

AI In Innovation

Week 4 – LECTURE
Problem Discovery Part 1 – Assumption
Mapping



Which of these is a useful user research insight?

- (A) "We spoke to 10 people and 6 said they liked it"
- (B) "5 in 7 respondents said they might pay £10 per month"
- (C) "94% of users report being 'extremely frustrated' by current solutions to their problem"
- (D) "I asked my parents, and they think I should spend my current savings on my idea"

<https://form.menti.com/s/alb5bmxmlnjfb>



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- 1. Download the University of Bristol app**
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(or tap on the notification)
- 4. If prompted, enable location services**
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- 6. Your attendance confirmation will be displayed**

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Apple App Store



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Module: Week by Week Structure

PART 1: AI FUNDAMENTALS

Week 1: AI in Innovation: History, Present, Future

Week 2: AI + Humans: ethics, impact

Week 3: Effective AI Innovation

PART 2: DISCOVERY

Week 4: Market Research & Opportunity Mapping

Week 5: Problem Discovery & User Needs Analysis

Week 6: Consolidation Week

PART 3: BUILDING, TESTING & IMPLEMENTING

Week 7: Building Ideas: Ideation & Solution Building

Week 8: Distributing Ideas - Marketing, Design & Creative

Week 9: Testing & Evolving Ideas - User Testing

Week 10: Affecting Change - Implementing AI Effectively

PART 4: ASSESSMENT

Week 11: Group Assessment – Learning Conversations

Week 12: Individual Assessment – Learning Conversations



Q: what's the first thing
we ask innovators?

What problem are you
solving?

Q: and the second..?

What have you learnt
from your users?

Why is user research so
important?

Without customer understanding...

You won't solve their problem.

And they won't use your solution...

It doesn't matter how good/ innovative/
beautiful/affordable a solution is.

**If you don't understand the user's needs, it will
almost certainly fail.**



Some people who are great at this...

- Anthropologists
- Product Designers
- Architects
- UX / UI Designers
- Marketers
- Science fiction writers...



ADIA

The Automatic Door Installation Association

DID STAR TREK "INVENT" AUTOMATIC SLIDING DOORS?



Q: what stops us
doing this?



What stops us?

- It's scary & uncomfortable.
- We believe our assumptions are right.
- We obsess about our product vision.
- It's easier to hide behind a computer screen!



Your goal by
Consolidation Week
(26th - 30th October)

Define the problem you are
solving

Problem Statement

Define a specific problem statement that you are solving – and for which end user (is it the CEO or their end user?)

	Target user
Who: <i>Who is your target user/ audience?</i>	I am a...
What: <i>What is the outcome they're trying to achieve?</i>	who's trying to...
Barriers: <i>What are the barriers that stand in their way?</i>	but is hindered by...
Cause: <i>What is the root cause of the problem?</i>	because...
Impact: <i>What are the negative side effects?</i>	Which leads to...
Constraints: <i>What are the constraints & considerations relating to AI innovation? (e.g. ethical, environmental, social, regulatory)</i>	They must also consider...

User Discovery

“Get out of the building!”
(Steve Blank)



It means...

A hypothesis-driven approach to understanding:

- Who your customers are
- What problems and needs they have
- How they are currently behaving
- How satisfied they are today



User Discovery = your
unfair advantage



The 5 steps...

1. Form a hypothesis
2. Find potential users to talk to
3. Ask the right questions
4. Make sense of the answers
5. Figure out what to build to keep learning
(i.e. your MVP)



AI & Government Communications

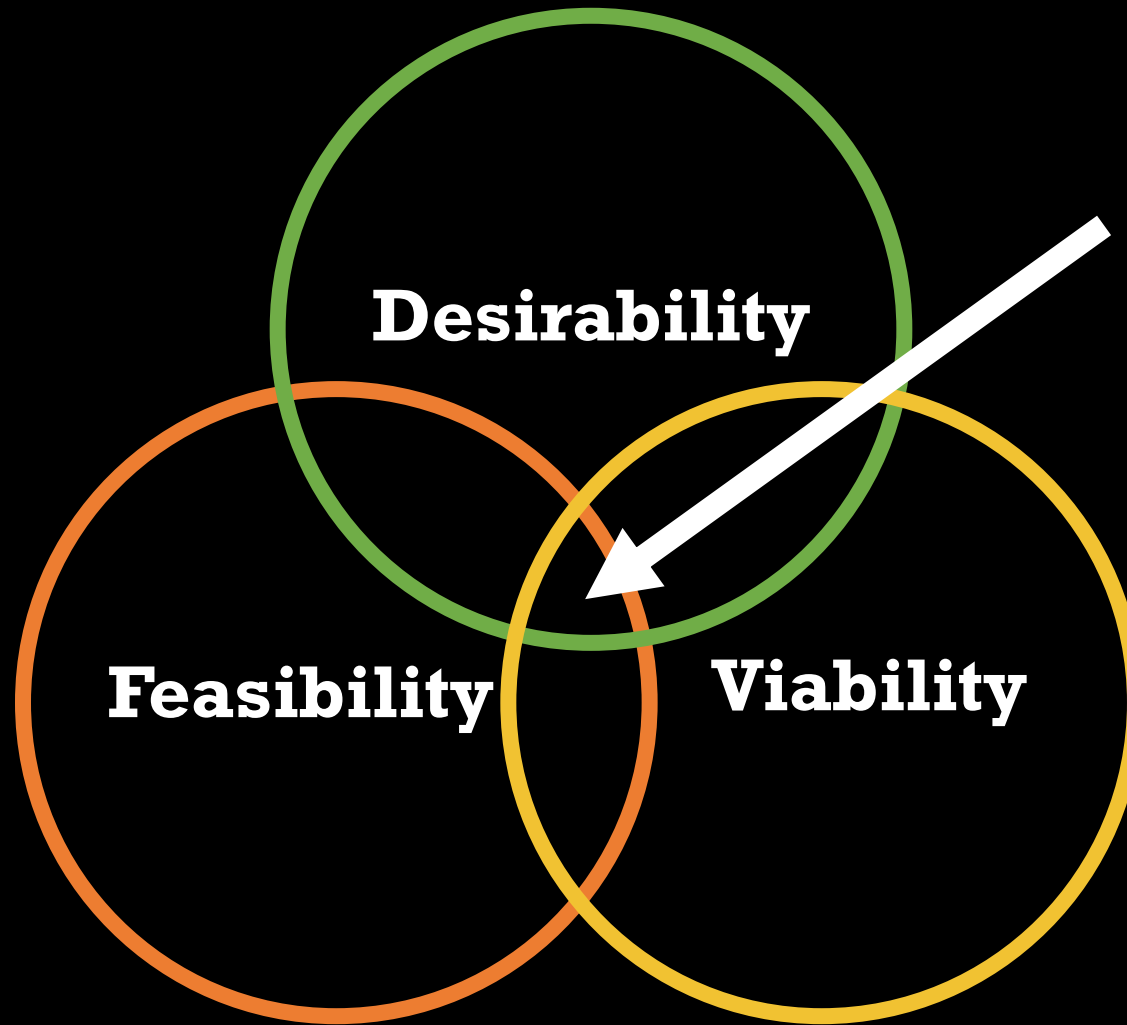
Innovation Research Question:

How could data and AI be used to help GCS teams produce faster, clearer and more consistent public communications—while protecting trust, privacy and value for money?



Define your assumptions

- **Desirability (the problem and customer):** Do our users really want/need this? How likely will they be to use it in the way we want them to? Will users be able to use it in the way we need them to?
- **Feasibility (the practicalities):** Can we realistically build this (thinking about tech timescales, regulation, legal and compliance implications, budget, etc.), with our available resources?
- **Viability (the business model):** Will this create enough value that someone will pay? Is the customer different from the end user? Will it generate sufficient revenue?



**Innovation
sweet spot**

Example Assumptions

- **Drafting bottleneck:** The most painful, high-frequency task is drafting press releases, FAQs and citizen replies under time pressure.
- **Tech tools:** Communication teams prefer tools that plug into existing channels (email, SharePoint/Teams, CMS) rather than switching apps.
- **Trust & governance:** Communication teams will only use AI-generated text if sources are cited and content is approved against ministerial guidance.
- **Quality:** Senior editors can't accept hallucinations; they require verifiable sources and clear uncertainty flags.
- **Impact metric:** Time saved per statement is the primary “value for money” measures (not just volume of outputs).

3. Ask the right questions



Good vs Bad user research

Bad Research

- Would you use this?
- Would you pay £20 for it?
- Do you like this idea?

Good vs Bad user research

Bad Research

- Would you use this?
- Would you pay £20 for it?
- Do you like this idea?

Good Research

- Do you currently... (use, pay for, look for)?
- How often? How much?
- How big a pain point?
- What are the most important factors?
- What do you like?
- What do you NOT like?

Everything you know is
wrong (well, not quite...)



Everything you know is wrong (well, not quite...)

- We are subject to **confirmation bias**
- That is, we tend to pay more attention to information that confirms our beliefs (... I was right I knew the answer already So I'm smart ...)
- Ignore or downplay facts that contradict our beliefs.
- What we need → HMW questions



The Mom Test

- Book by Rob Fitzpatrick
- I've got an idea for a cookbook app....
- Ask about user's life, not my idea
- Ask about something specific in the past, not opinions of the future

"Once for a price, there's no better way to learn what customers want and will buy than this wonderful little book. If you want your new product or new business to succeed, start here."

— John Mullins
author of *The New Business Road Test*



How to ask the right questions:

- **No pitching!** Talk about their life instead of your idea.
- **Be specific!** Ask about specifics in the past instead of generics or opinions about the future. NO hypotheticals (“would you...”)
- **Listen!** Talk less and listen more
- **Use examples:** Get specific about examples (behavioural & emotional)

How to ask the right questions:

- **Dig deeper:** Ask WHY a lot
- **Don't lead:** Don't ask closed or leading questions
- **Don't assume:** Don't let the answers fit your narrative.
- **Don't lie to yourself.** Take compliments with a 'lot of salt'

Example Questions

- **Pain points:** In the last month, which comms tasks took the most time?
 - **Workflow & tools:** Which tools do you use every day? At what point would an AI assistant slot in without adding steps?
 - **Metrics that matter:** If a tool saved you time, how would you measure value (minutes saved, fewer edits, faster approvals, reduced errors)?
-
- **Emotional Questions:** "How do you feel when..." / "What frustrates you most about..."
 - **Behavioural Questions:** "How much time do you currently spend on..." / "What tools do you use for..."

A good outcome of user research

- INVALIDATE your assumptions about what customers want, so that you can focus on building what they will use.
- If your assumptions were all correct, you probably weren't asking the right questions, or listening well enough
- Repeat the process with new assumptions to test
- Expand on insights with a survey to 100+ potential customers (but make sure they fit the profile)

About Personas

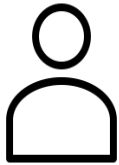
Personas are a useful way of making sense of user research.

They...

- Force you to thoroughly investigate your user / customer
 - Inspire insights and further directions of investigation
 - Allow the entire team to understand your goals
 - Anchor stories and bring them to life
-
- Allow you to 'become' the user – “What would Sabba/Bea/Simon do?”
 - Design for people, not data

User Persona – Your Client

Describe the persona of **client CEO** who has requested your help with AI innovation



Name:

Age:

Location:

Job Title:

Salary:

Pain Points

What challenges are they facing in reaching their outcome?

Goals

What outcome(s) are they trying to achieve?

Current solutions

What solutions are they already trying? What are the limitations / issues with these solutions?

Success Metrics

How they measure success in their role

Reasons for 'Yes'

What factors would make them say 'YES' to adopting/ investing in AI innovation?

Quote

"I wish I had..../ I'm always looking for.../ I'm annoyed by.../ I dream of..."

Root Cause

What are the underlying causes of their challenges?

Motivations

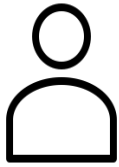
What motivates them to achieve their goals? (e.g. price, speed, convenience, ease of use)

Reasons for 'No'

What factors would make them say 'NO' to adopting/ investing in AI innovation?

User Persona – Client's End User

Describe the persona of **the end user** who will be impacted by your AI innovation



Name:

Age:

Location:

Job Title:

Salary:

Pain Points

What challenges are they facing in reaching their outcome?

Goals

What outcome(s) are they trying to achieve?

Current solutions

What solutions are they already trying? What are the limitations / issues with these solutions?

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Reasons for 'No'

What factors would make them say 'NO' to adopting/ investing in AI innovation?

Example Persona...



End User: Kelly Kimpton

Describe the persona of the end user who will be impacted by your AI innovation



Age: 34

Location: London

Profession: Senior
Communications Officer, GCS

Salary: £50k

Quote

*"I wish I had..../ I'm
always looking for.../
I'm annoyed by.../ I
dream of..."*

Pain Points

- **Fragmented sources:**
guidance scattered
across tools
- **Approval bottlenecks:**
multiple reviewers; late
policy changes
invalidate drafts
- **Risk & trust:** fear of
errors, out-of-date
stats, or "hallucinated"
content from AI tools
- **Time pressure:**
reactive comms,
weekend spikes,
ministerial edits at
short notice

Goals

- Faster, clearer citizen-
facing comms
- Consistency with GCS style,
ministerial lines,
- Reduce rework and
approval timelines and
evidence
- Improve accessibility

Motivations

- Improved public service
- Professional pride:
- Career progression
 - Reduction in inefficiency
to make work less
frustrating

Current solutions

- Manual checks of past
guidance
- Drafts in Word/Teams, adds
line references, then
circulates for edits by
policy/legal/press office
- Uses checklists for tone,
accessibility, and sign-off;
pastes final copy into
email/press grid
- Tracks versions in long email
chains; keeps a personal
folder for future reuse

Key Takeaways:

- **Run unbiased discovery.** Apply The Mom Test to elicit real needs by focusing on past behaviour, concrete examples, and workarounds—not opinions or hypotheticals.
- **Use AI to accelerate research.** Leverage AI for stakeholder simulation, transcription and sentiment analysis, and pattern-finding to synthesise insights quickly and reliably.
- **Build evidence-based personas.** Create and iteratively refine personas from interview data, capturing goals, pains, behaviours, and current hacks - with an explicit accessibility and inclusivity check.

Seminars

- **Using Custom ChatGPT to conduct interviews with Stakeholders**
- **6 stakeholders have been created, please do your own research work to understand the different industries and prepare your questions**
- **Use the right prompts to ‘interview’ them, like interviewing real persons**

A reminder:

- In this Unit, there should be no primary research work involving people you don't know, such as interviewing doctors or patients in any NHS hospitals / clinics.
- You may talk to your friends or family and this will NOT require any approval by the teaching team.