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This is an early draft of a developing canvas. If you would like to feedback or ask for changes to be made, this would be very welcome: rachel.wood@open.ac.uk

Introduction to the Canvas

The Before Discovery: Problem Framing as Cognitive Housekeeping canvas is designed to help practitioners pause before moving into discovery and examine the thinking that has already shaped a problem. It is particularly useful when a team has been given a seemingly straightforward problem statement, brief or organisational request and is at risk of moving too quickly from *problem* to *research* or *solution*.

The canvas does not attempt to identify the “right” problem statement. Instead, it creates a structured space for practitioners to make existing assumptions, interpretations and perspectives visible; distinguish what is known from what is hypothesised; consider what the current framing makes visible or less visible; explore whose perspectives have shaped the frame; and identify existing strengths, capabilities and examples of what is already working. The resulting frame is deliberately provisional: a more useful starting point for discovery rather than a conclusion about what the problem is.

The term cognitive housekeeping is used here as a practical metaphor. It does not suggest that practitioners can, or should, remove cognitive bias or become completely objective. Human beings necessarily draw on experience, pattern recognition, professional expertise, and mental models to make sense of complexity. These are valuable resources for practice. The intention is



instead to make some of that thinking more visible and open to examination before it becomes embedded in the questions asked, the evidence sought or the solutions considered.

The evidence base

The canvas brings together several complementary bodies of research and practice.

First, psychological research on framing demonstrates that the way a problem is presented can influence how people perceive and evaluate the choices available to them. Tversky and Kahneman's seminal work on the framing effect showed that different formulations of the same decision problem can produce systematically different preferences. For service design, this provides an important reason to treat an initial problem statement as something to examine rather than simply accept: the frame can influence what becomes thinkable as a response.

Second, reflective practice provides a foundation for examining the practitioner's own contribution to the situation. Dewey described reflection as the active and careful examination of beliefs and knowledge in light of the grounds supporting them, while Schön developed the idea of the reflective practitioner working with uncertainty and complexity through reflection-in-action and reflection-on-action. Research on multidisciplinary design teams has subsequently identified reframing as a process involving sensemaking and the development of a more productive frame for subsequent activity. The canvas therefore treats practitioners' existing thinking as something to work *with*, rather than something that needs to be eliminated.

Third, the canvas draws on strengths-based and positive-deviance traditions. These approaches deliberately look beyond deficits to identify assets, resources, successful adaptations, and examples of better-than-expected performance. Positive deviance research, for example, examines how people or organisations achieve better outcomes despite operating within similar constraints, generating hypotheses from what is already working. Strengths-based practice similarly emphasises identifying resources and capabilities within people's wider worlds, rather than defining situations primarily through deficits. Research into strengths-based approaches in English social care has explored their application across relationships, service provision, and commissioning.

This matters because problem framing can easily become deficit framing. If the starting point is simply *what is wrong?* discovery can inadvertently become a search for evidence of failure. A



strength-based framing asks an additional set of questions: *What is already working? Where does the experience differ? What capabilities are already present? What can be learned from the exceptions?* This does not minimise problems. It expands the evidence available for understanding them.

Why “Before Discovery”?

The canvas sits deliberately before Discover.

In practice, teams often receive a problem that has already travelled through several layers of organisational interpretation: a performance measure becomes a concern; a concern becomes a problem statement; a problem statement becomes a brief; and the brief becomes a research question. By the time designers encounter it, considerable thinking may already have taken place.

Pre-Discovery creates a moment to examine that journey.

The canvas therefore moves through a sequence of:

Receive | Notice | Question | Expand | Recognise | Re-examine | Frame

The intention is not to delay discovery or create another bureaucratic stage. It is to improve the conditions for discovery by making the starting assumptions more explicit.

In that sense, cognitive housekeeping is not about clearing the mind before design. It is about noticing what is already in the room.

The final working frame should consequently remain open to being changed by evidence. Discovery may confirm it, complicate it, challenge it, or replace it entirely. That is not a failure of the canvas. It is the point.

A useful problem frame is not the one that survives discovery unchanged. It is the one that helps discovery ask better questions.

The Guide

Before Discovery

Problem Framing as Cognitive Housekeeping

A Problem Framing Canvas

Purpose:

Before we start discovering *the problem*, pause to notice how the problem has already been framed – what we know, assume, value, overlook and might be missing.

1. The problem we've been given

What problem are we currently being asked to address?

- What words are being used?
- How is the problem described?
- What is being presented as the issue?
- Who is describing it?
- What outcome are we being asked to change?

Capture the problem without changing it yet.

2. What are we already thinking?

What assumptions are sitting inside the framing?

Complete:

"We think this is happening because..."

"We believe people..."



"We assume the reason is..."

"We expect that..."

Don't judge the assumptions. Make them visible.

3. What have we already decided?

Where might thinking have become a conclusion?

Look for things being treated as facts that might actually be:

- assumptions
- interpretations
- organisational beliefs
- previous findings
- anecdotes
- measures
- labels
- inherited wisdom.

Ask:

What might we be treating as known before we've explored it?

4. What is the frame making visible?

What does our current framing help us notice?

This is deliberately strength-based.

Ask:

- What is this framing helping us see?
- What expertise does it draw upon?

- What evidence supports it?
- What valuable insight might already be here?
- What strengths or assets does it recognise?

Don't throw the frame away. Understand its value.

5. What might the frame be hiding?

What becomes harder to see because of the way we've framed the problem?

Consider:

- different experiences
- different causes
- different contexts
- unintended consequences
- strengths and capabilities
- relationships between people and the system
- things that are working
- people whose experiences aren't represented.

A useful prompt:

If we changed the frame, what else might we notice?

6. Whose problem is it?

Who has defined the problem – and who experiences it?

Map:

Problem owner | Service | Practitioner | Partner | Community | Person

Then ask:

Are these perspectives the same?

Where might they differ?

Who hasn't had the opportunity to frame the problem?

This isn't about deciding whose perspective is *right*.

It's about making the plurality of the problem visible.

7. What is already working?

Where are the strengths, adaptations, and positive exceptions?

Ask:

- What works, even partially?
- When does the problem *not* happen?
- What are people already doing to make things work?
- What capabilities exist?
- Where are people adapting successfully?
- What could we learn from those exceptions?

This prevents problem framing becoming deficit framing.

8. What else could be true?

Now deliberately generate alternative frames.

For example:

Current frame:

"People aren't engaging with the service."

Alternative frames:

"The service isn't fitting people's circumstances."



"The service is asking for something people don't currently have capacity to provide."

"There are points in the journey where engagement becomes difficult."

"People are finding alternative ways to meet the need."

The aim isn't to find *the* correct frame.

It's to create a richer starting point for discovery.

9. What do we need to find out?

Turn assumptions into learning questions.

Instead of:

"Why don't people engage?"

Try:

"What happens when people try to access the service?"

"What influences whether the service feels possible at different points in people's lives?"

"What strategies are people already using?"

"Where does the service work well – and where does it become difficult?"

This becomes a bridge into Discover.

10. Our working frame

Finally, create a deliberately provisional problem frame.

We currently think...

[working problem frame]

Because...

[current evidence / understanding]

We want to explore...

[uncertainties / assumptions / alternative explanations]

And we don't want to lose sight of...

[strengths, assets, existing successes, and possibilities]

Confidence levels

Evidence-supported

Partially understood

Assumption / hypothesis

The underlying cognitive journey

The canvas could flow running across the bottom:

Receive

What problem have we been given?

Notice

What are we already thinking?

Question

What might we be assuming?

Expand

What else could be true?

Recognise

What's already working?

Re-examine

Whose perspectives are shaping the frame?

Frame

What do we now want to discover?

The Key Principle:

Don't clear your mind.

Pre-Discovery isn't about delaying the work.

It's about doing the thinking that makes the discovery work more useful.

A Worked Example

Worked Example: A Licensing Service

Before Discovery: Problem Framing as Cognitive Housekeeping

Scenario

A local authority has received feedback that its licensing service is taking too long.

The initial request to the service design team is:

"We need to make the licensing application process faster."

1. The problem we've been given

The initial problem

Licensing applications are taking too long to process.

What we're being asked to change

- Reduce processing time
- Reduce the backlog
- Improve customer satisfaction
- Make the application process more efficient

Who has framed it?

Primarily:

- Licensing management
- Operations
- Performance teams
- Elected members / senior leadership responding to complaints

Initial framing

This looks like a processing problem.

2. What are we already thinking?

Before researching anything, the team captures its existing thinking.

We think...

Applications are taking too long because the process contains unnecessary steps.

Staff are spending too much time checking applications.

Applicants don't always provide the right information.

The service needs more automation.

Some applications are more complicated than others.

Important observation

None of these are necessarily *wrong*.

But they're currently hypotheses rather than established facts.

That's the cognitive housekeeping.

We're making our existing mental model visible before it quietly becomes our research plan.

3. What have we already decided?

The team notices that several statements have started to sound like facts.

Sounds like a fact	But might actually be...
Applications take too long	A performance measure
Applicants submit incomplete information	An interpretation of application errors
Staff spend too much time checking	An operational assumption
Automation would improve the service	A proposed solution
The process has unnecessary steps	An interpretation of the current process

Cognitive housekeeping question

Have we started solving the problem before understanding it?

The team realises that **"make it faster"** has already pulled attention towards **efficiency and automation**.

4. What is the frame making visible?

The existing framing isn't useless.

In fact, it highlights some important things.

It draws attention to:

- processing time
- bottlenecks
- handoffs
- rework
- application quality
- staff workload
- performance measures.

Strengths within the existing frame

The licensing team already has:

- detailed process knowledge
- performance data
- experienced staff
- knowledge of common application problems
- existing quality controls
- established relationships with applicants and partner organisations.

So, we're not throwing away the organisational knowledge.

We're recognising it as an important asset.

5. What might the frame be hiding?

Now we deliberately look beyond the efficiency frame.

If we only investigate "How do we process applications faster?", we might miss:

Applicant experience

Perhaps people don't understand what information is required.

Cognitive load

Perhaps the application asks people to interpret regulatory language that makes sense to professionals but not applicants.

Timing

Perhaps applicants only discover what they need after starting the process.

Rework

Perhaps incomplete applications aren't primarily an applicant problem.

Perhaps the service makes it difficult to provide the right information first time.

Emotional experience

A licence might be essential to someone's livelihood.

Waiting may therefore have consequences beyond "customer satisfaction."

Variation

Perhaps different types of applicants experience completely different journeys.

Existing strengths

Perhaps experienced applicants have developed informal workarounds that help them navigate the system successfully.

Now the problem is becoming more interesting.



6. Whose problem is it?

We map the different perspectives.

Licensing manager

"We have a backlog and need to improve processing times."

Licensing officer

"We spend a lot of time chasing missing information."

Applicant

"I thought I'd provided everything."

New applicant

"I don't really understand what they're asking me for."

Experienced applicant

"I know what they want because I've done this before."

Business support adviser

"People come to us because they don't know how to navigate the application."

Senior leader

"We need a service that is efficient and meets its statutory responsibilities."

None of these perspectives necessarily contradict each other.

They're different views of the same system.

And that is precisely why problem framing needs cognitive housekeeping.

7. What is already working?

This is where I'd make the canvas deliberately different from a traditional problem-framing exercise.

We don't just ask:

What's broken?

We ask:

Where is the system already succeeding?

We discover that:

- Experienced applicants often complete applications successfully first time.
- Some licensing officers have developed helpful explanations for common questions.
- Certain application types move through the system quickly.
- Applicants who receive early guidance tend to submit better information.
- Some staff already use informal checklists to help applicants.
- There are existing data sources that could help identify common failure points.

New insight

There may already be capability inside the system that could be amplified.

The answer may not simply be:

"Make the process faster."

It might involve **making successful navigation easier to reproduce.**

8. What else could be true?

Now we deliberately generate alternative frames.

Original frame

Licensing applications take too long.

Possible alternative frames

Applicants don't always have what they need to make a successful application first time.

Or:

The service makes some of the knowledge required to apply successfully difficult to access.



Or:

The service works differently for experienced and first-time applicants.

Or:

Some processing time may be created by avoidable rework between applicants and the licensing team.

Or:

The service may be optimised around processing applications rather than enabling successful applications.

Notice that we're not declaring any of these to be *the* answer.

They're frames to investigate.

9. What do we need to find out?

The team now creates discovery questions.

Instead of:

"Why are applications taking so long?"

we might ask:

Understanding the journey

Where does the application journey become difficult?

Understanding applicants

What knowledge, information and confidence do different applicants need to apply successfully?

Understanding variation

How does the experience differ between first-time and experienced applicants?

Understanding rework

What creates the need for clarification, correction, or additional information?

Understanding strengths

What helps some applicants complete the process successfully first time?

Understanding the system

Where do organisational processes, regulations, technology, and human behaviour interact to create delay?

Now we have a much richer **Discover** agenda.

10. Our working frame

After the cognitive housekeeping exercise, the team might write:

We currently think...

Some of the time taken to process licensing applications may be influenced by how easy it is for different applicants to understand, prepare and provide the information required.

Because...

Current performance data shows variation in processing times, while staff experience suggests that incomplete or unclear information can create additional work.

We want to explore...

Where and why applicants experience difficulty, how this varies between applicant groups, what creates rework, and what enables successful applications.

And we don't want to lose sight of...

The expertise of licensing staff, existing successful practices, regulatory requirements, and the capabilities applicants already use to navigate the service.

Confidence

Evidence-supported: Variation in processing time

Partially understood: Relationship between application quality and processing time

Hypothesis: Applicant understanding is a significant contributor to delay

And this is the really important shift

The team hasn't necessarily **solved** anything.

They haven't even discovered the problem yet.

But they've changed the quality of the question.

Before cognitive housekeeping:

"How do we make licensing applications faster?"

After cognitive housekeeping:

"What influences whether different people can successfully navigate the licensing service, and where might the service itself be creating avoidable difficulty or rework?"

That is a very different starting point for discovery.

And it demonstrates your central argument beautifully:

Problem framing isn't about finding the perfect problem statement.

It's about creating enough cognitive space to discover what might actually be going on.

Or in Pre-Discovery language:

Before we discover the problem, we need to notice the thinking we've already done about it.

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