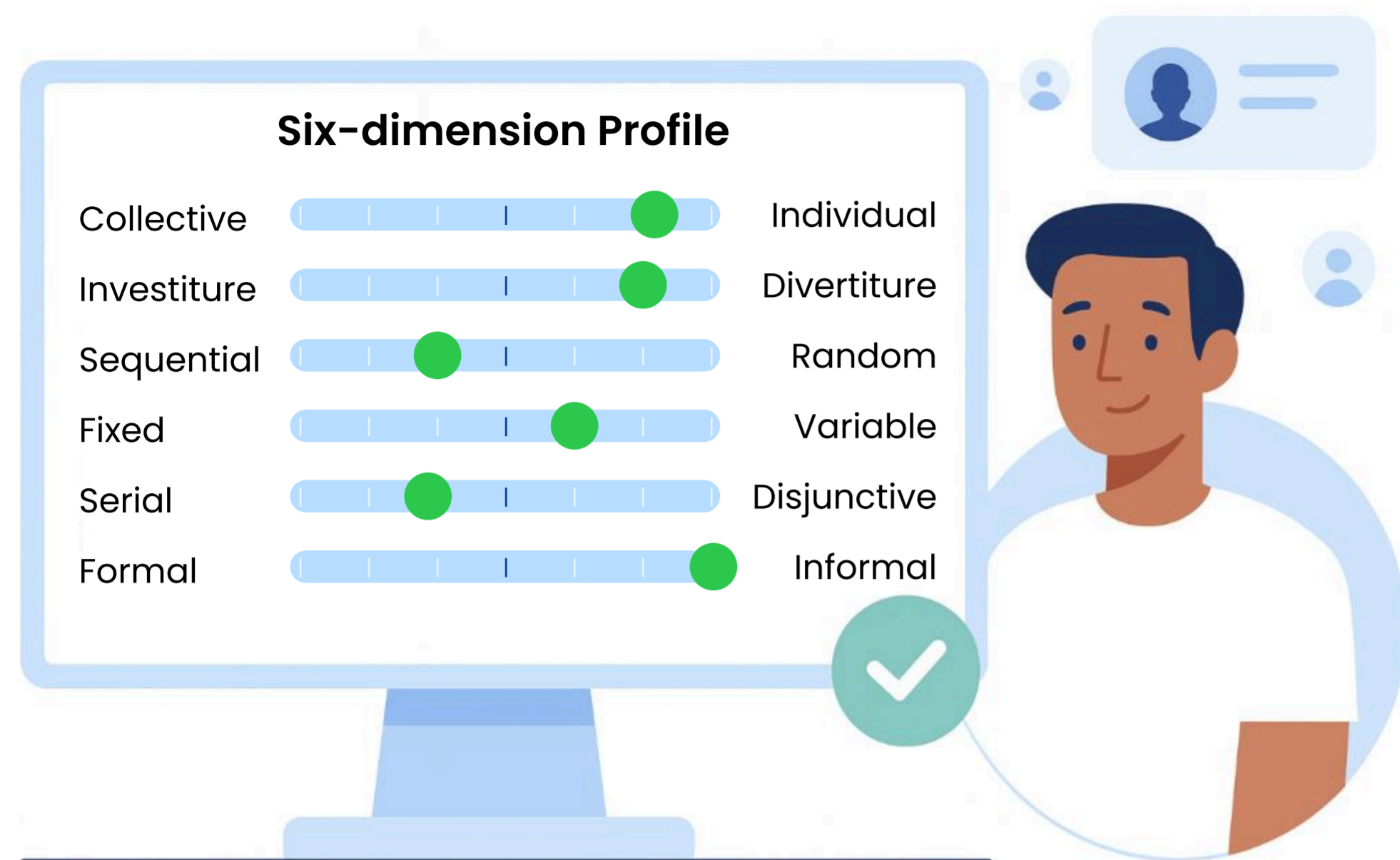
Tester 5: Flexible Explorer in Lightly Structured Team

A highly autonomous and self-driven learner who thrives in non-linear, adaptive environments with maximum flexibility and freedom for self-exploration.

- **Personal Learning Style & Preference:** This employee prefers non-linear, self-directed learning paths (Random), feels comfortable managing onboarding independently (Individual), and shows a balanced attitude between the need for identity recognition and openness to reframing (Investiture / Divestiture). They thrive in environments that allow room for experimentation, light-touch structure, and real task immersion.
- **Team Environment:** This employee is best suited for team that promote autonomy, flexibility, and self-guided learning. They flourish in team that prioritize exploration and iterative practice over rigid onboarding frameworks (Variable). Lightly structured guidance, open peer interactions, and optional support mechanisms offer the right balance for this learner to build confidence and contribute effectively without dependency on mentors or structured check-ins (Disjunctive, Informal).

Tester 5: Profile-to-Method Matrix			
Dimension	Interpretation	Matched Method	Risk
Behavior-based Dimensions			
Random	Thrives in flexible environments with non-linear, self-directed learning opportunities	Learning by Doing: Offers a hands-on entry into team practices while maintaining team productivity	Confusion due to disconnection between tasks
Individual	Comfortable managing onboarding alone, needs autonomy	Internal Documentation: Offers autonomous access to structured content for independent learners	Isolation and lack of timely feedback or support
Investiture / Divestiture	Shows balanced reaction to prior identity recognition and reframing needs	Real Task: Helps employees develop technical familiarity and social belonging simultaneously	Possible mismatch between expectations and actual challenges
Scenario-based Dimensions			
Informal	Feels more engaged when onboarding happens through casual interactions and peer support	Learning by Doing: Offers a hands-on entry into team practices while maintaining team productivity	Ambiguity and inconsistent knowledge acquisition
Variable	Prefers controlling their own learning speed with adjustable pacing options	Guided Modular Learning: Enables flexible pacing with structured guidance modules	Lack of clarity on progress or expectations
Disjunctive	Needs onboarding tools that help self-orient without relying on peer or mentor references	Guided Modular Learning: Enables flexible pacing with structured guidance modules	Lack of orientation, risk of poor integration

Tester 5: Method-to-Mechanism Matrix	
Matched Method	Suggested Mechanism Examples
Guided Modular Learning	<ul style="list-style-type: none"> • Customized Learning Path • Choose-Your-Own-Adventure Structure • Adaptive Quizzes • Embedded Micro-learning • Personalization and Nudging • Q&A Support Platform
Learning by Doing	<ul style="list-style-type: none"> • Interactive Simulations • Sandbox Mode • End-to-End Simulation • Reverse Engineering • Project-Based Learning • Peer Learning Channels
Internal Documentation	<ul style="list-style-type: none"> • Wiki Hub • Searchable Knowledge Base • Quick Reference Guides • Self-Serve Resource Library • Video Tutorials • Just-in-Time Help • Podcasts & Vlogs
Real Task	<ul style="list-style-type: none"> • Sandbox Mode • Mini Challenges • Project Diaries (Weekly Reflection Loop) • Peer Role Modeling • Achievement Unlocks



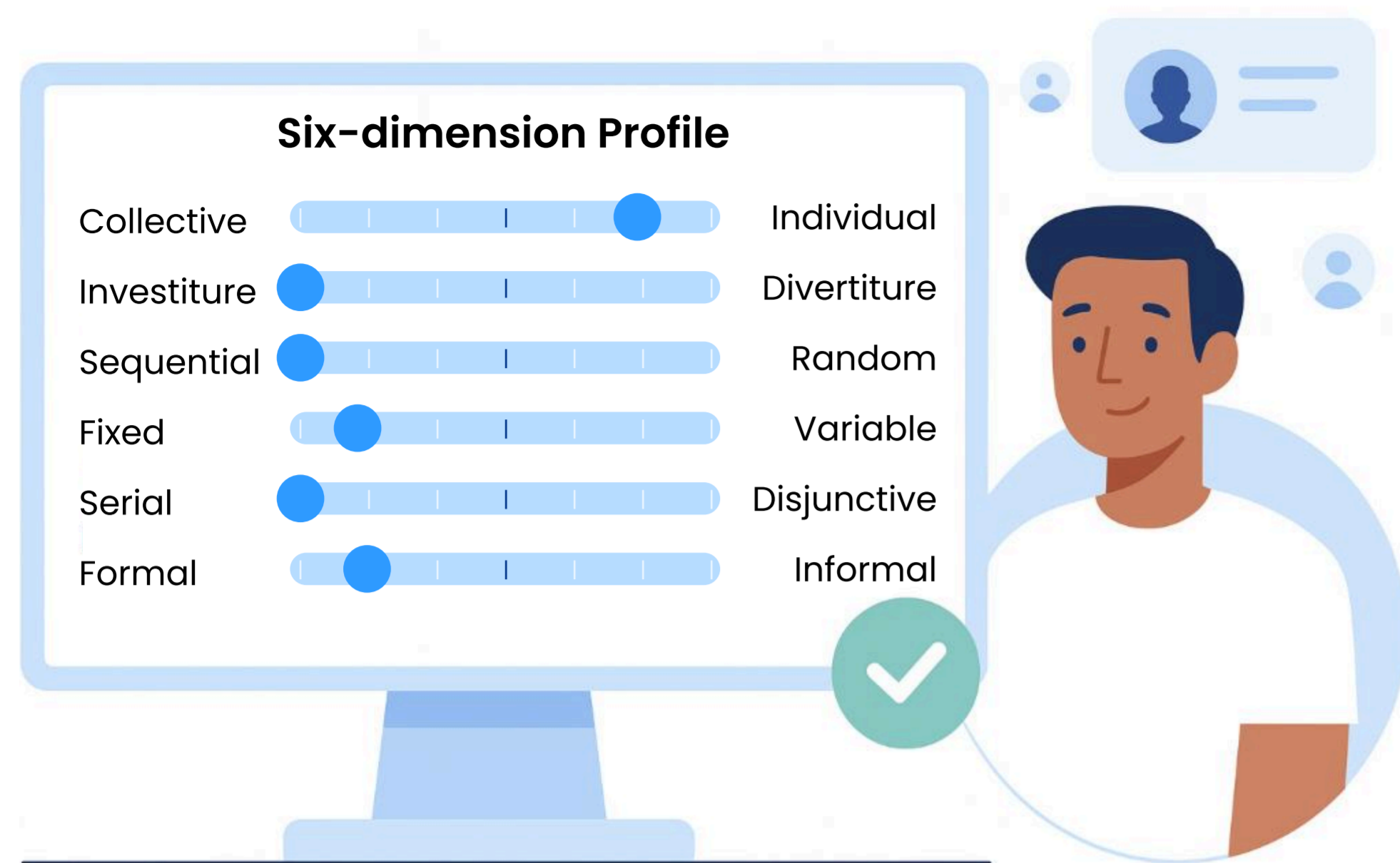
Tester 4: Confident Rebuilder in Structured-but-Supportive Team

An independent and resilient learner who performs best in environments that provide structure, encourage identity growth, and balance autonomy with social reassurance.

- **Personal Learning Style & Preference:** This employee is comfortable managing onboarding independently and prefers accessing structured content asynchronously (Individual). They feel most secure when onboarding is sequenced clearly and progresses step-by-step (Sequential), and they show motivation when challenges push them to redefine or strengthen their role identity (Divestiture).
- **Team Environment:** This employee shows a strong preference for informal onboarding settings driven by casual interaction and peer support (Informal). They also appreciate environments that allow them to control their own learning pace (Variable) and receive consistent psychological reassurance through structured mentoring (Serial).

Tester 4: Profile-to-Method Matrix			
Dimension	Interpretation	Matched Method	Risk
Behavior-based Dimensions			
Individual	Comfortable managing onboarding alone, needs autonomy	Internal Documentation: Offers autonomous access to structured content for independent learners	Isolation and lack of timely feedback or support
Divestiture	Responds better when onboarding challenges push them to evolve or redefine their role identity	Contribution-based Tasking: Gives newcomers manageable responsibilities that support learning, independence, and engagement	Demotivation due to identity loss or role mismatch
Sequential	Feels secure when onboarding steps are clearly defined and follow a set sequence	Task Ramp-up: Supports step-by-step learning aligned with user-defined sequences	Break onboarding into sequential milestones with guidance
Scenario-based Dimensions			
Informal	Feels more engaged when onboarding happens through casual interactions and peer support	Learning by Doing: Offers a hands-on entry into team practices while maintaining team productivity	Ambiguity and inconsistent knowledge acquisition
Variable	Prefers controlling their own learning speed with adjustable pacing options	Guided Modular Learning: Enables flexible pacing with structured guidance modules	Lack of clarity on progress or expectations
Serial	Appreciates having a mentor figure to provide structured feedback and check-in guidance	Buddy System: Provision of regular guidance and psychological support	Over-reliance on mentor limits autonomy

Tester 4: Method-to-Mechanism Matrix	
Matched Method	Suggested Mechanism Examples
Learning by Doing	<ul style="list-style-type: none"> • Interactive Simulations • Sandbox Mode • End-to-End Simulation • Reverse Engineering • Project-Based Learning • Peer Learning Channels
Internal Documentation	<ul style="list-style-type: none"> • Wiki Hub • Searchable Knowledge Base • Quick Reference Guides • Self-Serve Resource Library • Video Tutorials • Just-in-Time Help • Podcasts & Vlogs
Contribution-based Tasking	<ul style="list-style-type: none"> • Real Task Assignments • Sandbox Mode • Mini Challenges • Progress Badges (Skill Validation Badge) • Simulation Games
Guided Modular Learning	<ul style="list-style-type: none"> • Customized Learning Path • Choose-Your-Own-Adventure Structure • Adaptive Quizzes • Embedded Micro-learning • Personalization and Nudging • Q&A Support Platform
Task Ramp-up	<ul style="list-style-type: none"> • Step-by-Step Checklist • Weekly Reflection Loop • Manager-Guided Learning Path • Personalized Nudges • Progress Badges (Skill Validation Badge)
Buddy System	<ul style="list-style-type: none"> • Mentor Match • Buddy Meeting (Pre-boarding) • Onboarding Circles • Team Workshops • Peer Shadowing • Peer Role Modeling • Peer Learning Channels



Tester 3: Autonomous Achiever in Highly Structured Support Team

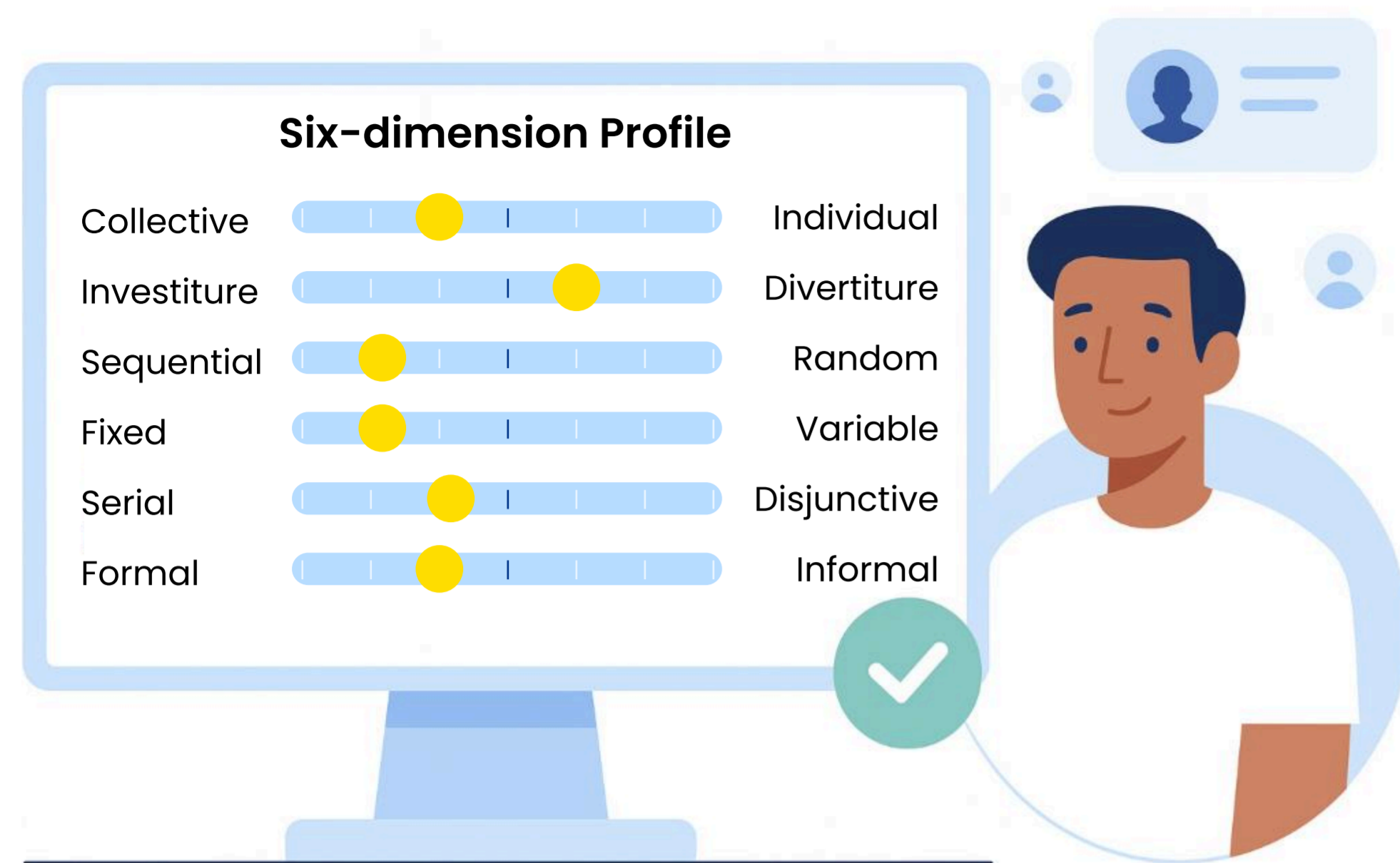
This employee demonstrates a obvious preference across all six dimensions, indicating a clear onboarding identity.

A focused and self-motivated learner who performs best when onboarding pathways are clearly defined, responsibilities are meaningful, and independent exploration is balanced by stable mentoring and formal reassurance.

- Personal Learning Style & Preference:** This employee is most confident when their past experiences are acknowledged and their identity is respected early in the onboarding journey (Investiture). They thrive in environments with clearly defined and ordered learning steps (Sequential), which support their desire for structured progression. At the same time, they are comfortable navigating onboarding independently and prefer autonomous access to learning content (Individual), as long as the framework remains coherent and purpose-driven.
- Team Environment:** This employee benefits from structured social environments where consistent mentor support is available (Serial), allowing them to feel psychologically safe while progressing. They respond well to defined timelines and milestones (Fixed) and are more comfortable in onboarding processes that follow formal structures, rules, and professional conventions (Formal). While highly autonomous, they value clarity and predictability in collaborative settings.

Tester 3: Profile-to-Method Matrix			
Dimension	Interpretation	Matched Method	Risk
Behavior-based Dimensions			
Investiture	Feels motivated when their prior identity is respected and early responsibilities are granted	Contribution-based Tasking: Gives newcomers manageable responsibilities that support learning, independence, and engagement	Misjudged confidence may cause under-preparation
Sequential	Feels secure when onboarding steps are clearly defined and follow a set sequence	Task Ramp-up: Supports step-by-step learning aligned with user-defined sequences	Break onboarding into sequential milestones with guidance
Individual	Comfortable managing onboarding alone, needs autonomy	Internal Documentation: Offers autonomous access to structured content for independent learners	Isolation and lack of timely feedback or support
Scenario-based Dimensions			
Serial	Appreciates having a mentor figure to provide structured feedback and check-in guidance	Buddy System: Provision of regular guidance and psychological support	Over-reliance on mentor limits autonomy
Fixed	Prefers predictable onboarding timelines with clear checkpoints and deadlines	Product Overview: Gives employees a sense of the bigger picture	Stress under rigid timelines; limited flexibility
Formal	Feels more confident when learning follows formal rules, structures, or official processes	Product Overview: Gives employees a sense of the bigger picture	Over-standardization reduces relevance or engagement

Tester 3: Method-to-Mechanism Matrix	
Matched Method	Suggested Mechanism Examples
Contribution-based Tasking	<ul style="list-style-type: none"> Real Task Assignments Sandbox Mode Mini Challenges Progress Badges (Skill Validation Badge) Simulation Games
Task Ramp-up	<ul style="list-style-type: none"> Step-by-Step Checklist Weekly Reflection Loop Manager-Guided Learning Path Personalized Nudges Progress Badges (Skill Validation Badge)
Buddy System	<ul style="list-style-type: none"> Mentor Match Buddy Meeting (Pre-boarding) Onboarding Circles Team Workshops Peer Shadowing Peer Role Modeling Peer Learning Channels
Internal Documentation	<ul style="list-style-type: none"> Wiki Hub Searchable Knowledge Base Quick Reference Guides Self-Serve Resource Library Video Tutorials Just-in-Time Help Podcasts & Vlogs
Product Overview	<ul style="list-style-type: none"> Tutorials by Role Guided Tour Infographic Guides Quick Reference Guides Walkme



Tester 2: Motivated Collaborator in Structured and Disciplined Team

A socially engaged and task-oriented learner who thrives when onboarding takes place in clear, structured environments supported by team-based interaction.

- Personal Learning Style & Preference:** This employee learns best in collective settings where progress is shared, and peer interaction serves as a source of energy and commitment (Collective). They value onboarding that follows a clearly sequenced path, offering security through ordered progression (Sequential). Challenges that invite reflection on personal values and encourage alignment with team identity serve as motivational catalysts (Divestiture), especially when such growth occurs within a visible social context.
- Team Environment:** This employee responds most effectively to onboarding environments that are structured, predictable, and time-bound. They exhibit a strong preference for clear checkpoints and well-defined timelines (Fixed), requiring reliable pacing to stay oriented and committed. They are also supported by frequent, structured interpersonal guidance (Serial), and gain confidence through formalized training procedures that reinforce consistency and reduce ambiguity (Formal).

Tester 2: Profile-to-Method Matrix			
Dimension	Interpretation	Matched Method	Risk
Behavior-based Dimensions			
Collective	Values learning in a social setting and draws motivation from group engagement	Real Task: Helps employees develop technical familiarity and social belonging simultaneously	Groupthink or dependency on peer consensus
Sequential	Feels secure when onboarding steps are clearly defined and follow a set sequence	Task Ramp-up: Supports step-by-step learning aligned with user-defined sequences	Break onboarding into sequential milestones with guidance
Divestiture	Responds better when onboarding challenges push them to evolve or redefine their role identity	Contribution-based Tasking: Gives newcomers manageable responsibilities that support learning, independence, and engagement	Demotivation due to identity loss or role mismatch
Scenario-based Dimensions			
Fixed	Prefers predictable onboarding timelines with clear checkpoints and deadlines	Product Overview: Gives employees a sense of the bigger picture	Stress under rigid timelines; limited flexibility
Serial	Appreciates having a mentor figure to provide structured feedback and check-in guidance	Buddy System: Provision of regular guidance and psychological support	Over-reliance on mentor limits autonomy
Formal	Feels more confident when learning follows formal rules, structures, or official processes	Product Overview: Gives employees a sense of the bigger picture	Over-standardization reduces relevance or engagement

Tester 2: Method-to-Mechanism Matrix	
Matched Method	Suggested Mechanism Examples
Product Overview	<ul style="list-style-type: none"> Tutorials by Role Guided Tour Infographic Guides Quick Reference Guides Walkme
Task Ramp-up	<ul style="list-style-type: none"> Step-by-Step Checklist Weekly Reflection Loop Manager-Guided Learning Path Personalized Nudges Progress Badges (Skill Validation Badge)
Buddy System	<ul style="list-style-type: none"> Mentor Match Buddy Meeting (Pre-boarding) Onboarding Circles Team Workshops Peer Shadowing Peer Role Modeling Peer Learning Channels
Real Task	<ul style="list-style-type: none"> Sandbox Mode Mini Challenges Project Diaries (Weekly Reflection Loop) Peer Role Modeling Achievement Unlocks
Contribution-based Tasking	<ul style="list-style-type: none"> Real Task Assignments Sandbox Mode Mini Challenges Progress Badges (Skill Validation Badge) Simulation Games

10. Final Showcase: A0 Poster



The Problem

Amgen is undergoing a global digital transformation, rapidly shifting from legacy software to a new platform. This disruptive change alters established working practices and challenges employees in adapting to new workflows. Onboarding leads currently lack a clear and suitable approach to design user-friendly training methods that ensure a smooth transition and support the success of the digital transformation.

Research Question

How can a clear, extensible, and verifiable method be developed to define different system user profiles and align them with the training methods available within the company, in order to support a smooth digital transformation?

Preparation: Method List

Before training starts, onboarding leads create a structured list of available methods, organized by six dimensions, to guide later matching with user profiles.



01

02

Survey

System users are invited to complete a short survey that captures their working preferences across six dimensions through behavioral and scenario-based questions.



Profile Generation

Survey results are translated into individual profiles, each showing six dimensions and indicating the user's tendencies in training and working orientation.



03

04

Profile-to-Method Matching

Employee profiles are compared with the labeled method list, and the overlap across six dimensions defines which training methods fit each individual best.



Group Method Integration

Individual method lists are merged into a group view, showing which methods are shared across members and can be applied collectively in training.



05

Merged Onboarding List

The final output for onboarding lead is a merged onboarding list that shows which methods are most suitable for the group.

