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# The Discovery Phase in UX Projects

**Summary:** Although there can be many different instigators, roles, and activities involved in a discovery, all discoveries strive to achieve consensus on the problem to be solved and desired outcomes.

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**Topics:** [Design Process](#), [Research Methods](#)

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**Definition:** A **discovery** is a preliminary phase in the UX-design process that involves **researching** the problem space, **framing** the problem(s) to be solved, and gathering enough **evidence** and initial direction on what to do next.

Discoveries do not involve testing hypotheses or solutions.

Discoveries are crucial to setting design projects off in the right direction by focusing on the right problems and, consequently, building the right thing. They are often referred to as ‘product discoveries’ (although I’m not keen on this name because it can set the expectation that this phase is about discovering requirements for a given product).

In order to be effective, a discovery should be broad and technology- or solution-agnostic. When teams carry out a discovery on a product they have already decided to build, it no longer *is* a discovery, but, instead, it becomes a requirements-gathering exercise or a [validation exercise](#) where teams seek to confirm that their solution is the best. The discovery is off track when teams are asked “*How do we make [insert name of solution] work for users?*” or told to “*Go find out what the user needs are for [insert name of solution]*”.

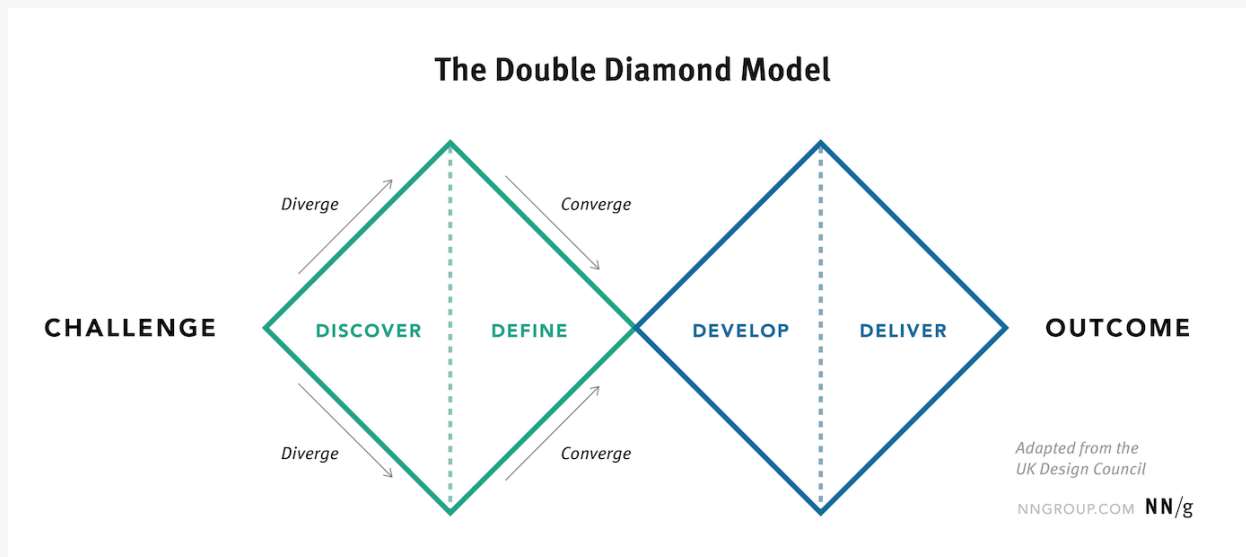
A discovery should start with a broad objective such as like: *“Go find out about this problem, just how big it is, and what the opportunities might be.”*

Well-done discoveries ensure that any solutions proposed later are desirable to users, viable for the organization, and feasible with the technology made available.

A discovery should result in the following:

- **Understanding of users:** Through user research, the project team achieves an understanding of who the users are and how they are affected by a particular problem, as well as what they need, desire, and value from a solution (and why).
- **Understanding of the problems to be solved and of the opportunities:** Through investigative work, the team understands how and why the problem(s) occur, what effect the problem has on users, as well as on the organization. It understands the magnitude of the problem and opportunities for the organization, product, or service.
- **Shared vision:** During discovery, the team works with stakeholders to understand overarching business objectives and desired outcomes and get answers to questions such as ‘what do we want to achieve?’, or ‘what does success look like?’. This approach, in turn, focuses the team on the problems (and later the solutions) that will have the greatest impact on that outcome. The team should also have an idea of what to measure going forward, to understand whether the solution is working towards the desired outcome.

A discovery starts broad and requires team members to investigate the context of the problem. The double-diamond diagram introduced by the UK Design Council — and reproduced below — illustrates the high-level process of a discovery: first, the team expands its understanding of the problem by researching its full context; armed with this knowledge, the team agrees on what the problem is, before moving to the next phase of ideating and testing in the *Develop* stage.



*Discovery covers the Discover and Define stage of the double-diamond model. In the Discover stage, lines of inquiry diverge as a team explores the problem space. In the Define stage, the team aligns on an evidence-based problem statement and on a vision for the future. (The second diamond is about the creation of an actual design to solve the problem we've identified. We don't discuss these stages here since they do not use discovery methods, but rather design and implementation methods.)*

## When Is a Discovery Needed?

**A discovery is needed anytime when there are many unknowns** that stop a team from moving forward. [Moving forward only on assumptions](#) can be risky, as the team may end up solving a problem that doesn't really matter — wasting time, money, and effort.

**A discovery might also be needed when the team is not aligned in what it wants to achieve.**

Discoveries are often carried out differently depending on the type of problem the team needs to investigate. Below are some examples of instigators:

- **New-market opportunities.** If an organization is looking to explore where to expand its product or service offerings, a discovery is often needed. The discovery might involve researching a new audience, performing competitive reviews, and investigating whether the size of the opportunity warrants entering the market

## entering the market.

- **Acquisitions or mergers.** When organizations merge, it's likely that systems, processes, and tools will also need to be consolidated. A discovery could focus on common problems faced by each organization, in order to find a common solution.
- **New policy or regulation.** This instigator is especially relevant for government organizations or organizations that operate in an environment affected by regularly changing regulation. Such a discovery would involve studying the populations affected by the change, reviewing the regulation to understand it, and assessing how business operations must change to support the new regulation.
- **New organization strategy.** This driver of change comes internally from the organization (unlike new regulation, which often originates externally). For example, during my time in the UK Government, one government-wide strategy was to become 'digital by default', which meant moving away from expensive, paper-based processes to efficient (digital) ones. Discoveries in numerous government departments focused on understanding the needs of their users, as well as the extent of paper-based processing, in order to ensure that a shift to digital was, in fact, efficient and user-centered. Another common strategy is to provide common platforms for those areas of an organization that do essentially the same thing, in order to help the organization become more consistent in what it does, and efficient. Discoveries in these situations would focus on identifying common needs and backstage processes across multiple products and services in order to potentially consolidate them.
- **Chronic organizational problems.** Perhaps sales have been low this year, or satisfaction has been low for several quarters. Often organizations find themselves simply focusing on symptoms (e.g., adding webchat), rather than on causes. A discovery involves inward- as well as outward-facing research to understand why these problems occur and examination into causes to identify the greatest opportunities for improvement.

## Common Activities in Discoveries

There are many different types of activities that could be carried out in a discovery. I won't cover them all, but here are a few that are performed in most discovery phases.

## Exploratory Research

Research helps us learn new things about a domain. This type of research is known as *generative* or *exploratory* because it generates new, open-ended insights. By carrying out this research, we learn about the problem space (or the opportunity space). A discovery phase does not involve testing a hypothesis or evaluating a potential solution.

At the beginning of a discovery, the research topic might be extremely broad, whereas later it narrows in on those aspects of the problem space that have the most unknowns or present the greatest opportunities.

Common exploratory-research methods include [user interviews](#), [diary studies](#), and [field studies](#) with a representative group of users. Surveys can also be used to gather data from a larger group of users; the data can be triangulated with qualitative insights from other methods. Finally, focus groups can sometimes be used in a discovery (although with this method, the findings are frequently contaminated by groupthink).

## Stakeholder Interviews

Stakeholders often hold unique knowledge, insight, and data about internal, backstage processes and about the users who interact with them. Interviewing stakeholders provides an additional layer of insight that helps the team understand the scale of the problem and also the viability of later solutions.

Interviewing key people in the organization can provide you with an understanding of:

- **Key business objectives** of the organization, individuals, or teams (These are helpful to determine if and how these broader goals tie-in to the goals of the project.)

- **Data and insights** about how problems affecting users impact backstage work (such as inquiry type and volume, additional processing)
- **Solutions they've tried before** that have or haven't worked, how they implemented them, what other problems they caused, as well as why they were removed (if applicable)

In addition to interviewing stakeholders, including key stakeholders in the discovery process or having them weigh in throughout not only facilitates further buy-in, it also provides more insights.

## Workshops

[Workshops align team members and stakeholders](#) and are a useful tactic for discovery. Some workshops commonly used in discoveries include:

**Kickoff workshops,** A [kickoff workshop](#) occurs at the beginning of the discovery and aims to create alignment on the objective of the discovery, and when it will be complete. It is normally attended by the client or key stakeholders who are invested in the discovery, as well as by the discovery team itself. It can also include agreement on the roles and responsibilities of each team member during the discovery.

**[Assumption-mapping](#) workshops.** Many teams bring in experts and do data gathering activities in a workshop. They question the validity of certain 'facts' and identify the deep-rooted assumptions that need further exploration. Part of this workshop can also include prioritizing assumptions in terms of risk to the outcome of the project. The riskiest assumptions should be prioritized in terms of research activities.

**Research-question-generation workshops.** This workshop is similar to the assumption-mapping workshop, and the two are often combined; the team discusses what the unknowns are and drafts research questions. The research questions can be prioritized in terms of their importance and how well they will work to gather the knowledge needed to move forward.

**Affinity-diagramming workshops.** After performing exploratory user research — such as user interviews, contextual inquiry, and diary studies — insights and observations are transferred to sticky notes and the team works to [affinity-diagram](#) them to uncover [themes](#) around problems, causes, symptoms, and needs.

**[Service-blueprinting](#) workshops.** Using a large map of the overarching service, the team plots insights from user research and business analysis in one place. They use the map to identify gaps that need further research and major opportunities.

**Problem-framing workshops.** The team defines the problem as a simple statement that will focus the team going forward. It may also compose [ideation](#) statements like *How-Might-We's* based on that problem statement.

## People Involved

Discoveries are best performed with multidisciplinary teams, where team members are dedicated full-time to the project and are collocated. Depending on the scale of the problem and the discovery activities, the number of people involved and the type of roles they play may vary.

Key roles include:

**Someone who can do research:** A UX researcher or UX designer needs to plan and carry out user research.

**Someone who can facilitate or lead the team:** Although self-organizing teams are always best, sometimes team members are new to discovery and may need some direction, or perhaps the team is large and needs some managing. There are many titles that could fill this role, including product manager, project manager, delivery manager, service designer, UX strategist. This role often involves [facilitating workshops](#), ensuring that the team communicates well, and maintaining alignment throughout the discovery process.

**A sponsor or owner:** Someone from the organization needs to own the project. This person often has a lot of domain and subject-matter expertise, as well as knowledge about who needs to be consulted. The owner should be influential enough to get the discovery team access to other people, teams, or data.

**Someone technical:** A developer or a technical architect who understands enough technical detail to be able to speak to engineers is needed in order to explore available technologies, their capabilities, and constraints.

In addition to these roles, there could be many others, including business analysts who research business processes, visual designers who explore branding, or interaction designers who work on developing appropriate design principles. It's best if the team agrees to specific roles and responsibilities at the beginning of the discovery phase.

## The Outcome of a Discovery

At the end of the discovery, the team has a detailed understanding of the problem and what outcomes to aim for, as well as where to focus its efforts. They may also have some high-level ideas for solutions that they can take forward and test. In some cases, the end of a discovery might be a decision not to move forward with the project because, for example, there isn't a user need.

Discovery isn't about producing outputs for their own sake. However, the following might be produced to help the team organize learnings about the problem space and users:

- A finalized problem statement: a description of the problem, backed up with evidence that details how big it is and why it's important
- A service blueprint
- [User-journey](#) maps
- [User-needs statements](#)



- [Personas](#)
- High-level concepts or [wireframes](#) (for exploring in the next phase)

## Summary

A discovery is a preliminary phase of a design project. It can be initiated by many different kinds of problems, involve different size teams, and many research or workshop activities. However, all discoveries strive to gain insight about a problem space, as well as to achieve consensus on desired outcomes.

## Reference

UK Design Council's Double Diamond Model: [What is the framework for innovation? Design Council's evolved Double Diamond](#).

**Learn More:** [Discoveries: Building the Right Thing](#), a full-day course at the UX Conference.

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