


User Interface Software Projects

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INF 134 Winter 2013



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Interaction design basics



Content derived from Dix, Finlay, Abowd, Beale <http://www.hcibook.com/>

What is design?

What is design?

Achieving Goals Within Constraints



Achieving Goals Within Constraints

- goals
 - who is it for?
 - why do they want it?
 - what is the designer trying to achieve?
- constraints
 - materials, platforms
- trade-offs



What is interaction design?

- Designing interactions not just interfaces
 - not just the immediate interaction
 - e.g. stapler in office – technology changes interaction style
 - manual: write, print, staple, write, print, staple, ...
 - electric: write, print, write, print, ..., staple
- designing interventions not just artifacts
 - not just the system, but also ...
 - documentation, manuals, tutorials
 - what we say and do as well as what we make



Understand your materials

Understand your materials



Understand your materials

- For Human-Computer Interactions
 - understand computers
 - limitations, capacities, tools, platforms
 - understand people
 - psychology, social
 - expect human error
 - understand the interaction between them

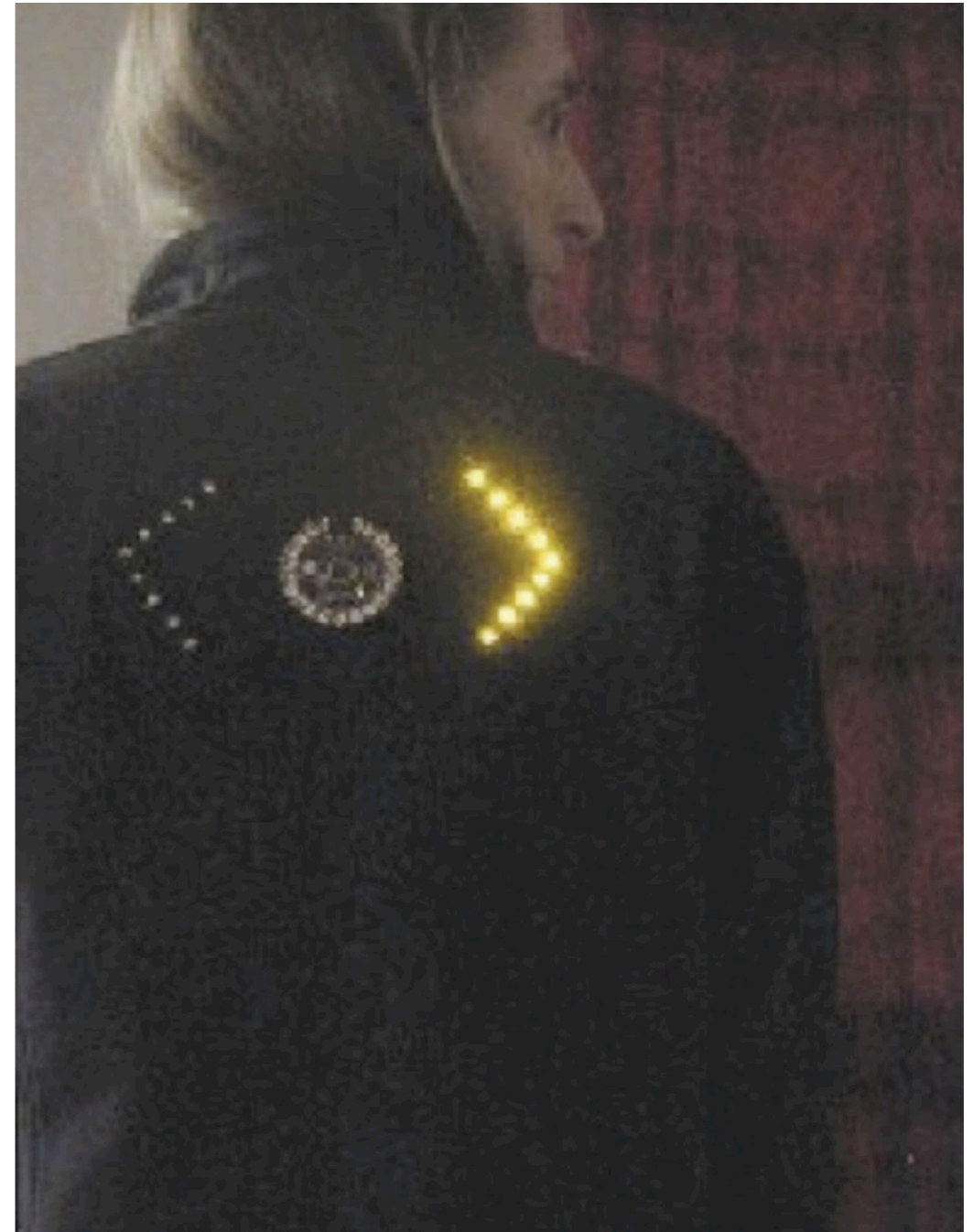


To err is human

- accident reports ..
 - air crash, industrial accident, hospital mistake
 - inquiry ... blames ... 'human error'
- but ...
 - concrete platform breaks because too much weight
 - blame 'platform error' ?
 - ... no – it's a design error
 - we know how concrete behaves under stress
- human 'error' is normal
 - we know how users behave under stress
 - so design for it!
- treat the user at least as well as physical materials



Novel Interface



Novel Interface

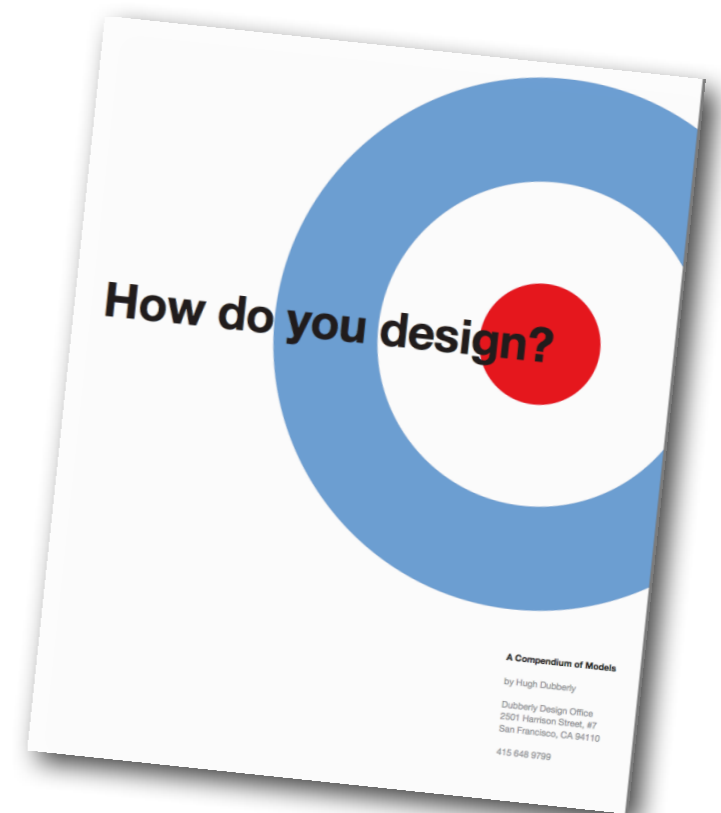


<http://freshome.com/2011/05/30/wake-up-or-start-your-day-sobbing-the-money-shredding-alarm-clock/>

Focus on the user

- participatory design

Conceptualizing Design



Everyone designs.

**The teacher
arranging desks
for a discussion.**

**The entrepreneur
planning a business.**

**The team
building a rocket.**

Their results differ.

**So do their goals.
So do the scales of their projects
and the media they use.**

**Even their actions
appear quite different.**

**What's similar
is that they are designing.**

**What's similar
are the processes
they follow.**

**Our processes
determine the quality
of our products.**

**If we wish to improve our products,
we must improve our processes;
we must continually redesign
not just our products
but also the way we design.**

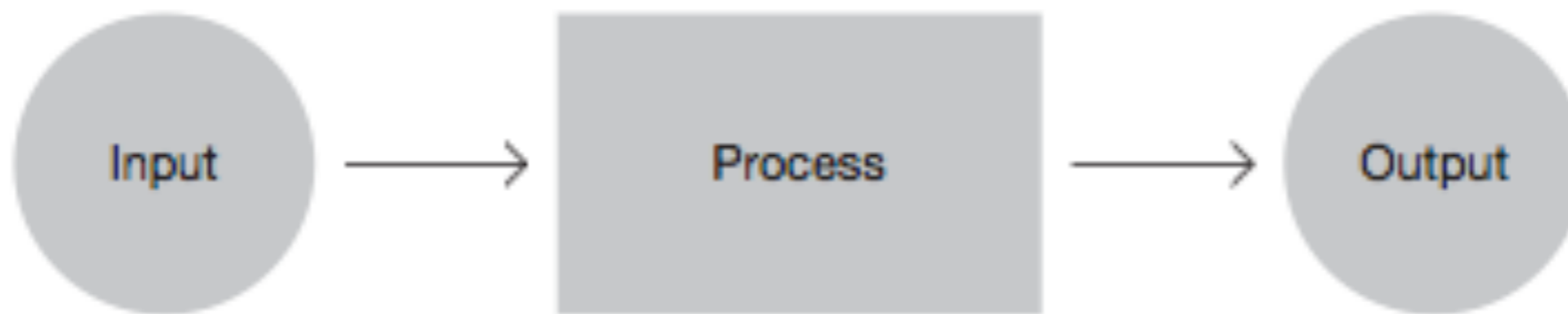
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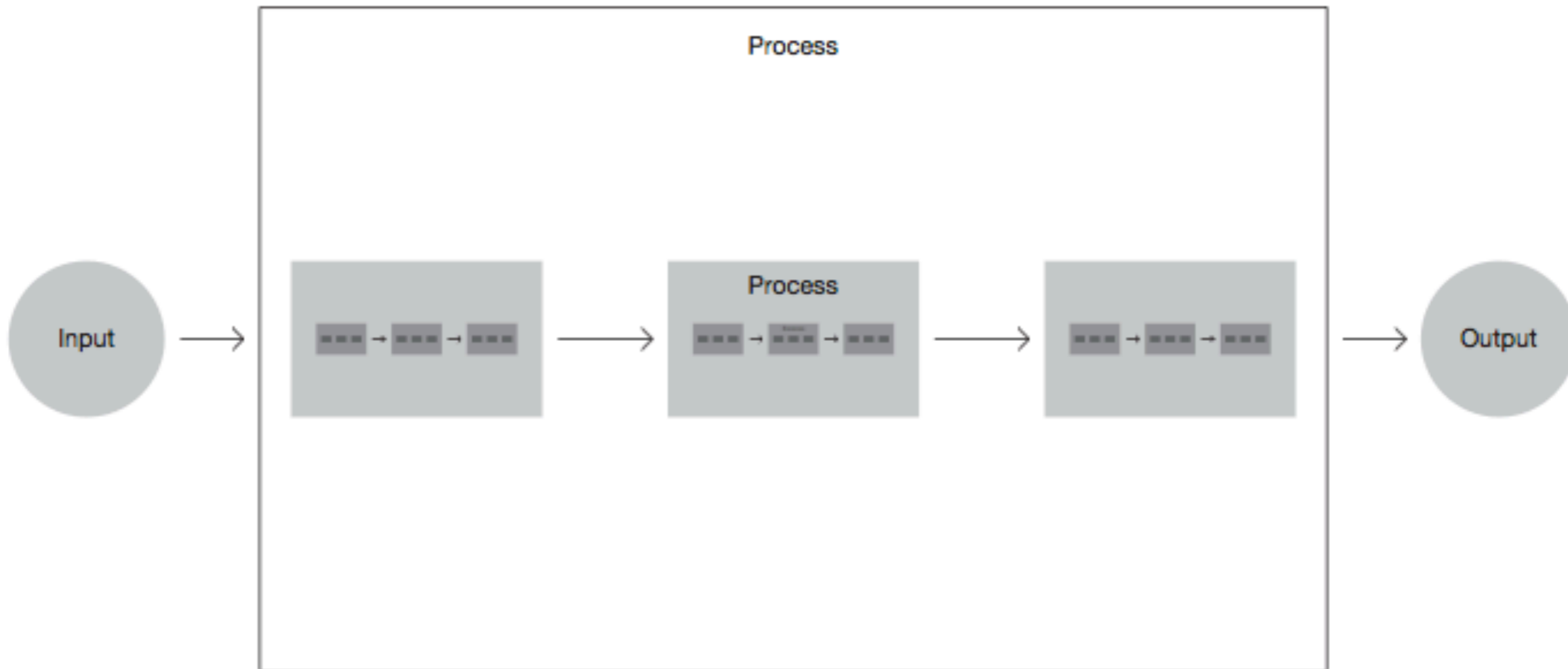
That's why we study the design process.

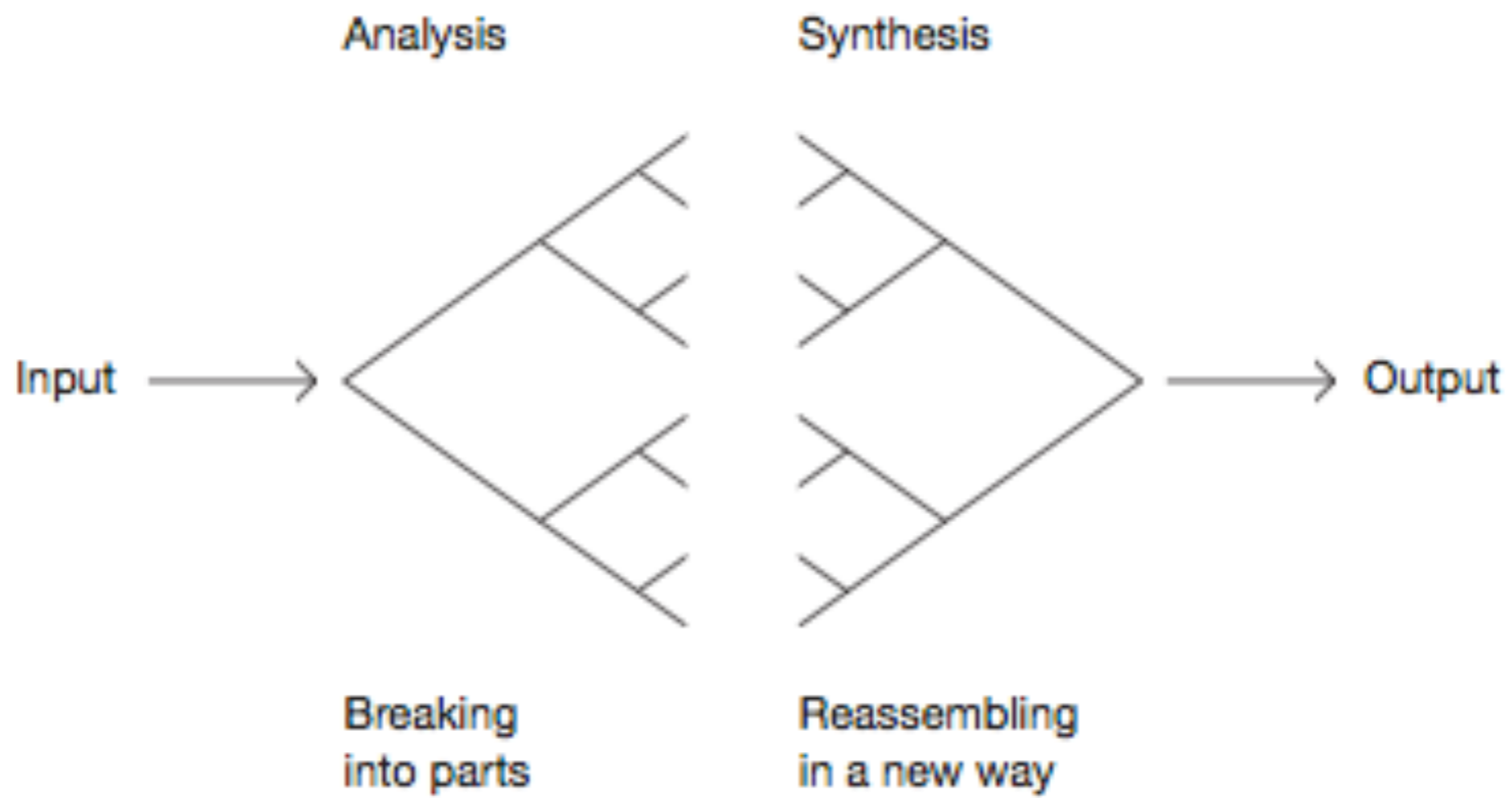
**To know what we do
and how we do it.**

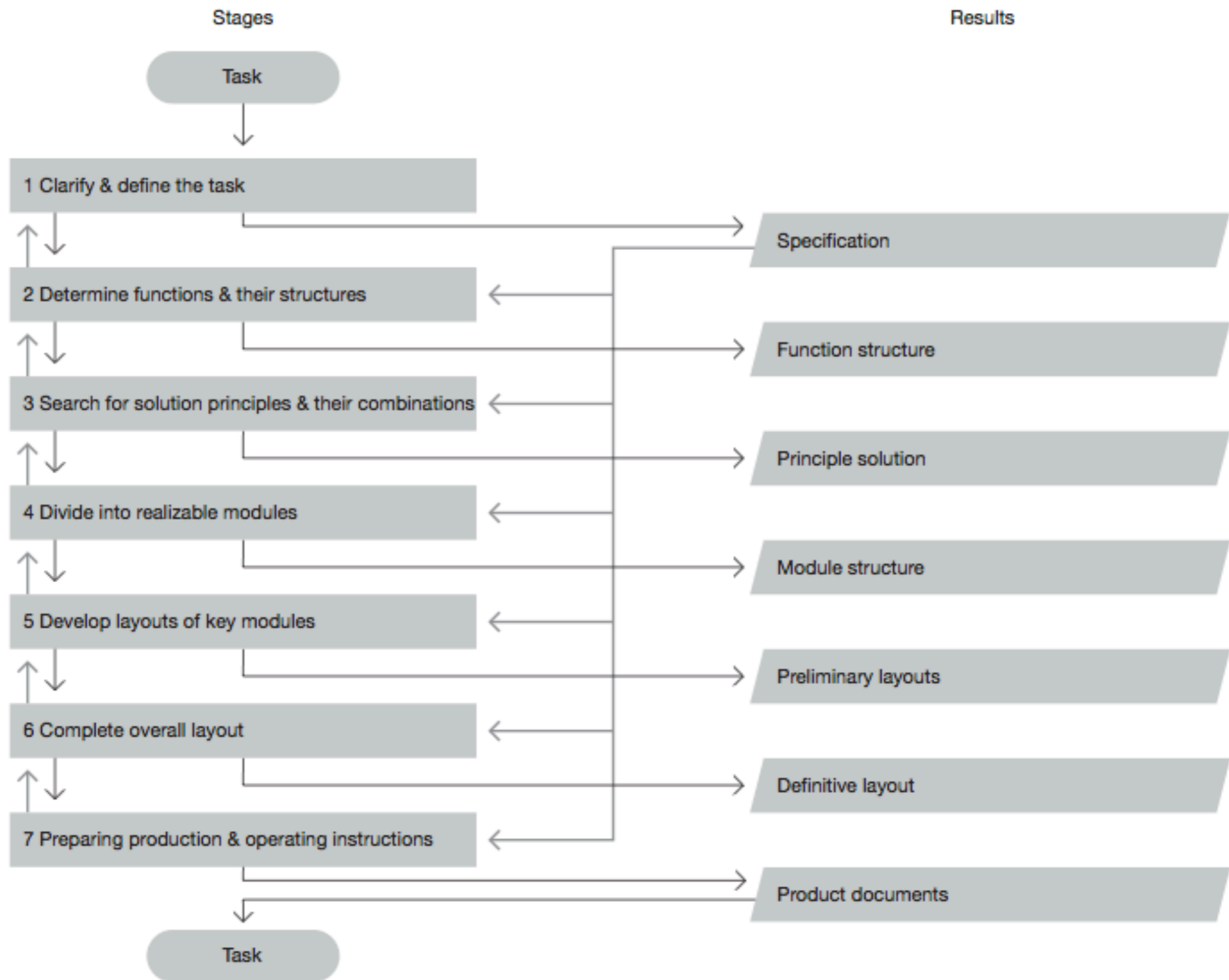
**To understand it
and improve it.**

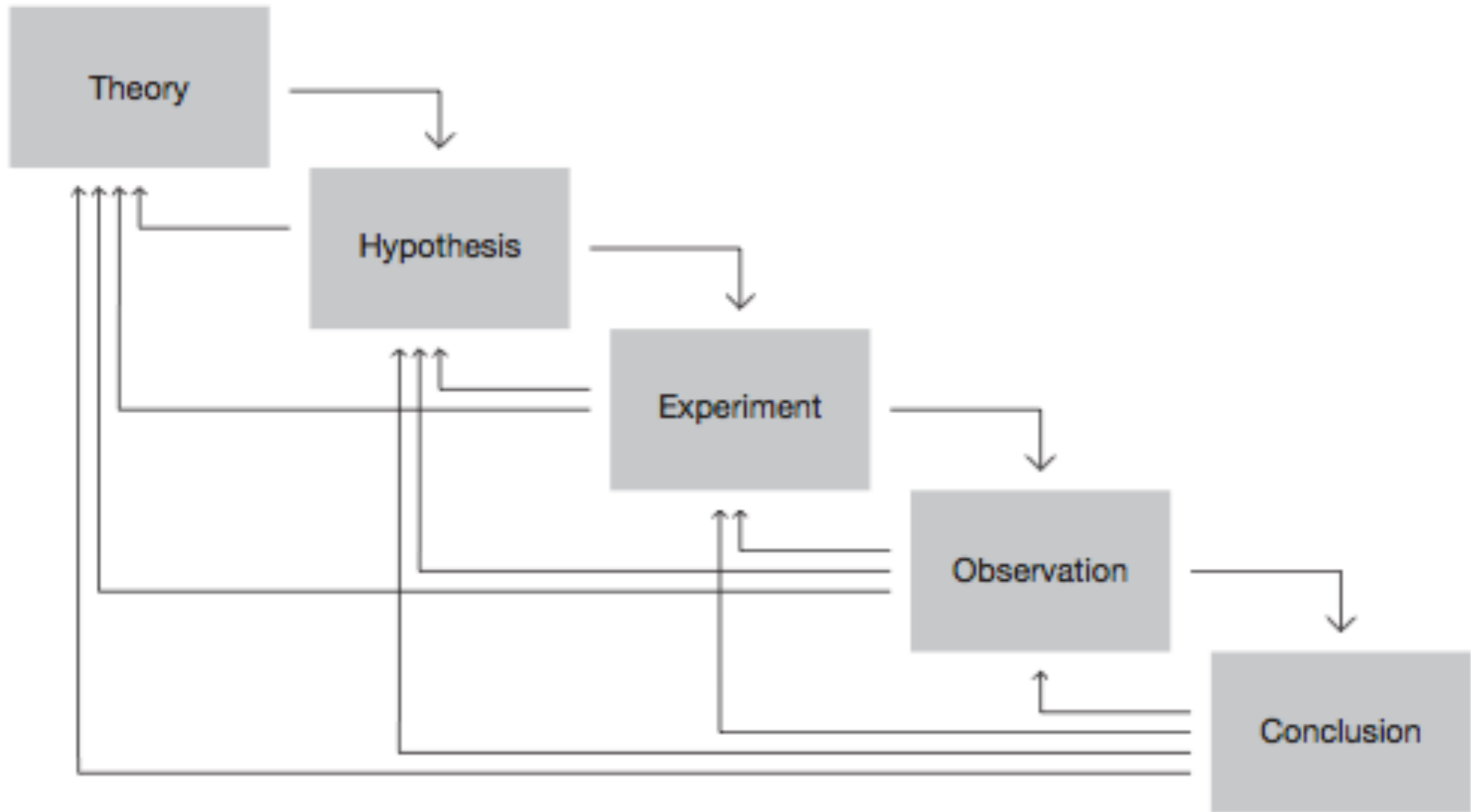
To become **better designers.**



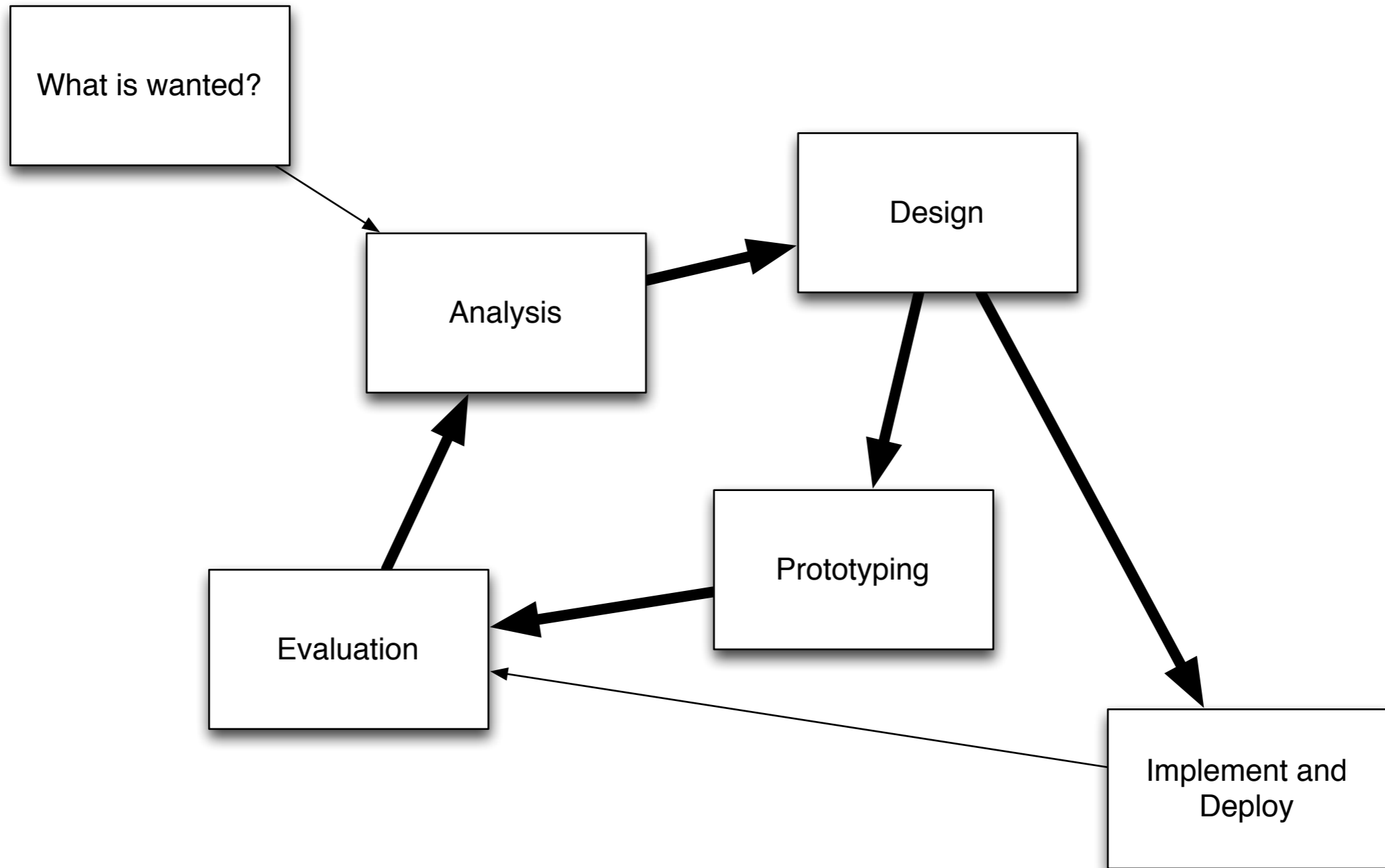




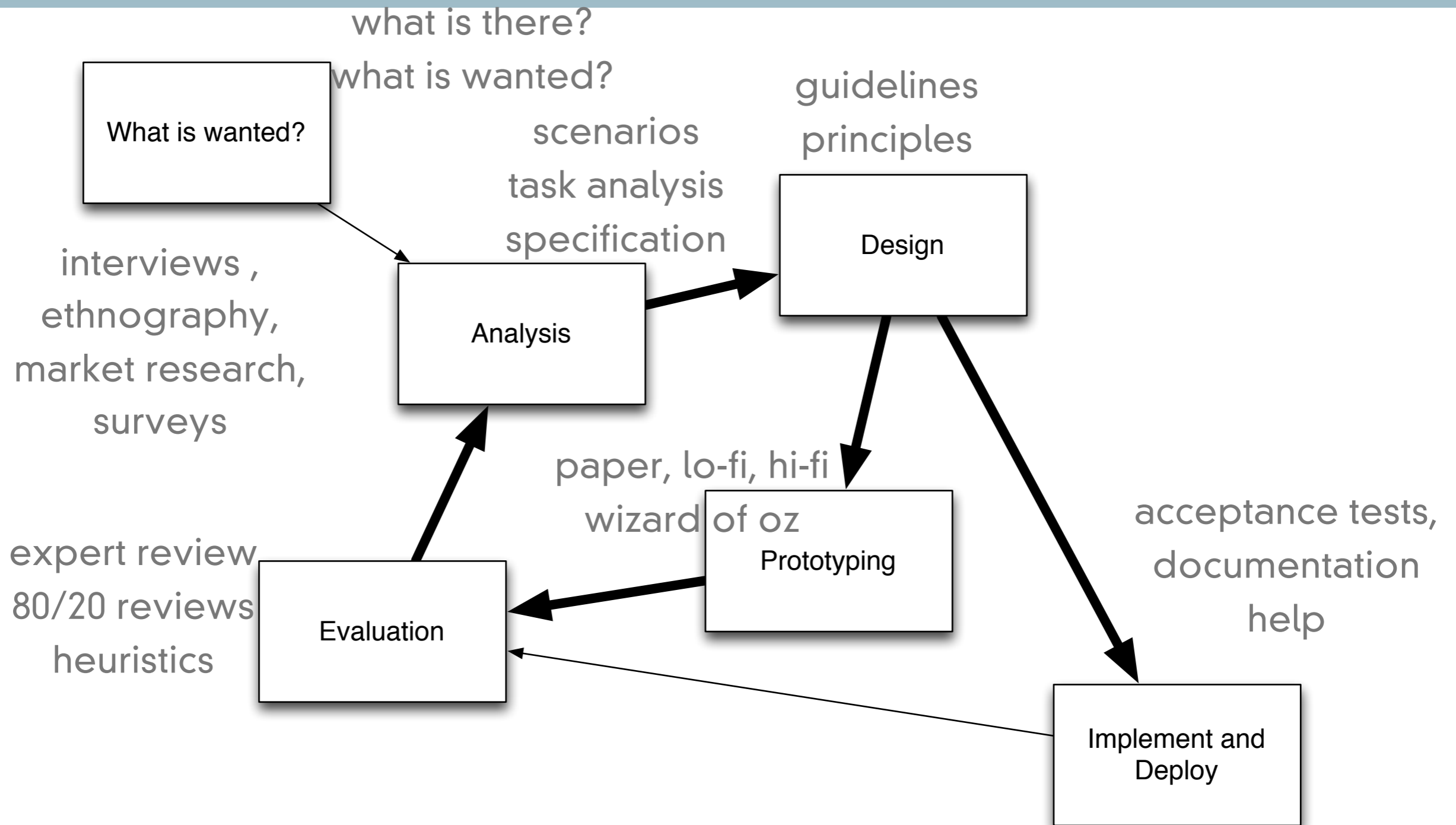




An Interaction Design Process



An Interaction Design Process



Steps...

- requirements
 - what is there and what is wanted ...
- analysis
 - ordering and understanding
- design
 - what to do and how to decide
- iteration and prototyping
 - getting it right ... and finding what is really needed!
- implementation and deployment
 - making it and getting it out there



An Interaction Design Process

- Real-world constraints create tensions
 - materials, platforms
 - time, money, labor



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GOOD

FAST

CHEAP

Choose two

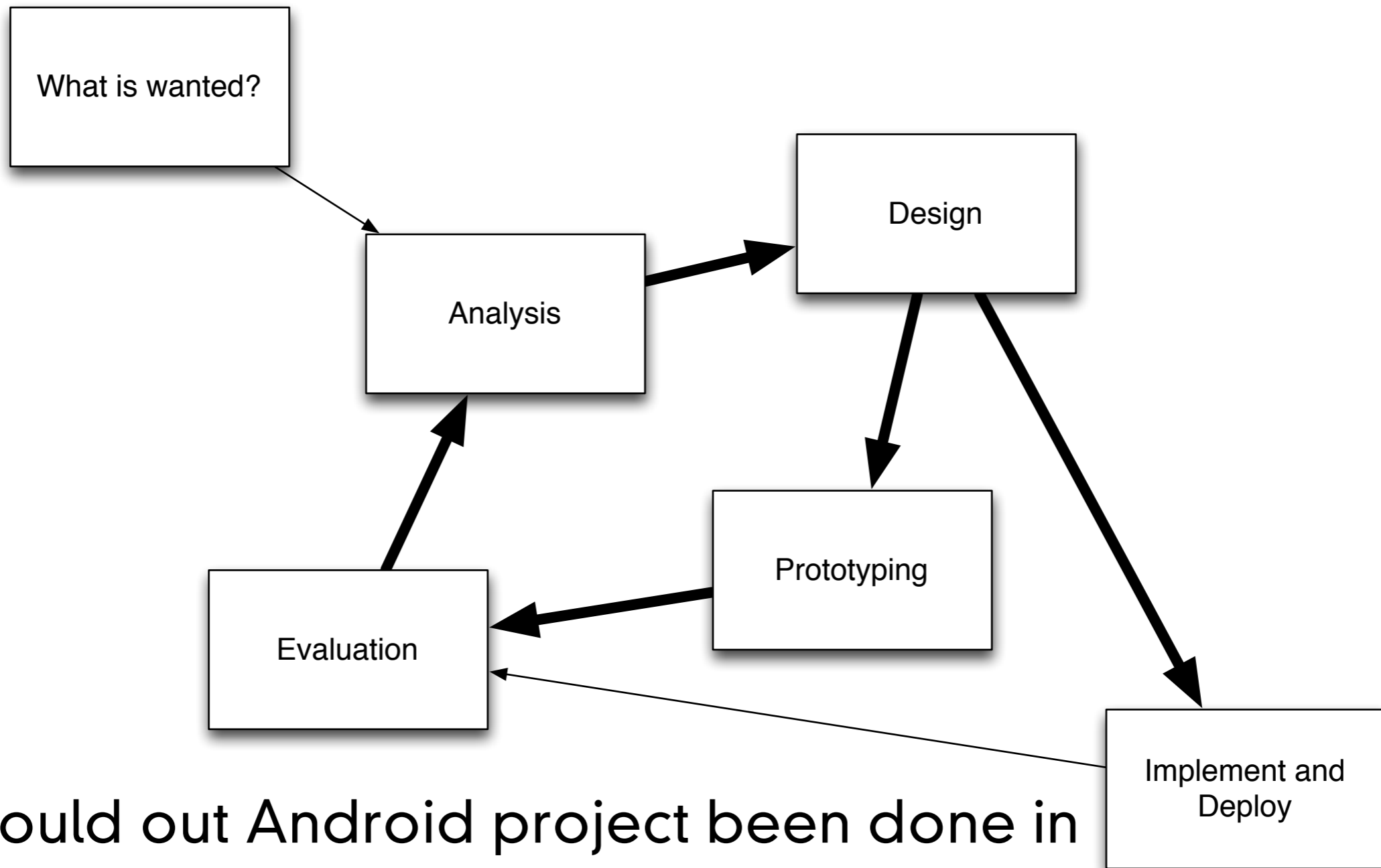


An Interaction Design Process

How could our Android project be done in a more principled way using this framework?



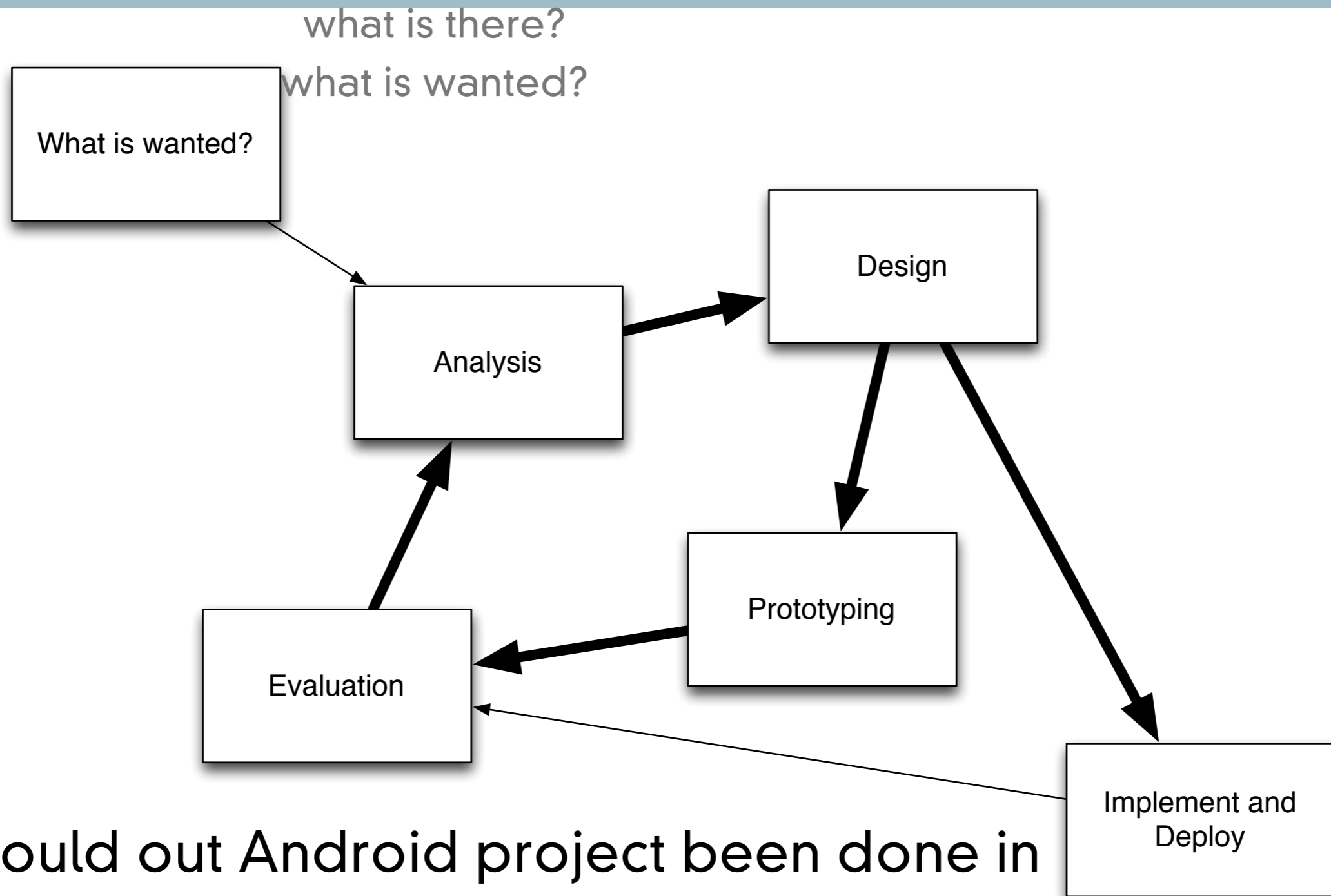
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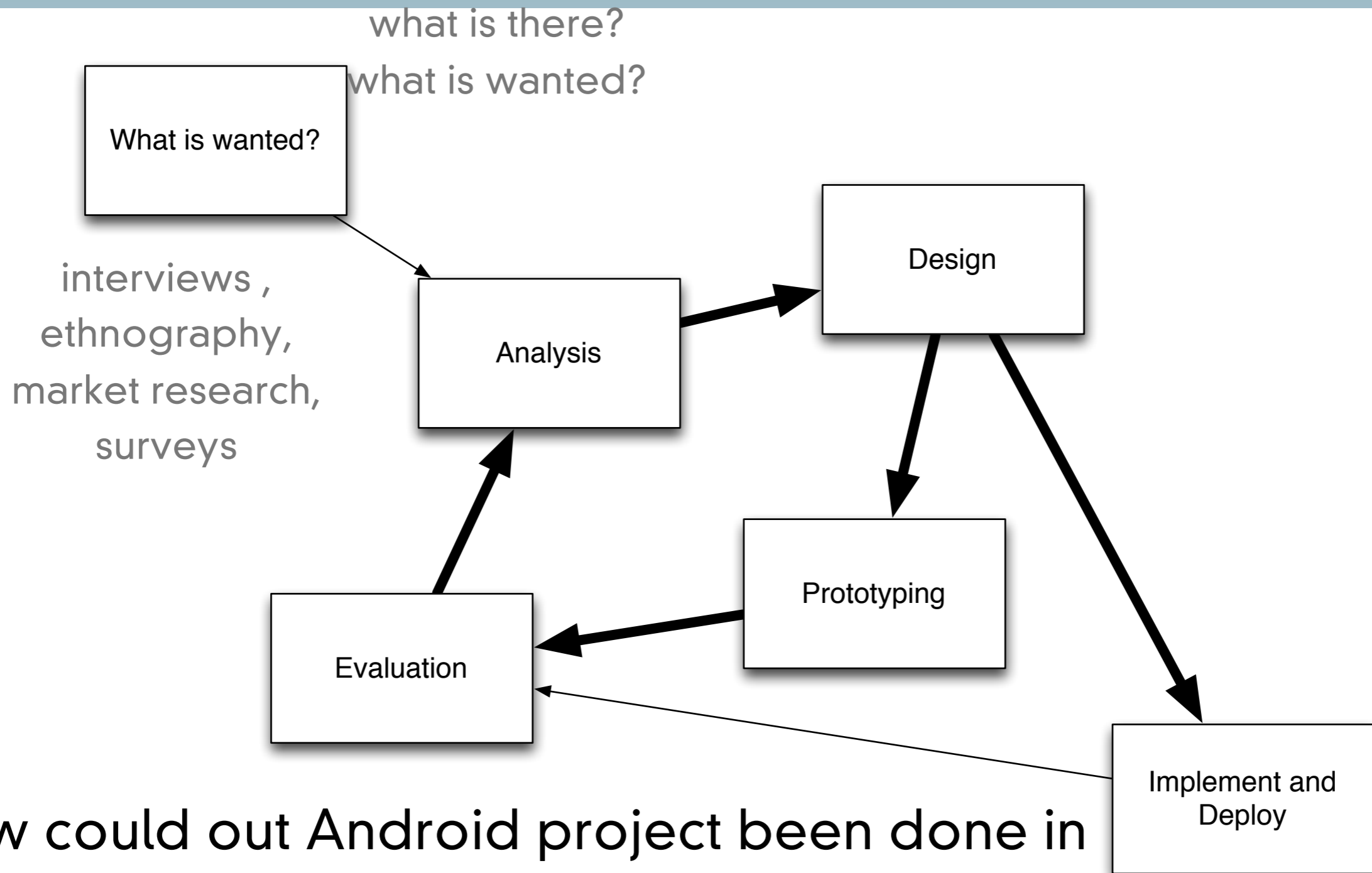
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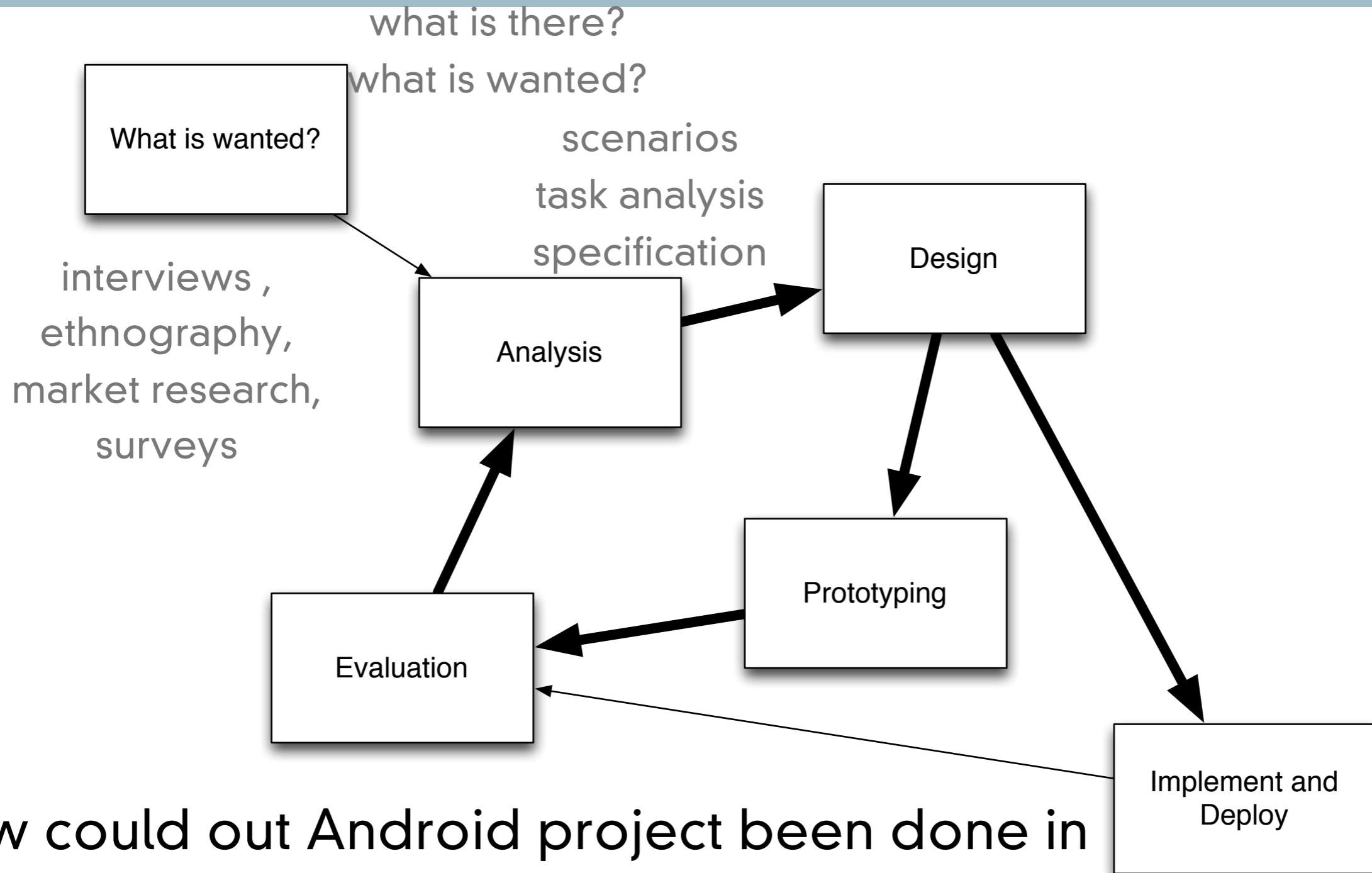
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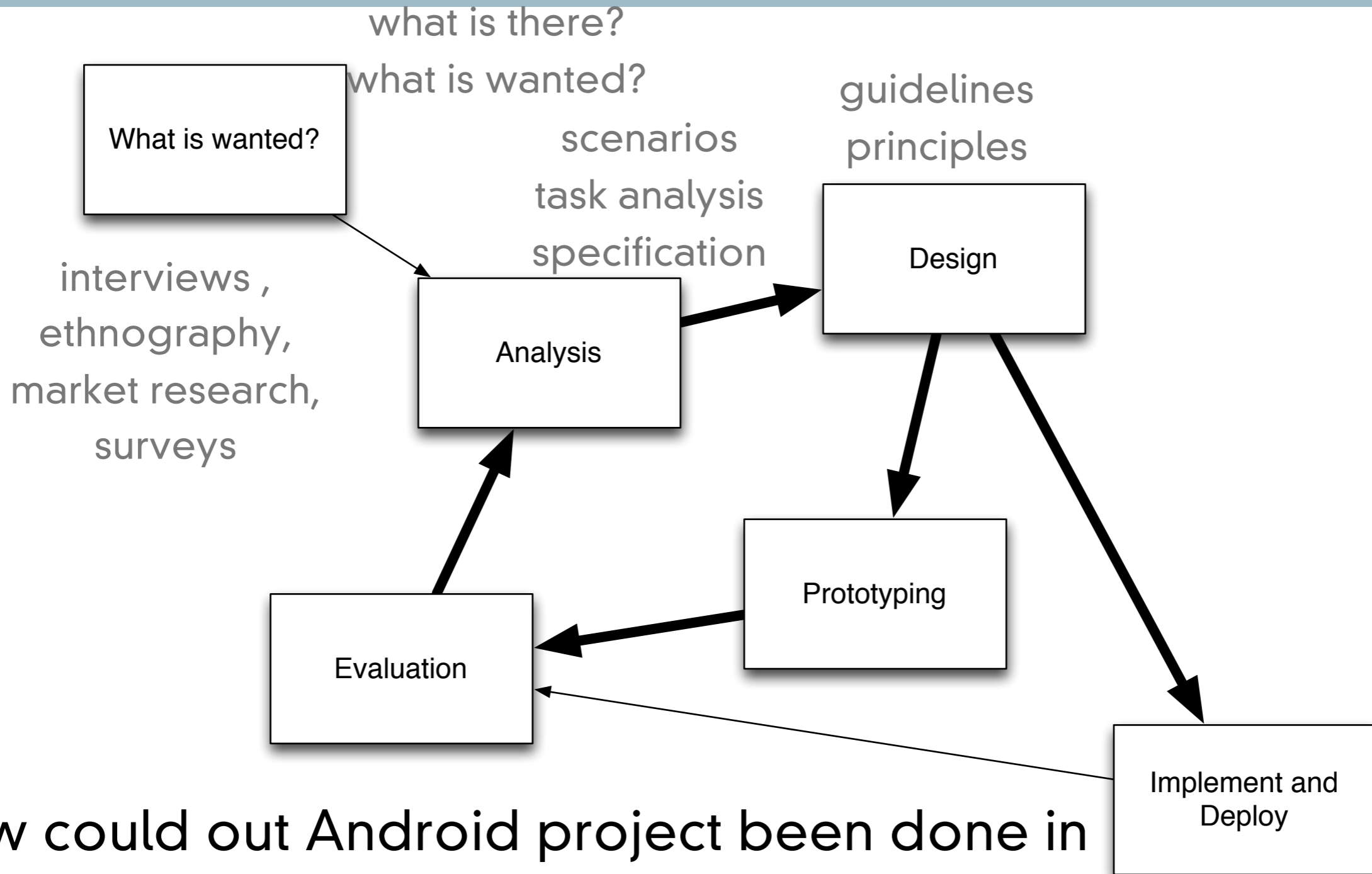
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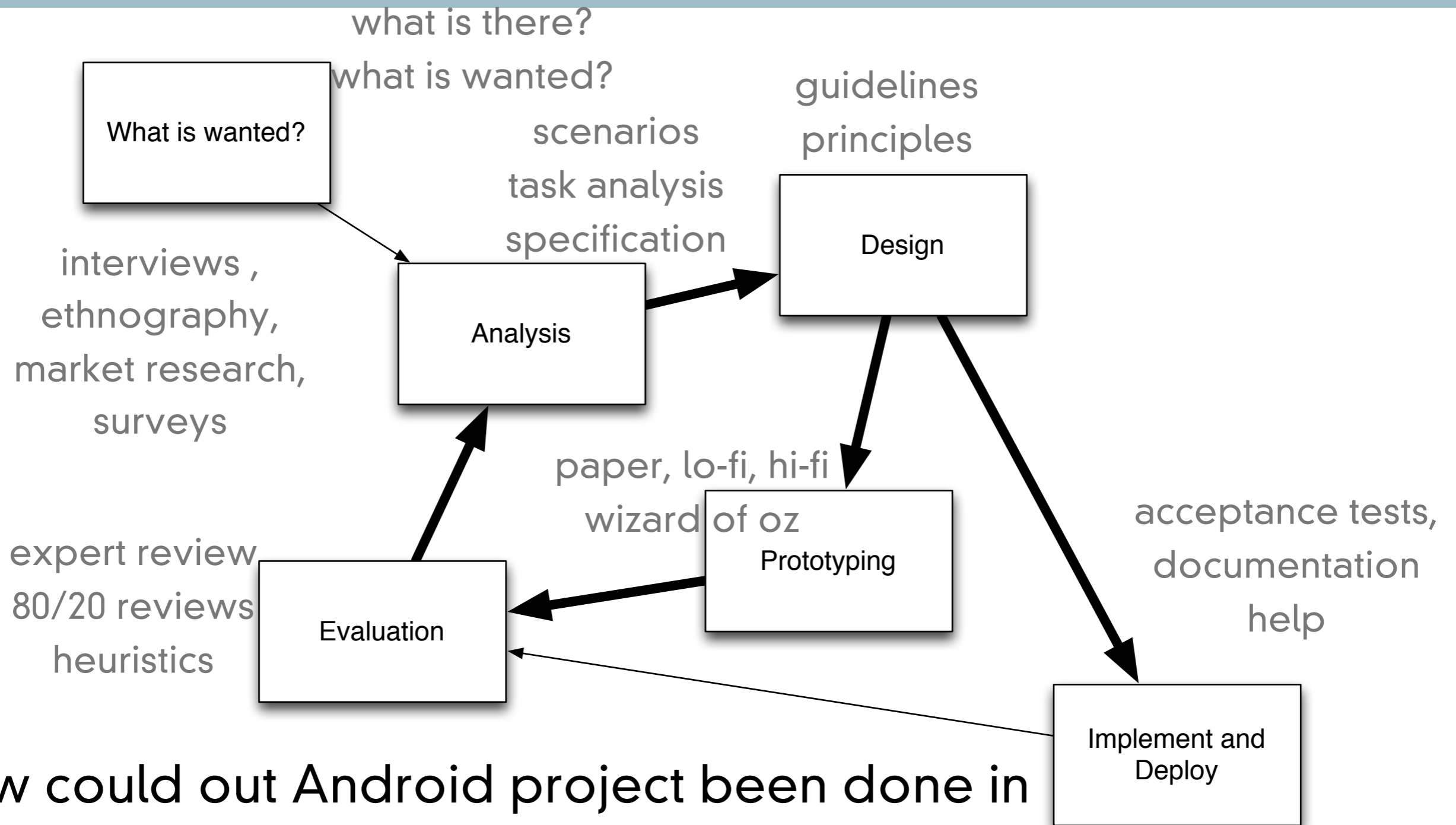
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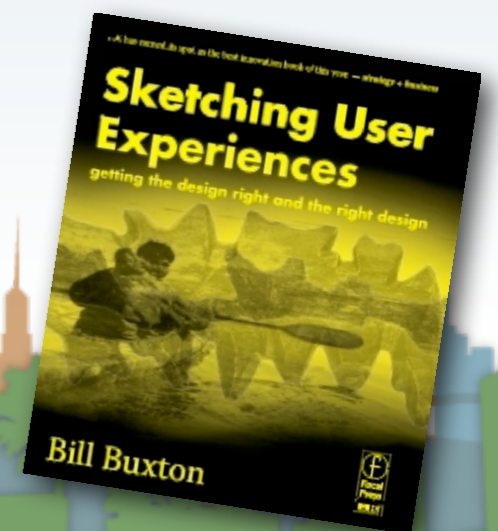
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Interactive Paper Interfaces



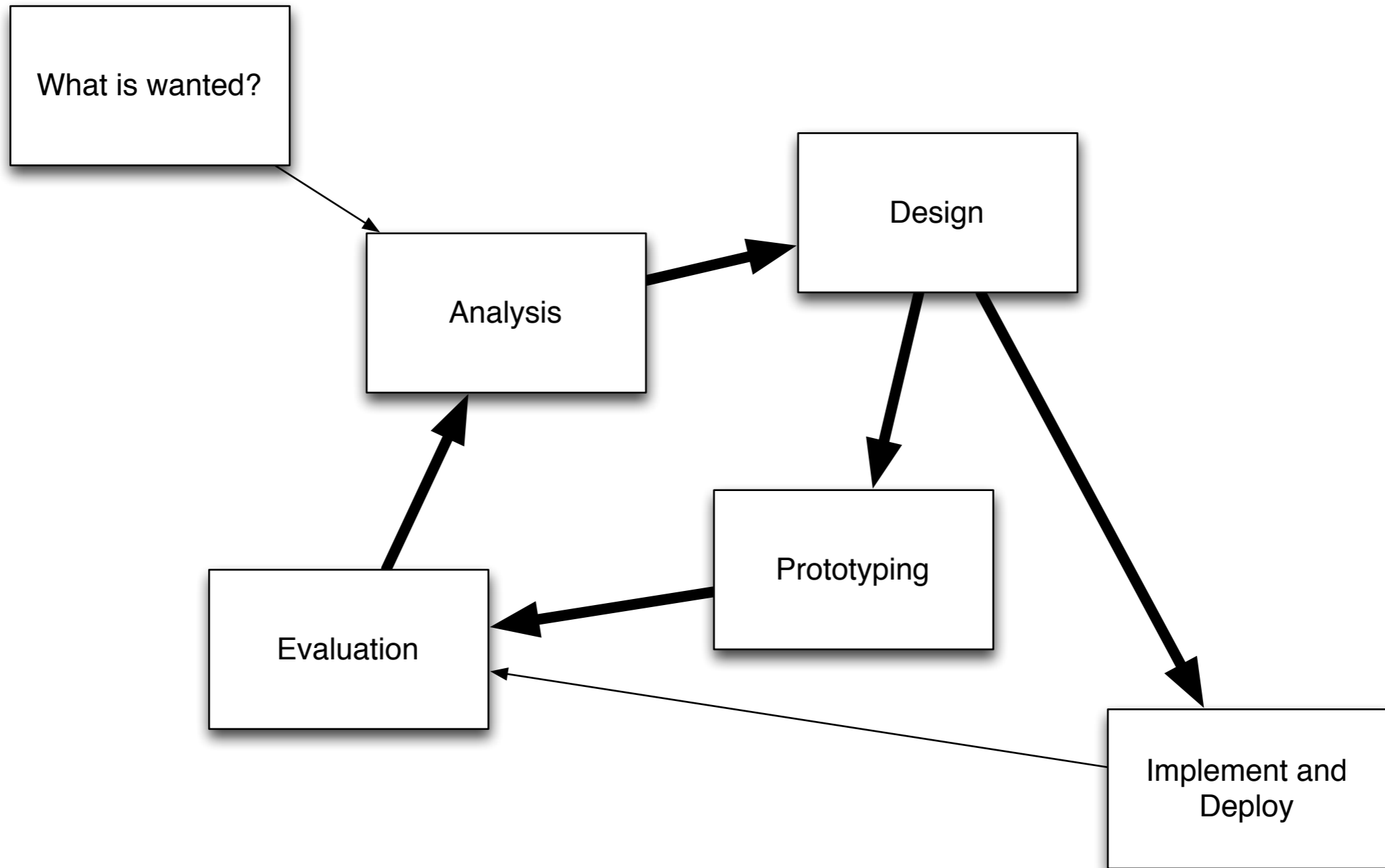
Content derived from Buxton, [Sketching User Experiences/](#)

Interactive Paper Interfaces

- It is a part of a participatory design process
- General Goal:
 - Use rapid prototyping to explore the design space
 - Works well with brainstorming
- Important that it be sketched
- Sketched is not just about drawing, it's also an attitude



Design Process



Interactive Paper Interfaces

- Why sketching?
 - Quick
 - Timely
 - Inexpensive
 - Disposable
 - Plentiful
 - Clear Vocabulary
 - Distinct Gesture
 - Minimal Detail
 - Appropriate degree of refinement
 - Suggest and explore, not confirm
 - Ambiguity

Quick to make (at least after some practice)



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Interactive Paper Interfaces

- Sketching Exercise
 - YouTube
 - LA Times
 - Amazon



Interactive Paper Interfaces - so what is paper prototyping?

- Turning it into a video example
 - Post it note example video

