

Part 1: What is human-centered design?

Colin MacArthur

**An approach for engaging end users
in product development.**

**Engaging users in product
development is *hard*.**

**Their feedback is vague, untechnical
and sometimes inactionable.**

Sometimes what people say turns out to be wrong.

**There are a lot of end users—
so you get lots of hard feedback.**

**And then you don't know which
feedback to take!**

Human-centered design is an approach for engaging end users that yields actionable, prioritized, assumption-challenging results.

Human-centered design builds products that work better for users, require less rework and prompt fewer support calls.



**Human-centered design
versus business analysis?**

Complementary tool sets

Human-centered design strengths	Business analysis strengths
Interface design	Data architecture
User flow	Business process
User needs	Business goals
Users	Stakeholders

Four tenets of human-centered design:

1

Put people
before
technology.

2

Conduct
design
research.

3

Focus on
common user
needs.

4

Only accept
proof in use.

5

Examples from ePermit along the way.



**I will pose critical questions
throughout.**

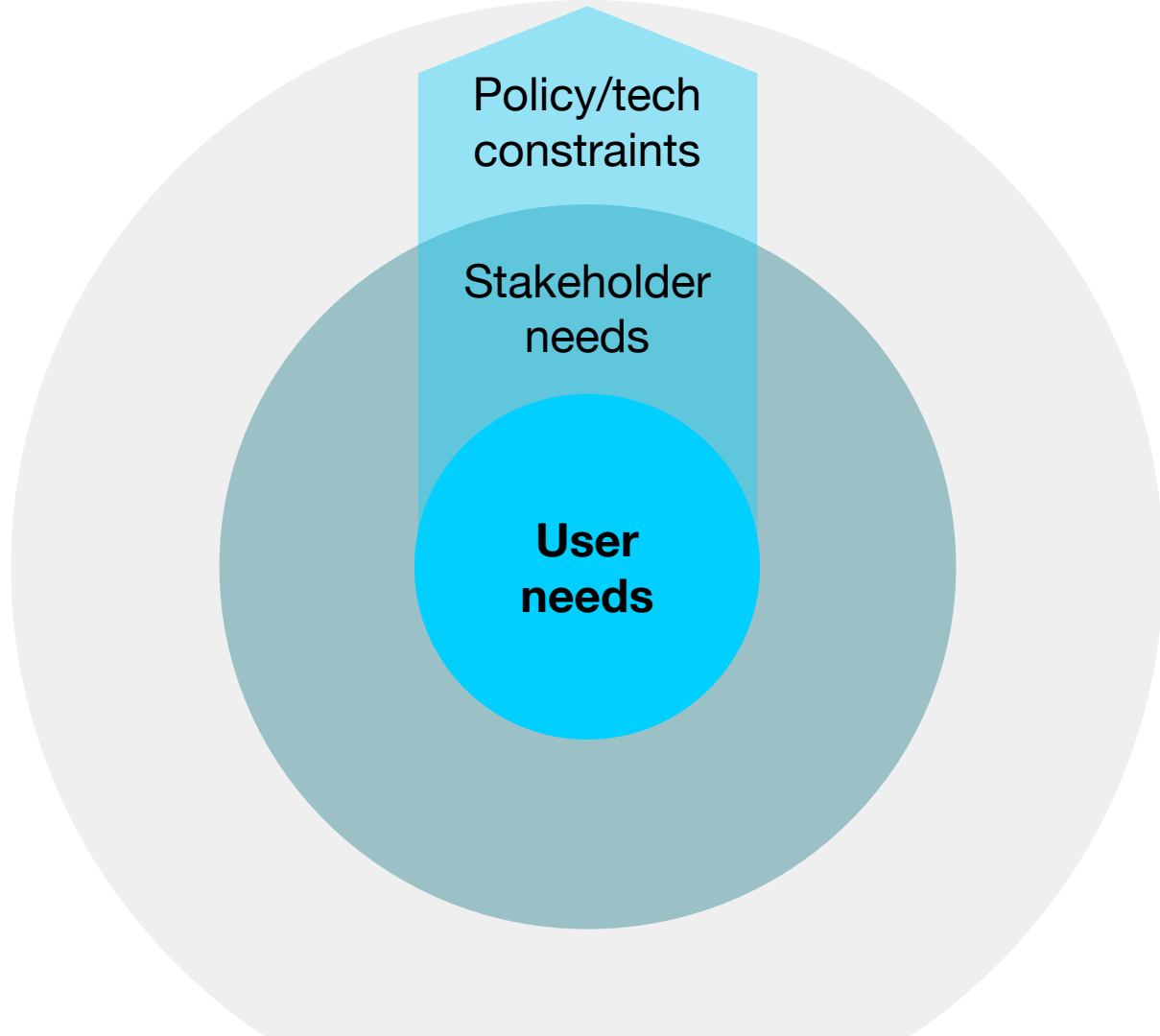
**1/ Put people
before technology**

We figure out how the best way to meet people's needs and then figure out how to make it work within our constraints.



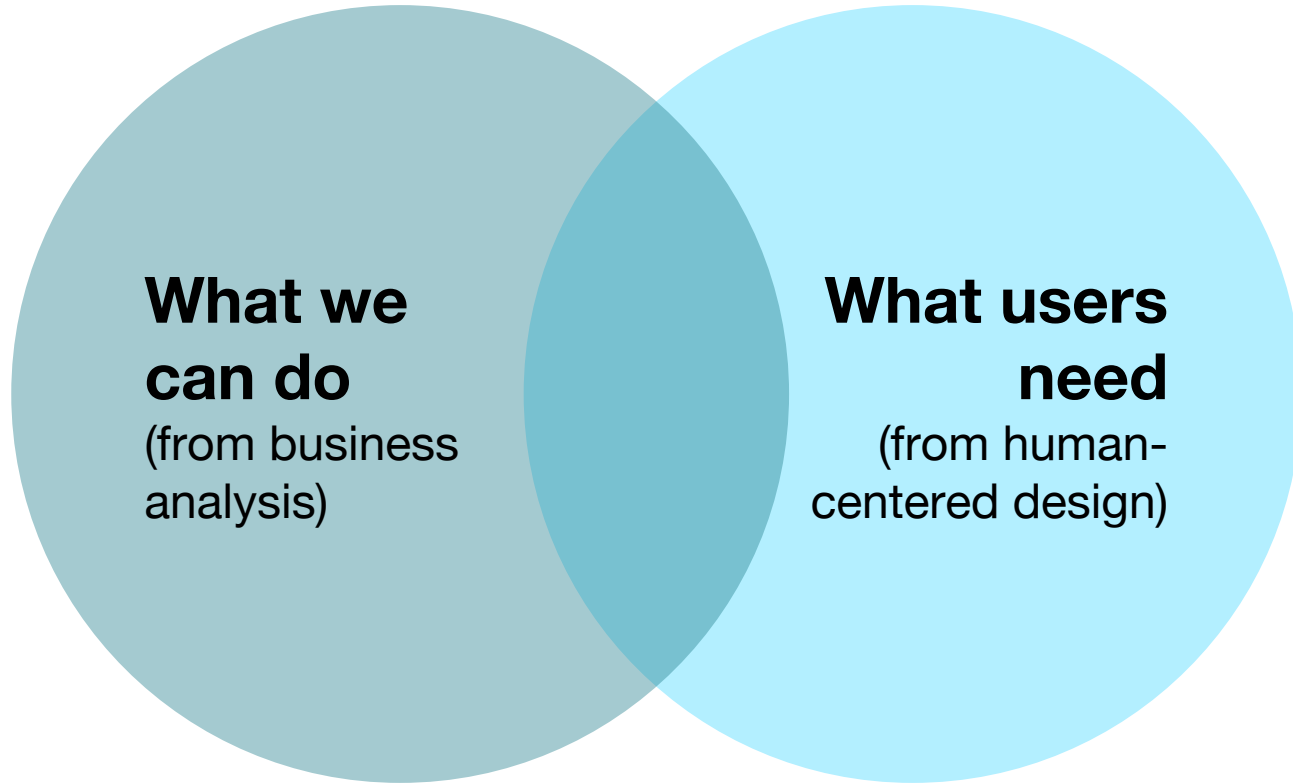
User
needs








**Why not *start* with your
technical constraints?**

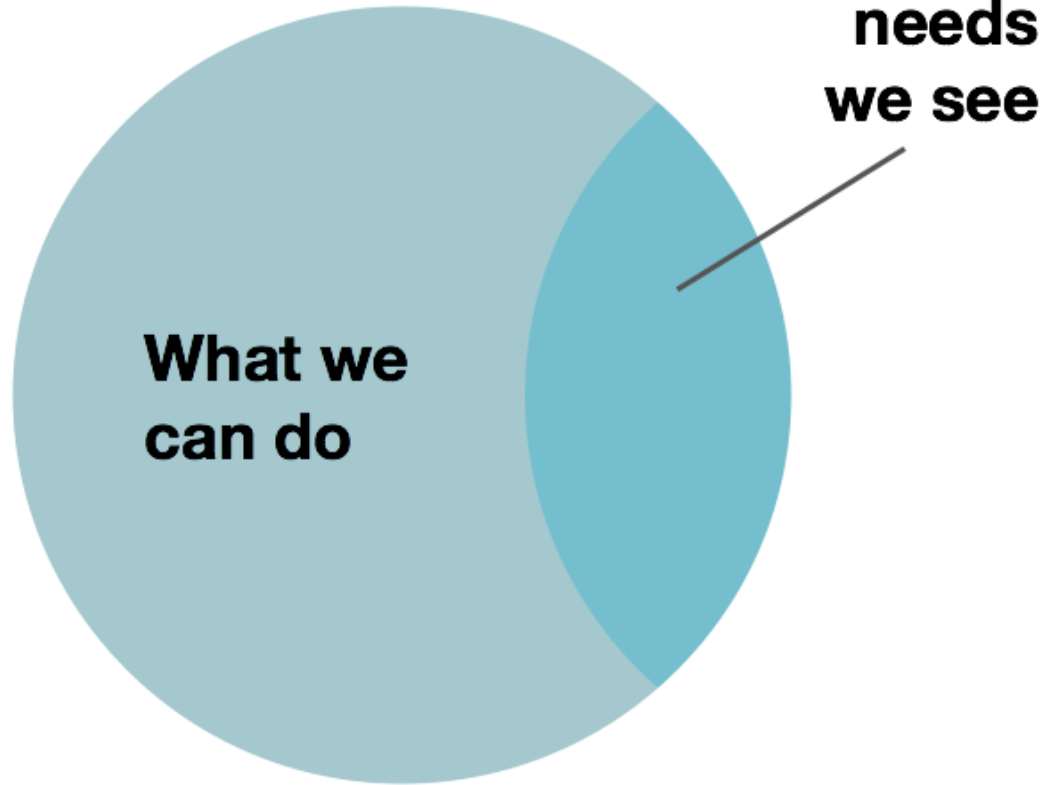


**Limitations
first:**



**What we
can do**

**Limitations
first:**



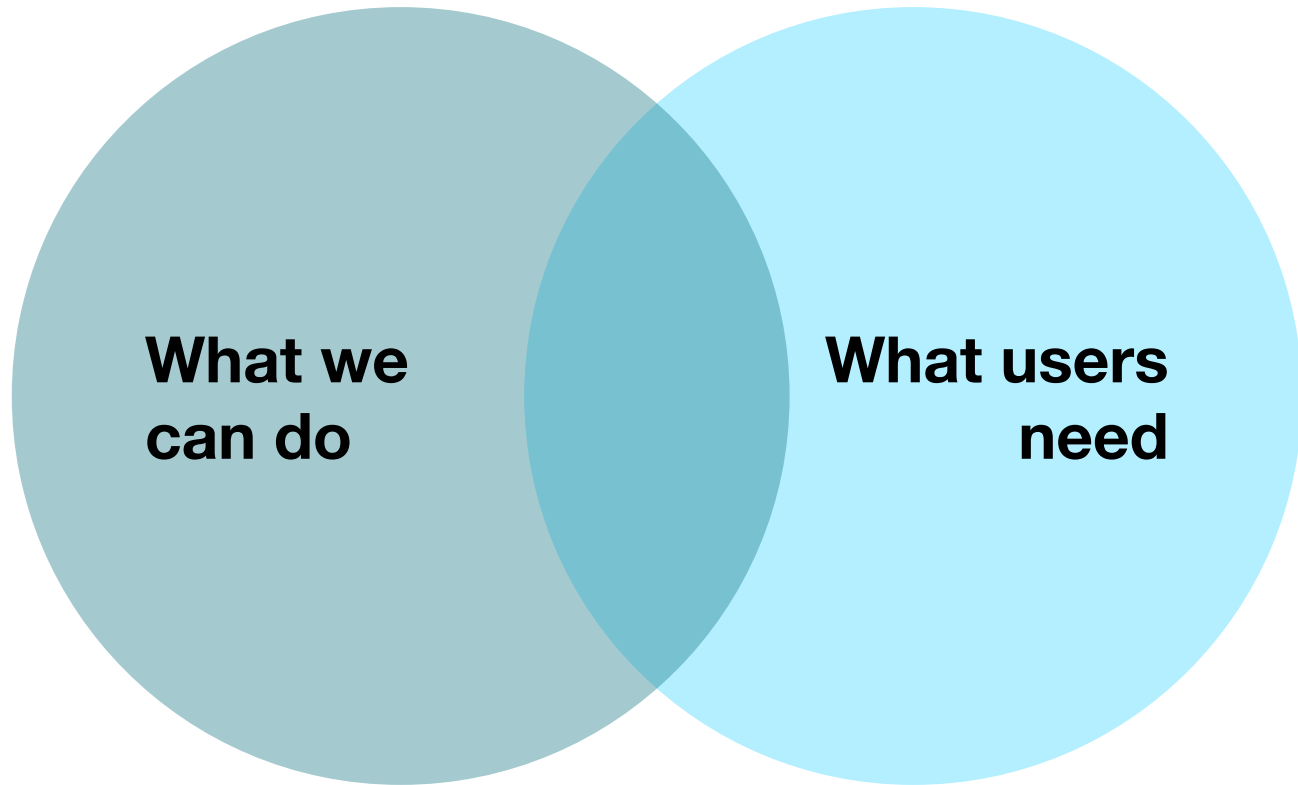
**If we start by looking for limitations,
we only see the user needs we can
meet within them.**

**Users
first:**

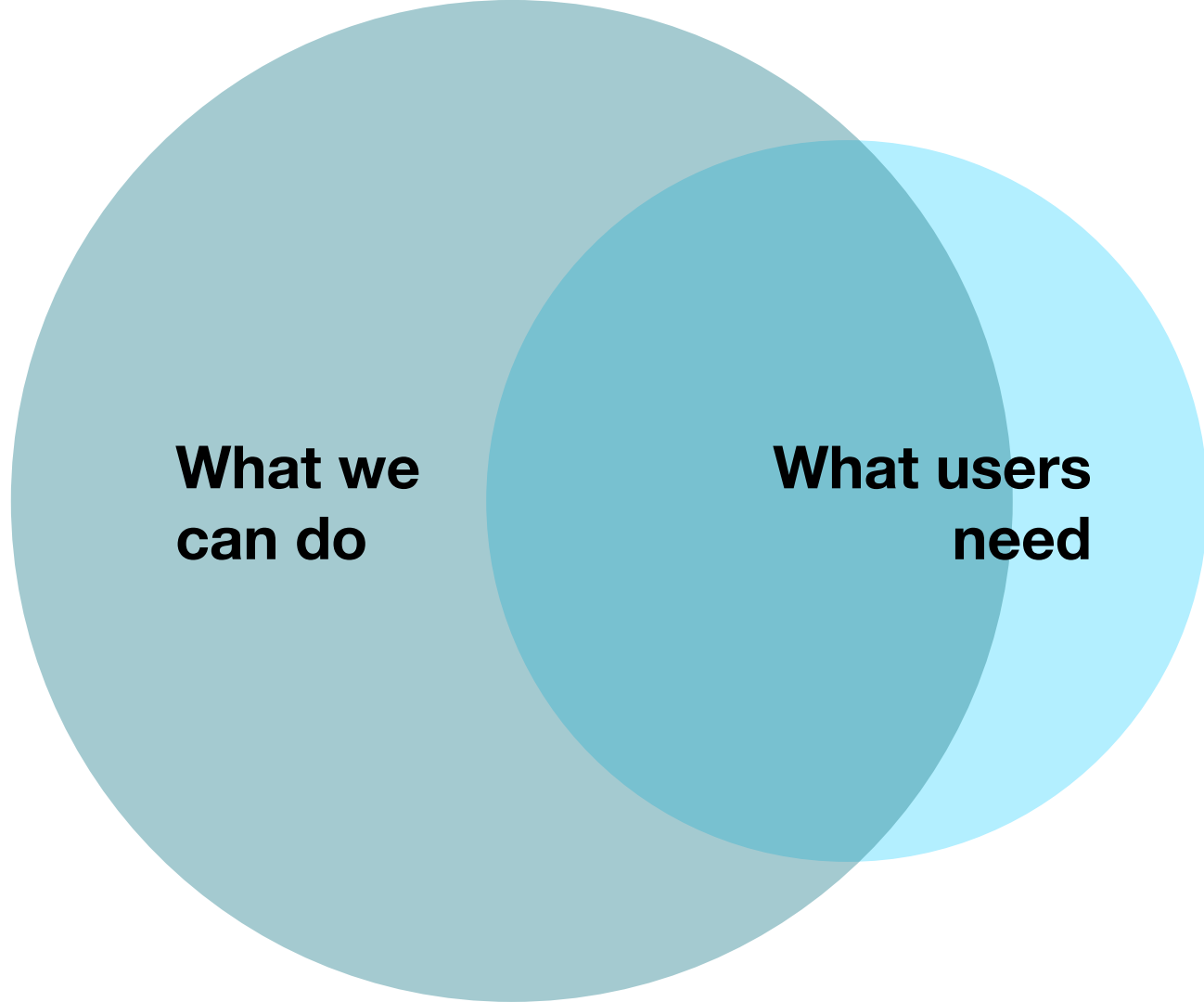


**What users
need**

**Users
first:**



**Users
first:**



If we start with user needs, we can see what needs we *can't* meet within our current limitations and work on expanding them.

Example from ePermit:
SUDS connection

We hear from users:

“All it needs to be...an applicant submits a form, we review it and accept it in.”

We build a prototype in a week:

Primary Permit Holder Information

Permit holder name: *Required*

Name of Permit Holder

Is the contact address above the same as the permit holder?

Yes 

Street Address 1: *Required*

Street Address 2:



Received Application

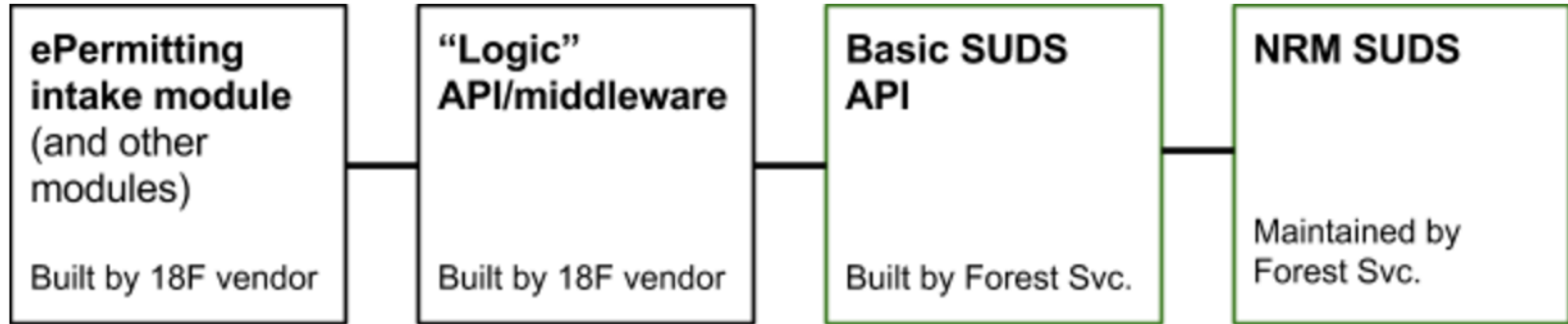
Permit Status: Needs Approval

Approve application

Deny application

Reason for denying application

What we built:



**If we'd started thinking about
ePermit and SUDS in silos, we might
never have gotten there.**

2/ Conduct design research

We find out peoples' needs by observing and speaking directly with them with design research methods (not via surrogates or our own assumptions).

In design research:



Participants are users,
people who touch the
software.



Many participants in one-on-
one sessions, not large
groups



Standardized questions and
targets of observation



Observing and asking about
behaviors, instead of opinions

Contextual inquiry

1

Go to the **places users work**.

2

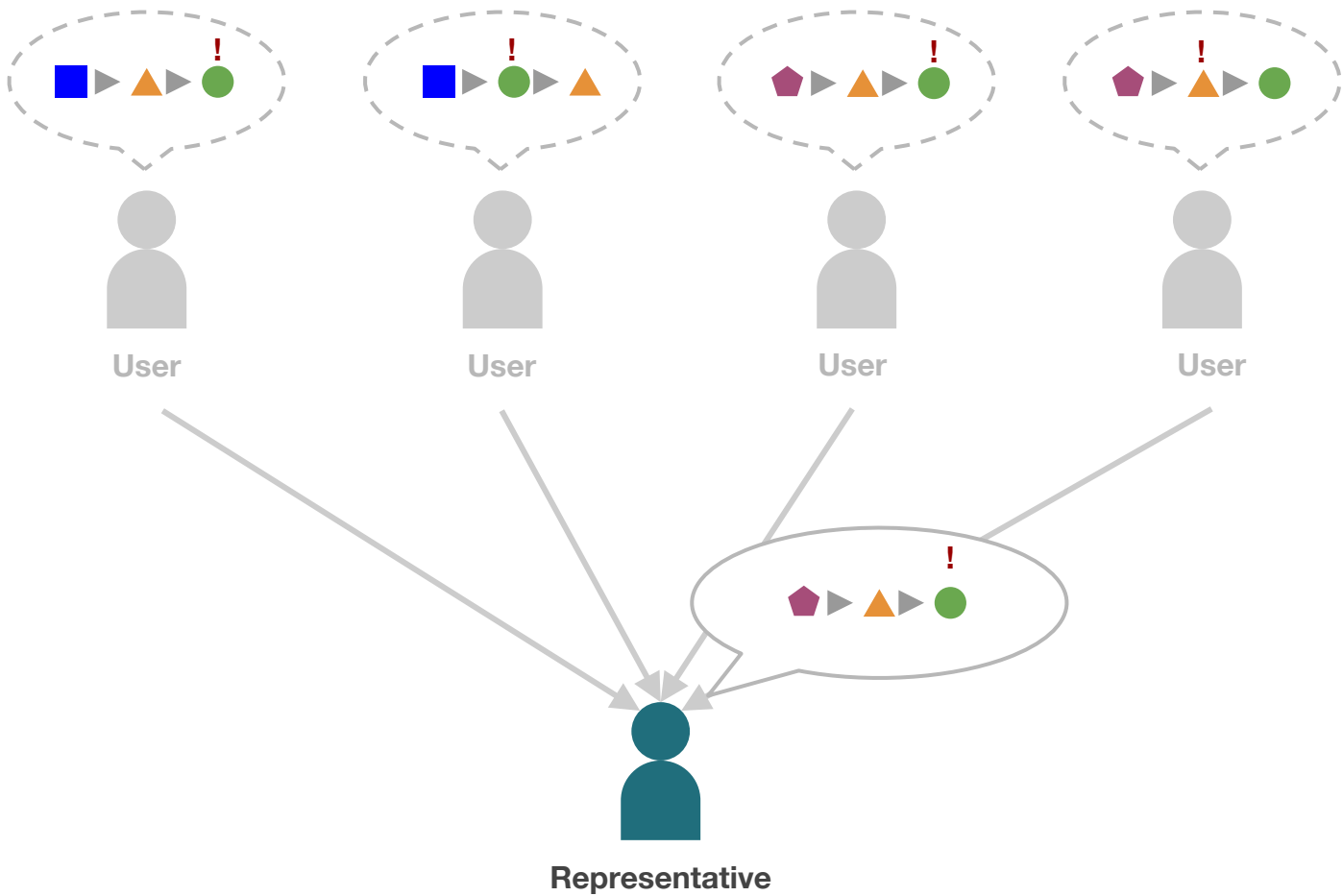
Ask them **what they do**, observe and ask follow up questions.

3

Repeat with different users.



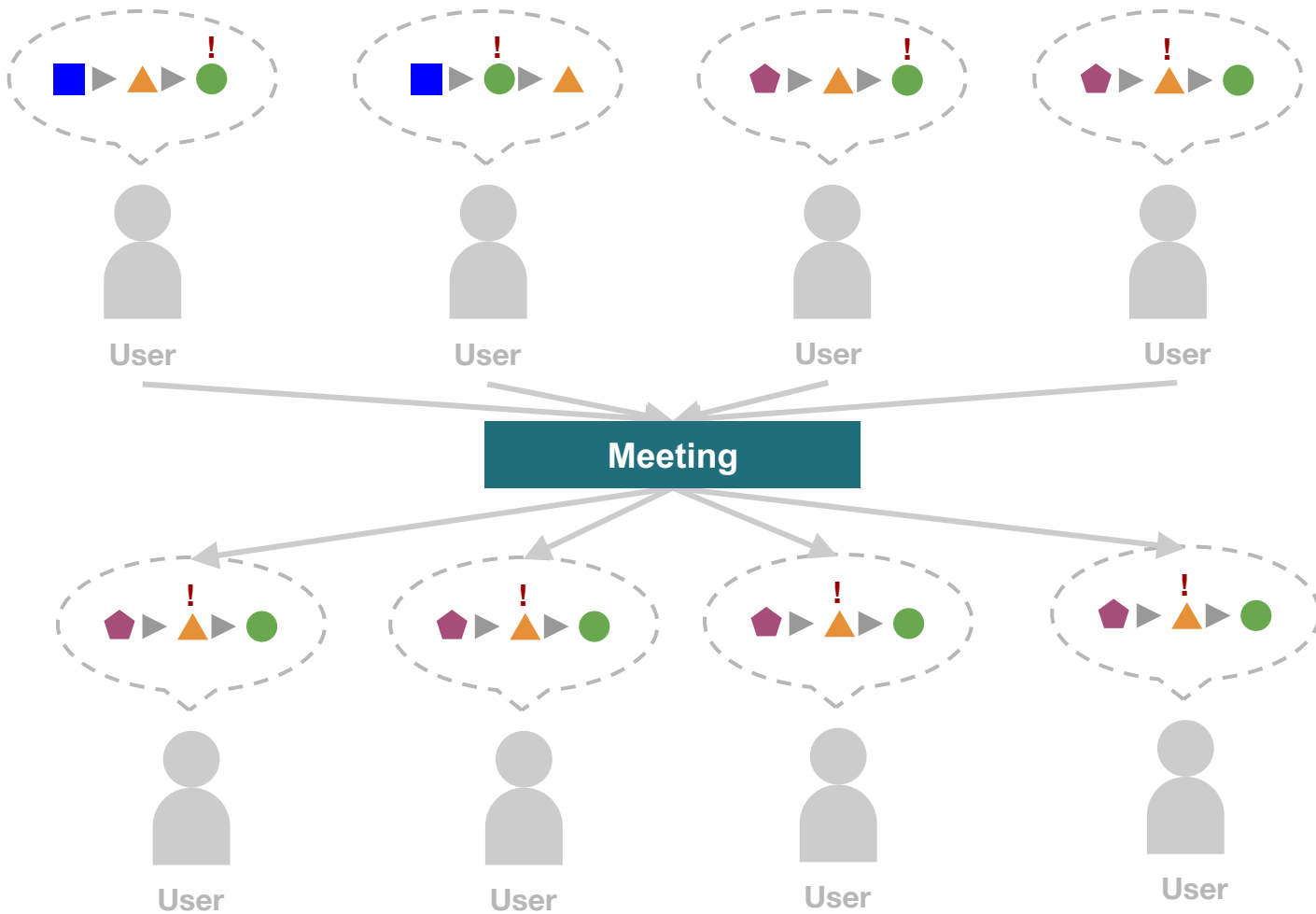
Why not experts or proxies?



**If we rely on experts or
representatives, they rarely capture
the diversity of process or opinion.**



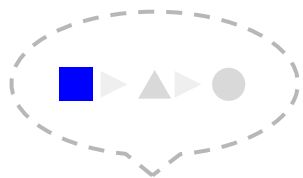
Why not just a big meeting?



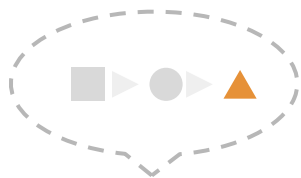
If you get everyone in a meeting together, all their opinions start to look the same.



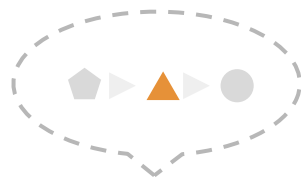
**Why not informal, loose
conversations?**



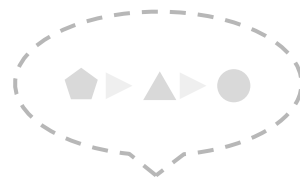
User



User



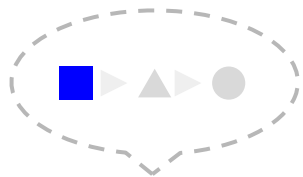
User



User



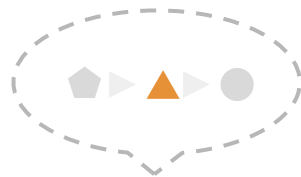
Questioner



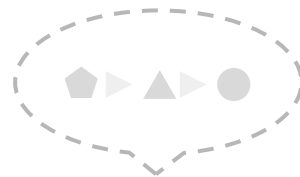
User



User



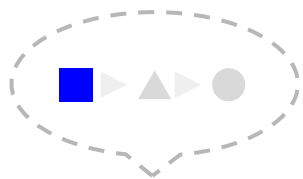
User



User



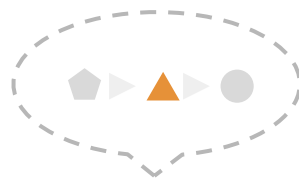
Questioner



User



User



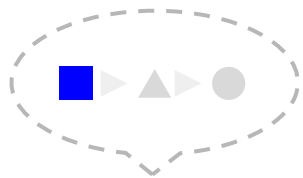
User



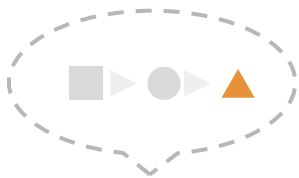
User



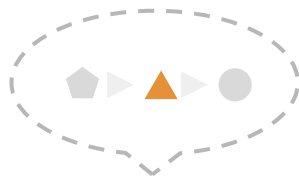
Questioner



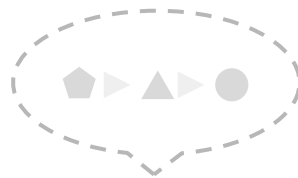
User



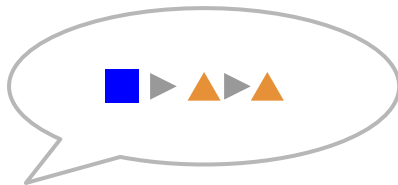
User



User



User

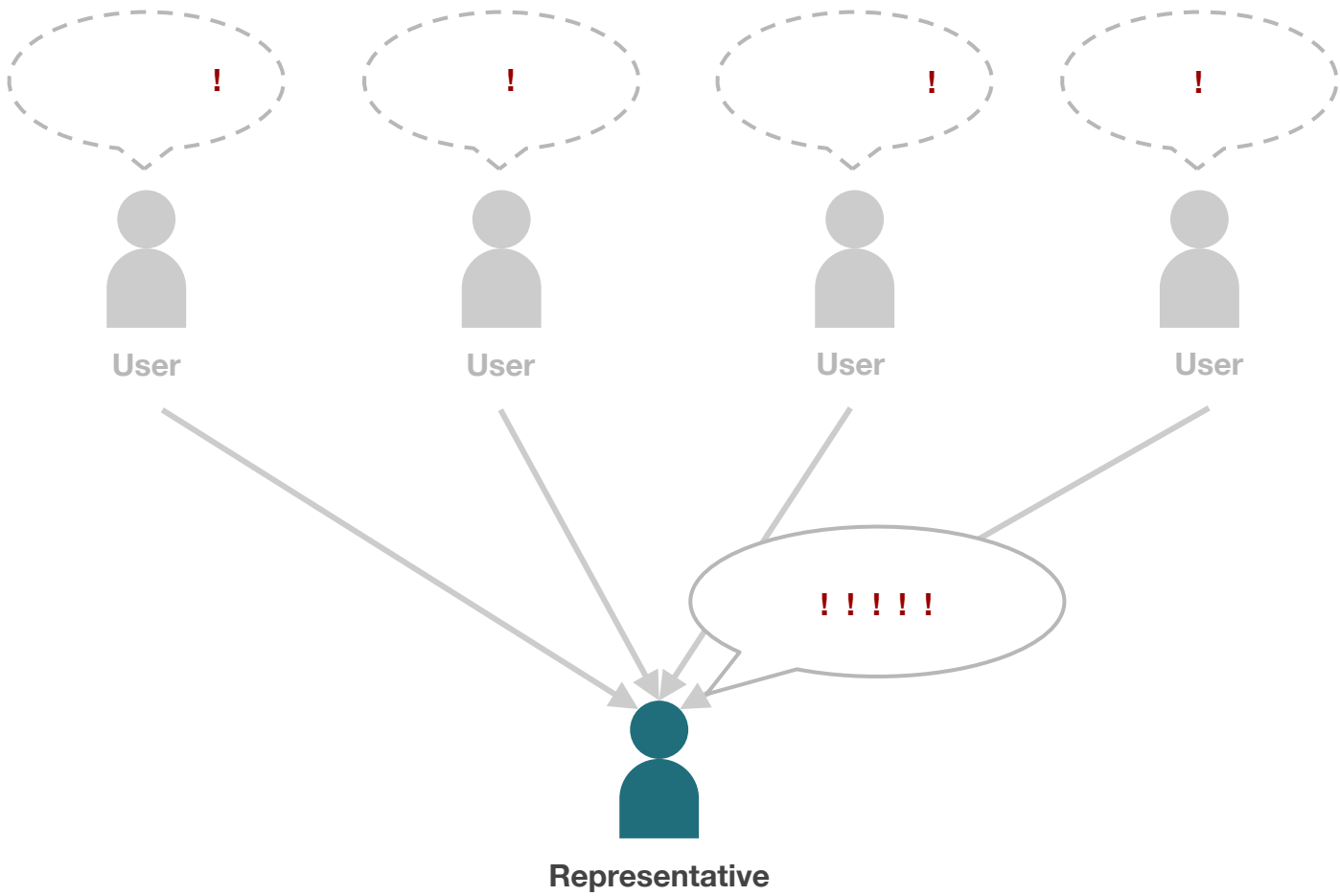


Questioner

If the conversations are informal, we usually don't talk about all parts of process with everyone. Just some parts with some people.



**Wait! Aren't user opinions
important?**

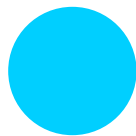


**Opinions without an understanding
of what people actually *do* are rarely
actionable.**

In review, in design research:



Participants are users,
people who touch the
software.



Many participants in one-on-
one sessions, not large
groups



Standardized questions and
targets of observation



Observing and asking about
behaviors, instead of opinions

Example from ePermit:
Research surprises

**Just collecting online applications
won't help outfitters and guides.
Helping them choose the right
permit and submit the right
documentation will.**

3/ Focus on common needs

**We build products that meet the
needs shared by the most people
and meet address business goals.**

**Most relevant
to goals**
(from business
analysis)

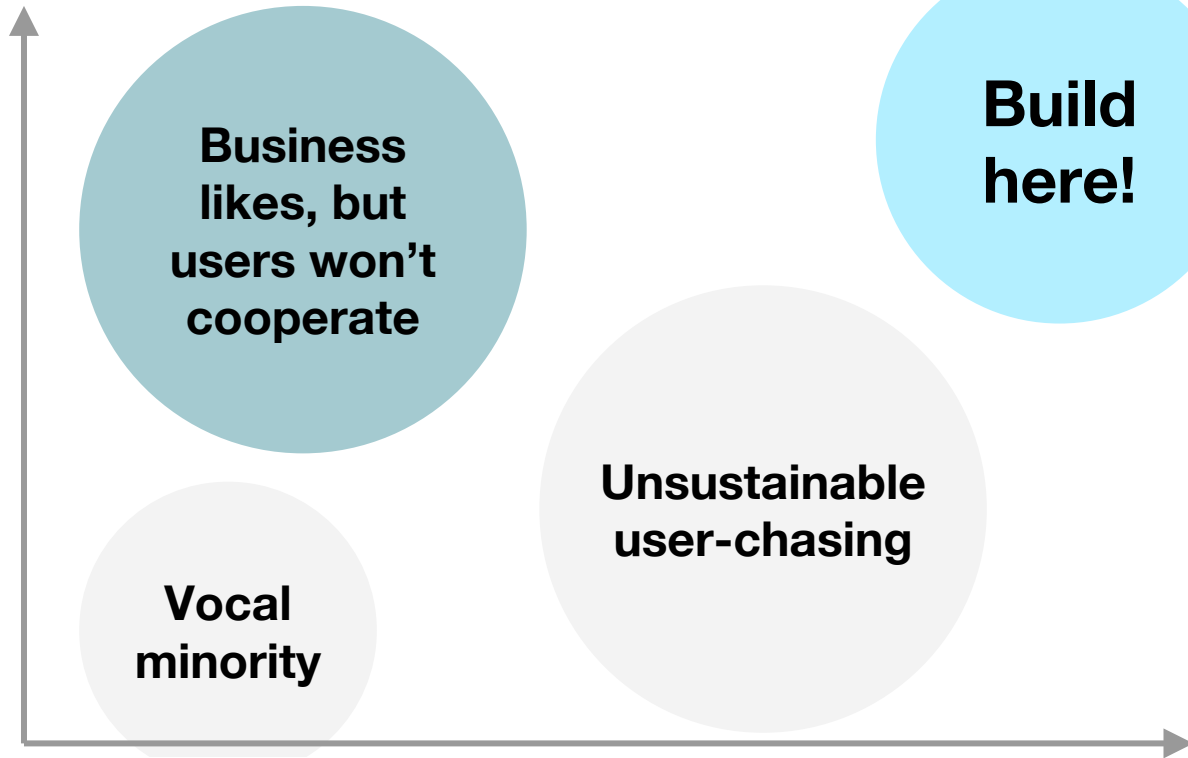
**Business
likes, but
users won't
cooperate**

**Build
here!**

**Vocal
minority**

**Unsustainable
user-chasing**

Most users need
(from human-centered
design)



Example from ePermit:
Feature prioritization

**Most relevant
to goals**

**Forcing users
to consume
certain docs.**

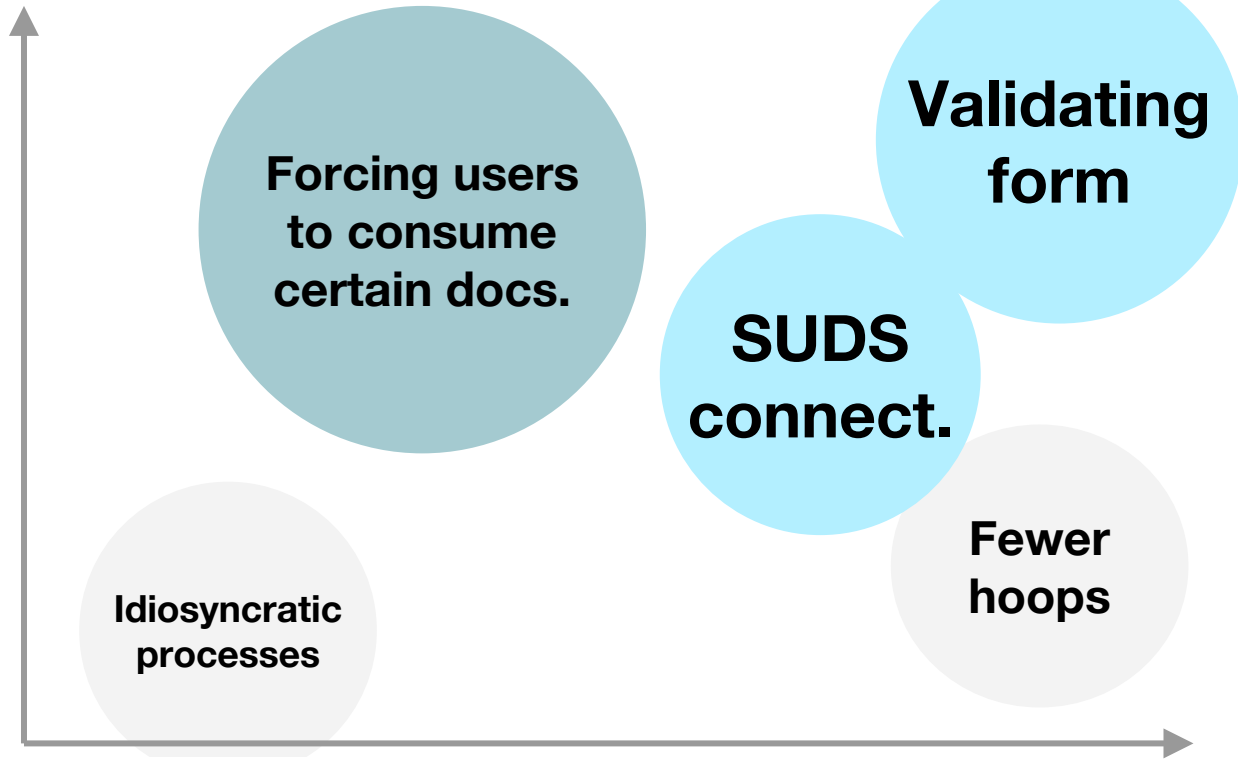
**Validating
form**

**SUDS
connect.**

**Idiosyncratic
processes**

**Fewer
hoops**

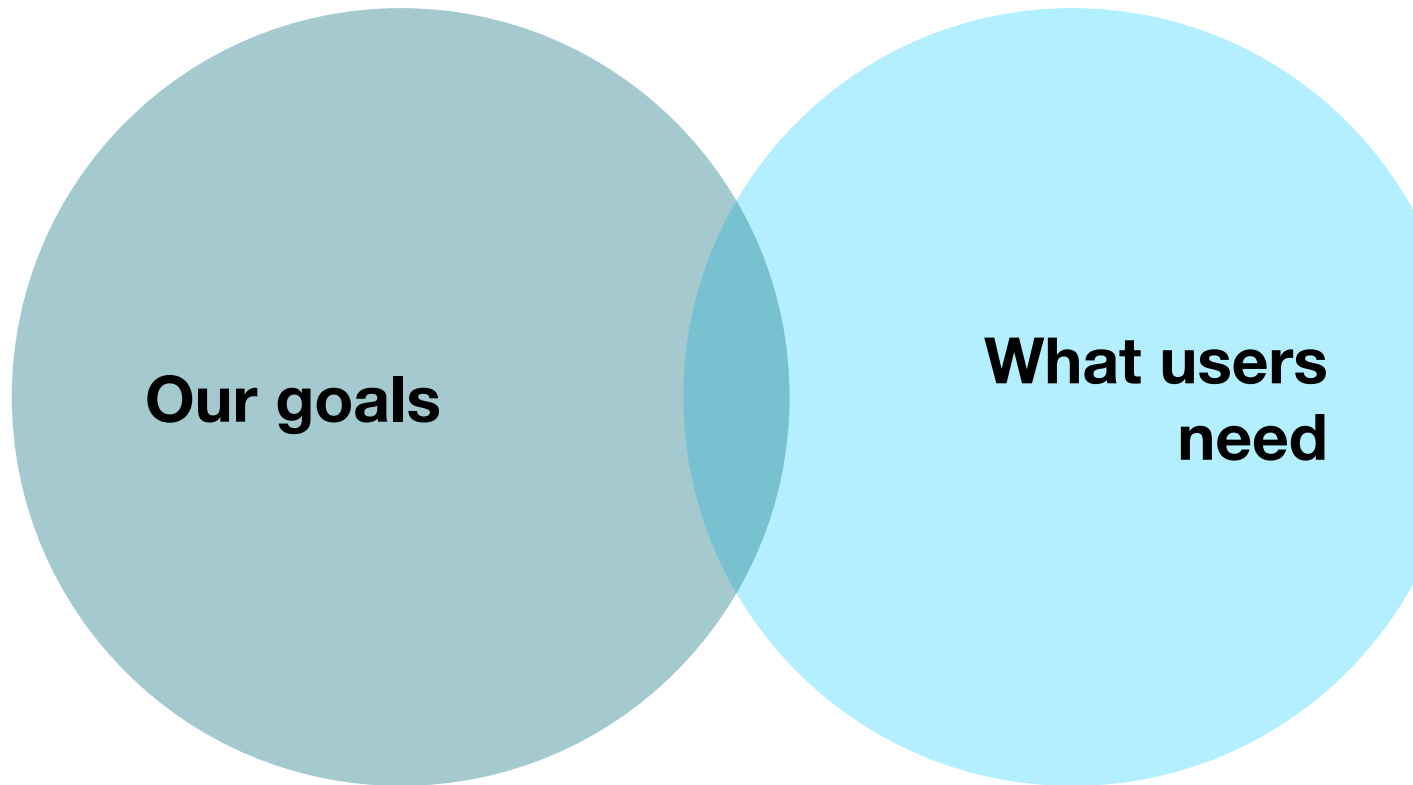
Most users need



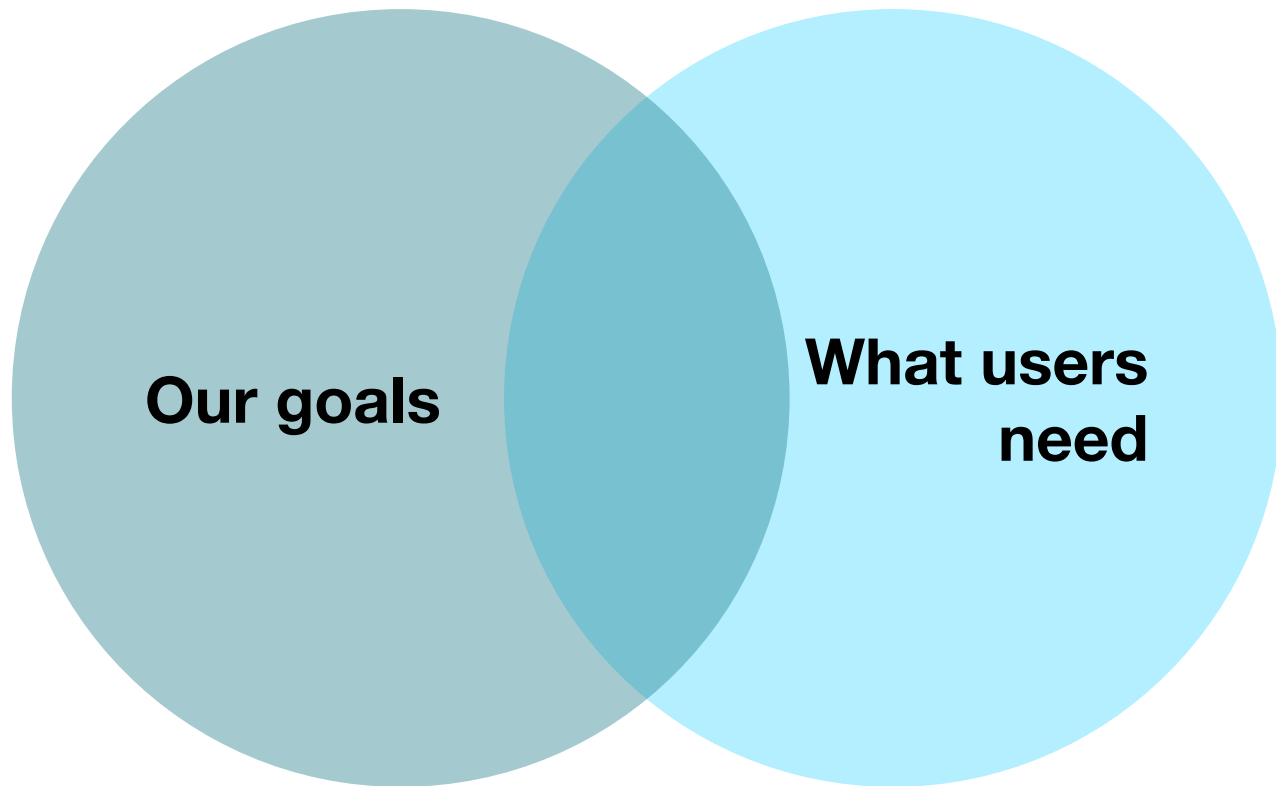


**Aren't we here to focus on
business needs?**

**What
we
think:**



**What's
usually
true:**



**When we help users,
they want to help us.**

**4/ Only accept
proof in use**

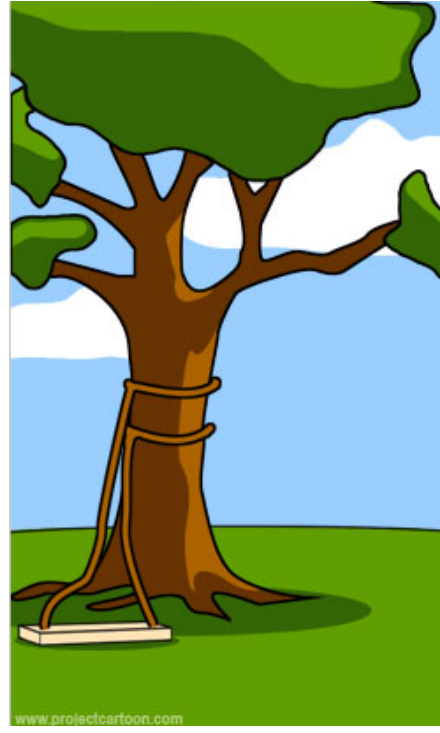
**We're only done when we see
evidence users can accomplish their
goals (also via design research).**



**What users
said**



**What we
heard**



**What we
built**



**What's
needed**

Usually, what we hear, what we make and what's needed aren't aligned the first time.

So we conduct usability testing...

1

Give a user a **working software**.

2

Ask them to **complete a task**, observe and be quiet.

3

Repeat with different users.



**Don't we usually get it right
the first time?**

Example from ePermit:

Unexpected reaction to forms

We heard from everyone:
**“We just need the same form
online.”**

We put the form online:

Primary Permit Holder Information

Permit holder name:

Required

Name of Permit Holder

Is the contact address above the same as the permit holder?

Yes



Then we heard:

- **“Wait! I don’t know what that means.”**
- **“Wait! That’s going to mislead people.”**

In sum...

Review: Four tenets of human-centered design:

1

Put people
before
technology.

2

Conduct
design
research.

3

Focus on
common user
needs.

4

Only accept
proof in use.

5

Part 2:

HCD to NRM

Colin MacArthur

What's next?

NRM HCD jumpstart modules

**Discovery
and in-
person
intensive**

**Contextual
inquiry**

**Usability
testing**

**Journey
mapping**

Visioning

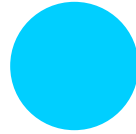
**Next steps
roadmap**

6-10 jumpstart participants



Once or twice:

Attend 2 day intensive
(uninterrupted)



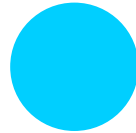
Monthly until Feb:

2 hour webinar
2 ½ hour coaching sessions



Throughout:

Willingly apply techniques to
their projects



After jumpstart:

Serve as experts and
champions