The Process of UX Design

CMPT 363

"Perfection (in design) is achieved not when there is nothing more to add, but rather when there is nothing more to take away."

— Antoine de Saint-Exupéry

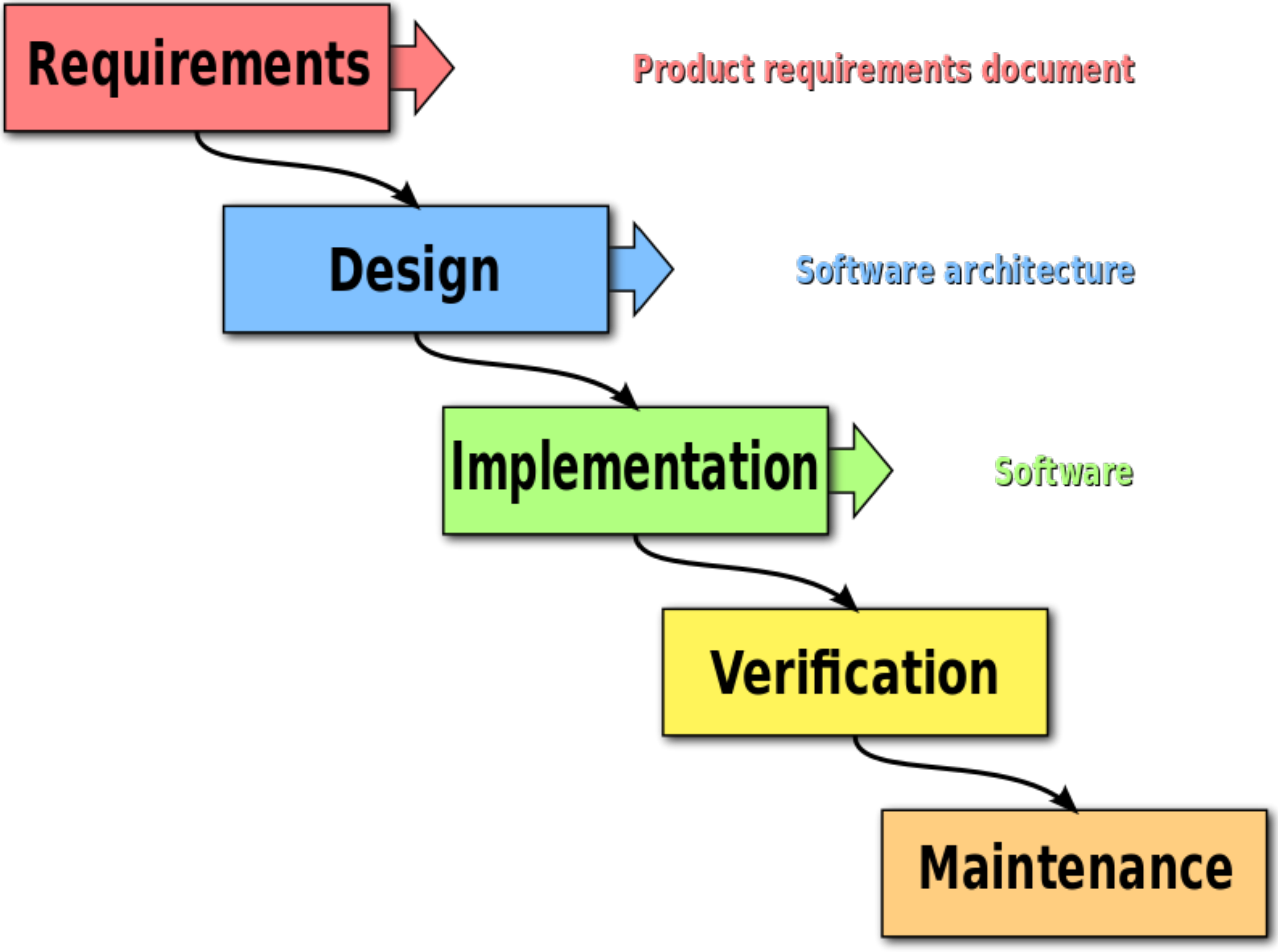
What does a holistic user experience design process look like?

Topics to Explore

1. Software Development Processes
2. User Experience Design Processes
3. Our Design Process (aka Toolkit)

What does a holistic user experience design process look like?

Software Development Processes


Requirements
Product requirements document
Design
Software architecture
Implementation
Software
Verification
Maintenance

WaterFall Challenges

- Software development as pure production
- Knowing all required information upfront
- Time estimates are extremely hard to make
- Often entire project must be completed to fully test
- Long feedback and development cycles

Activity: Pop Quiz

Courtesy of the Safari Books Online course ‘Agile for Everybody - The Essentials of Agile and Lean’ by Matt LeMay

True or False?

Agile and Lean are about doing things faster

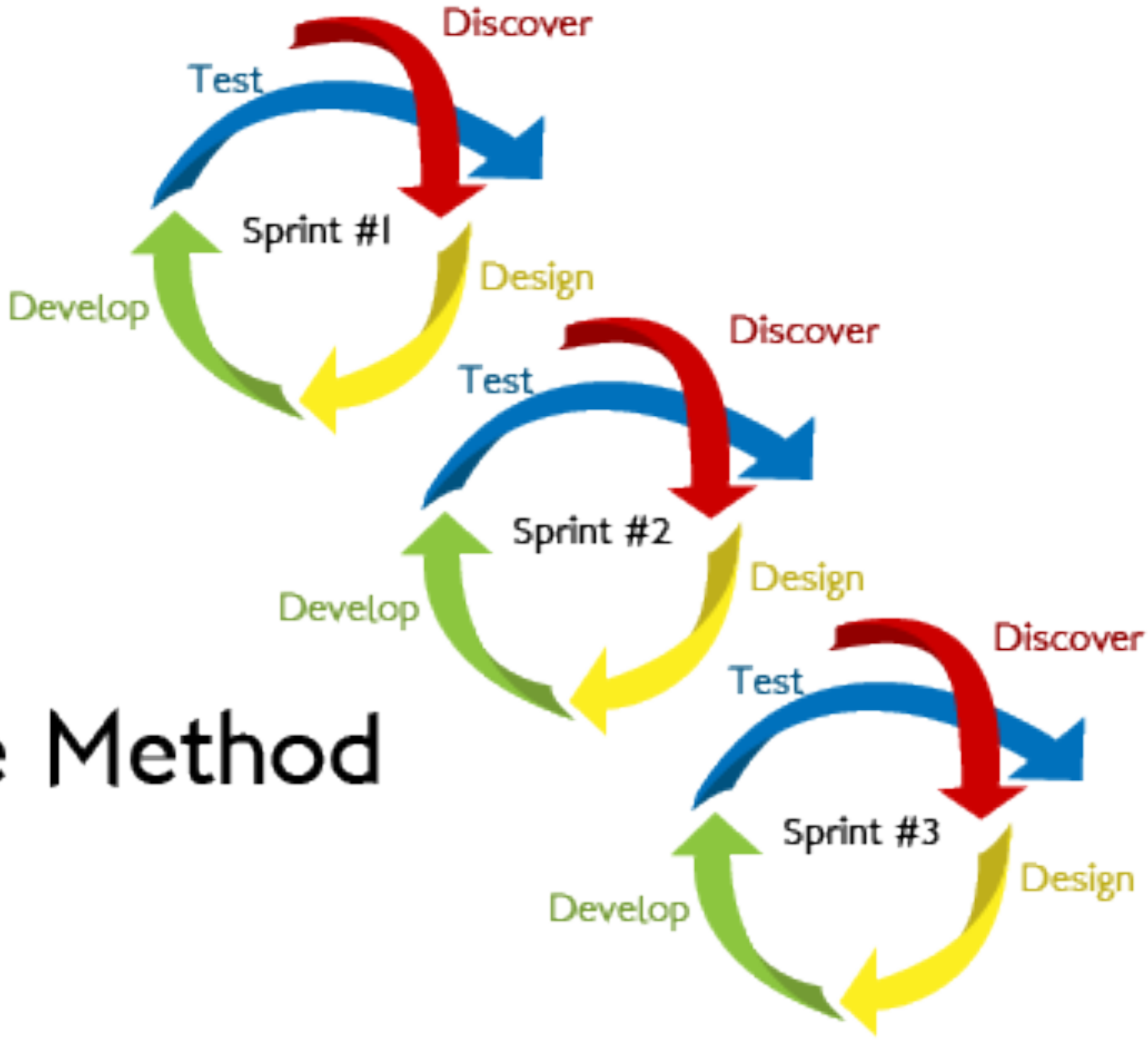
True or False?

Agile and Lean are rigid frameworks

True or False?

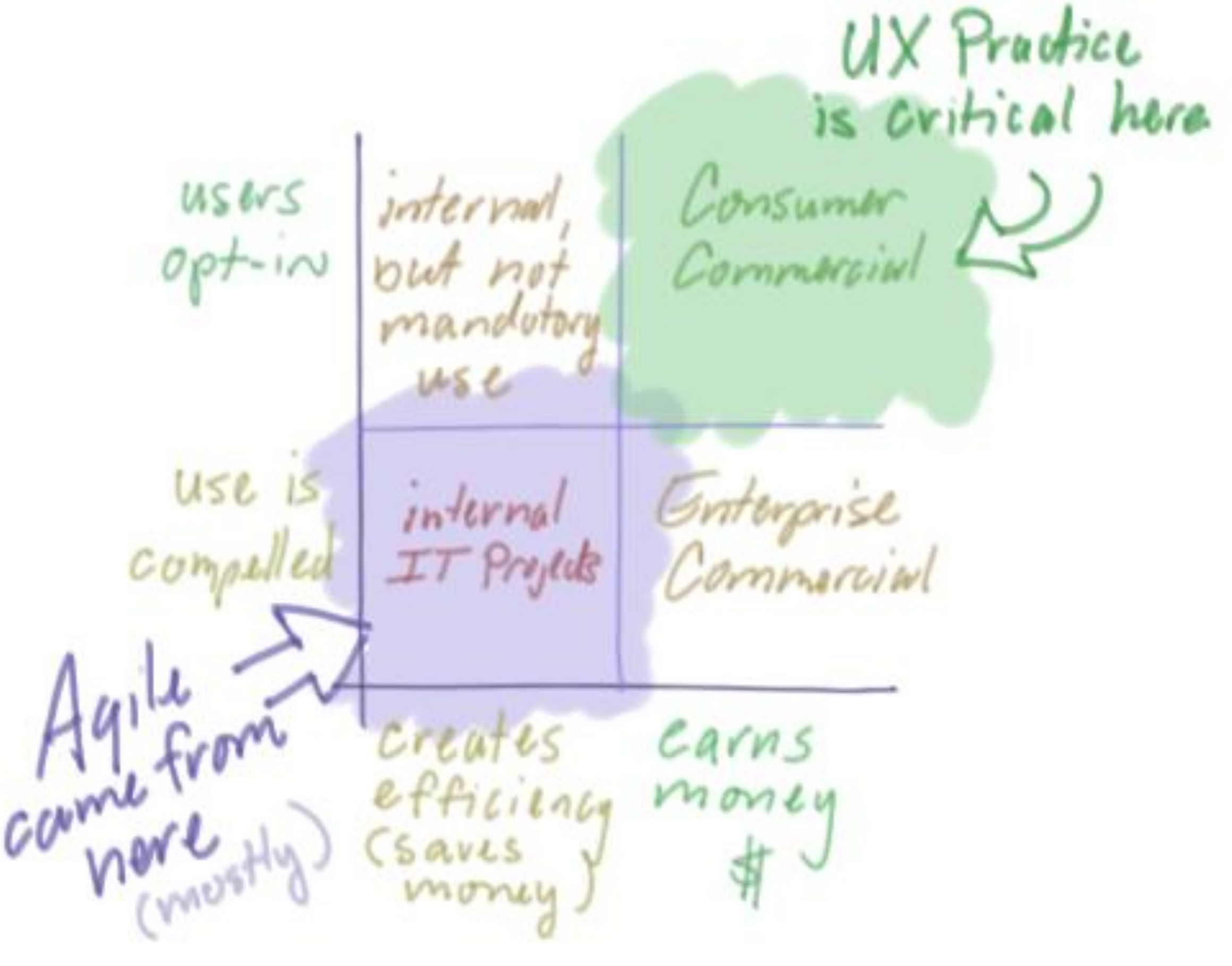
Agile and Lean are only for software developers

Agile Method

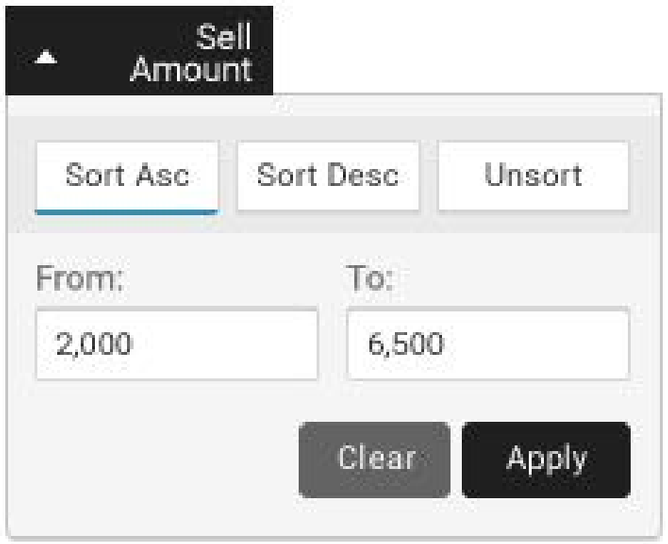


Agile Manifesto

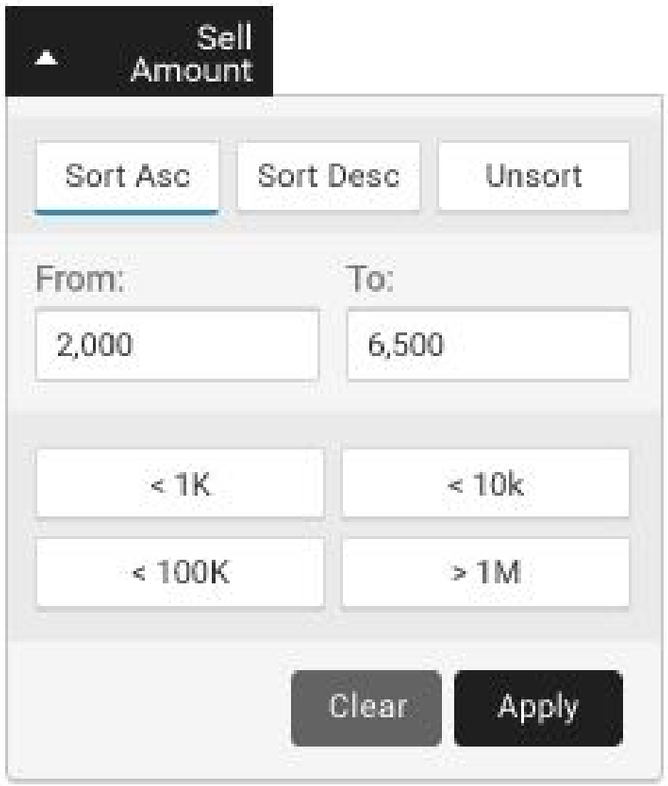
Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan


UX Practice is critical here
users opt-in
internal, but not mandatory use
Consumer Commercial
use is compelled
internal IT Projects
Enterprise Commercial
Agile came from here (mostly)
creates efficiency (saves money)
earns money $

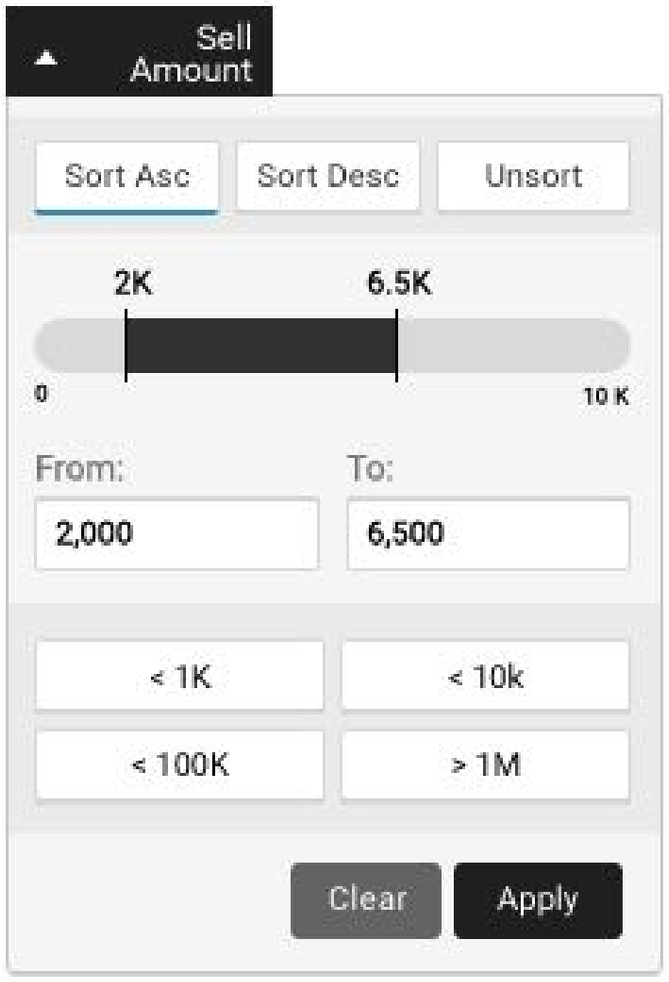
With Agile we can combine iterative design with incremental development...



This filter allows the user to enter a to and from amount



This filter adds presets so that the user doesn't have to type in the values if there is a preset that matches their requirements.

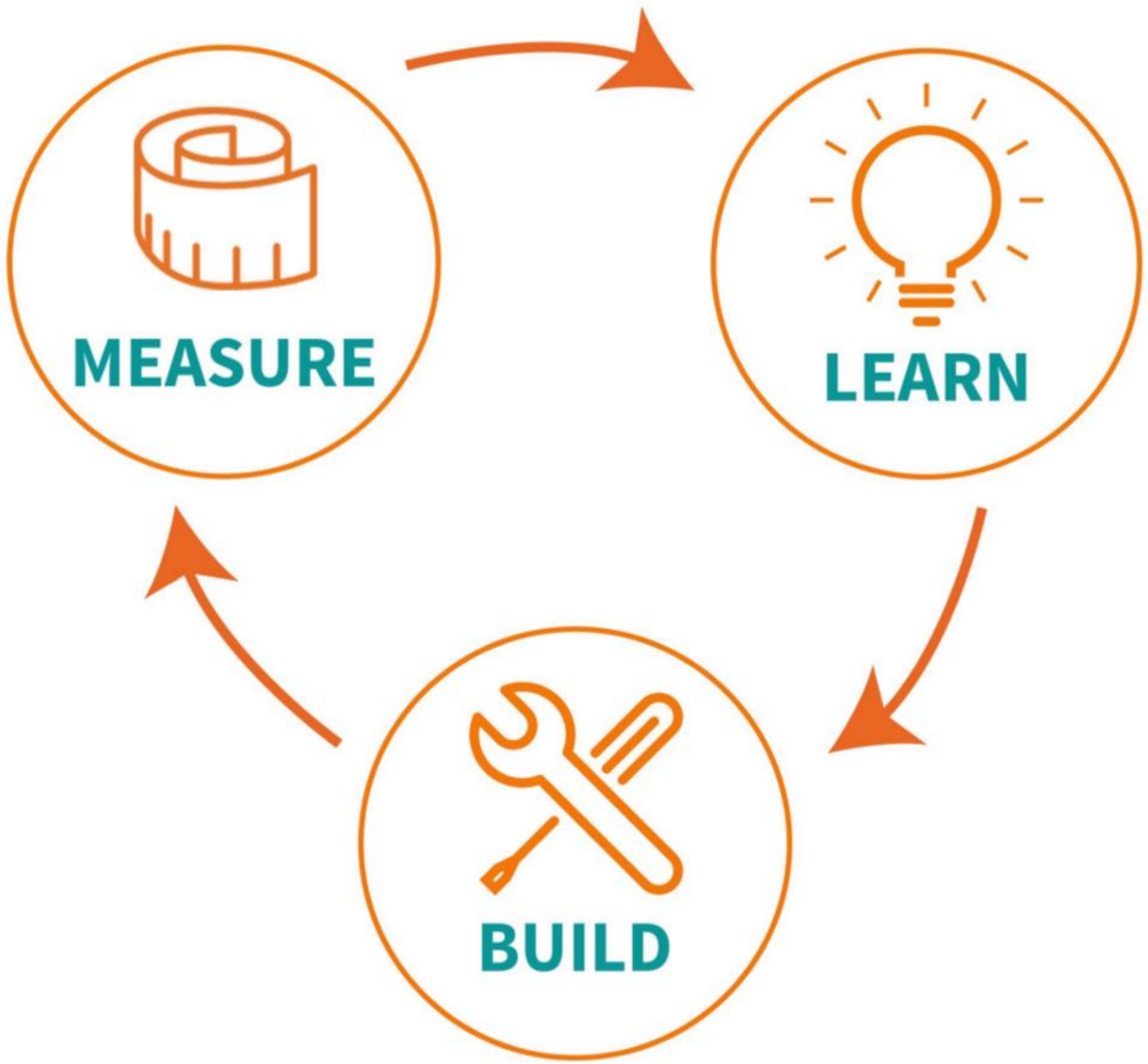


This filter adds a visual controls for the user to be able to set the filter. This control would need to know the largest and smallest value in the dataset in order to be able to set the min and max values on the slider.

Lean Development (based on the Toyota Way)[1]

- A mindset, or **way of thinking**, commitment to achieve a totally waste-free operation that's focused on your customer's success
- It is achieved by **simplifying and continuously improving** all processes and relationships in an environment of trust, respect and full employee involvement
- It is about people, simplicity, flow, visibility, partnerships and true value **as perceived by the customer**

[1] Source: David Hogg, High Performance Solutions, 2008


MEASURE
LEARN
BUILD

With Lean each Design (Decision) is Viewed as a Hypothesis

A hypothesis can be defined as an educated guess that then can be tested to be shown correct

https://www.youtube.com/watch?v=_w-NUOjwMto

Example Hypotheses (includes outcome & assumption)

- We believe that our customers will find the “add to cart” button because it is highly visible
- We believe that our customers will be able to complete the checkout process because it is very simple

Activity: Write a Hypothesis

INDIVIDUAL OR TEAM

Write a simple hypothesis for a design decision involving a change to the GoSFU course registration system

Format: We believe that [outcome] because [assumption]

Example Hypotheses (includes outcome & assumption)

We believe that our customers will find the "add to cart" button because it is highly visible

We believe that our customers will be able to complete the checkout process because it is very simple

Waterfall vs. Agile vs. Lean?

problem space

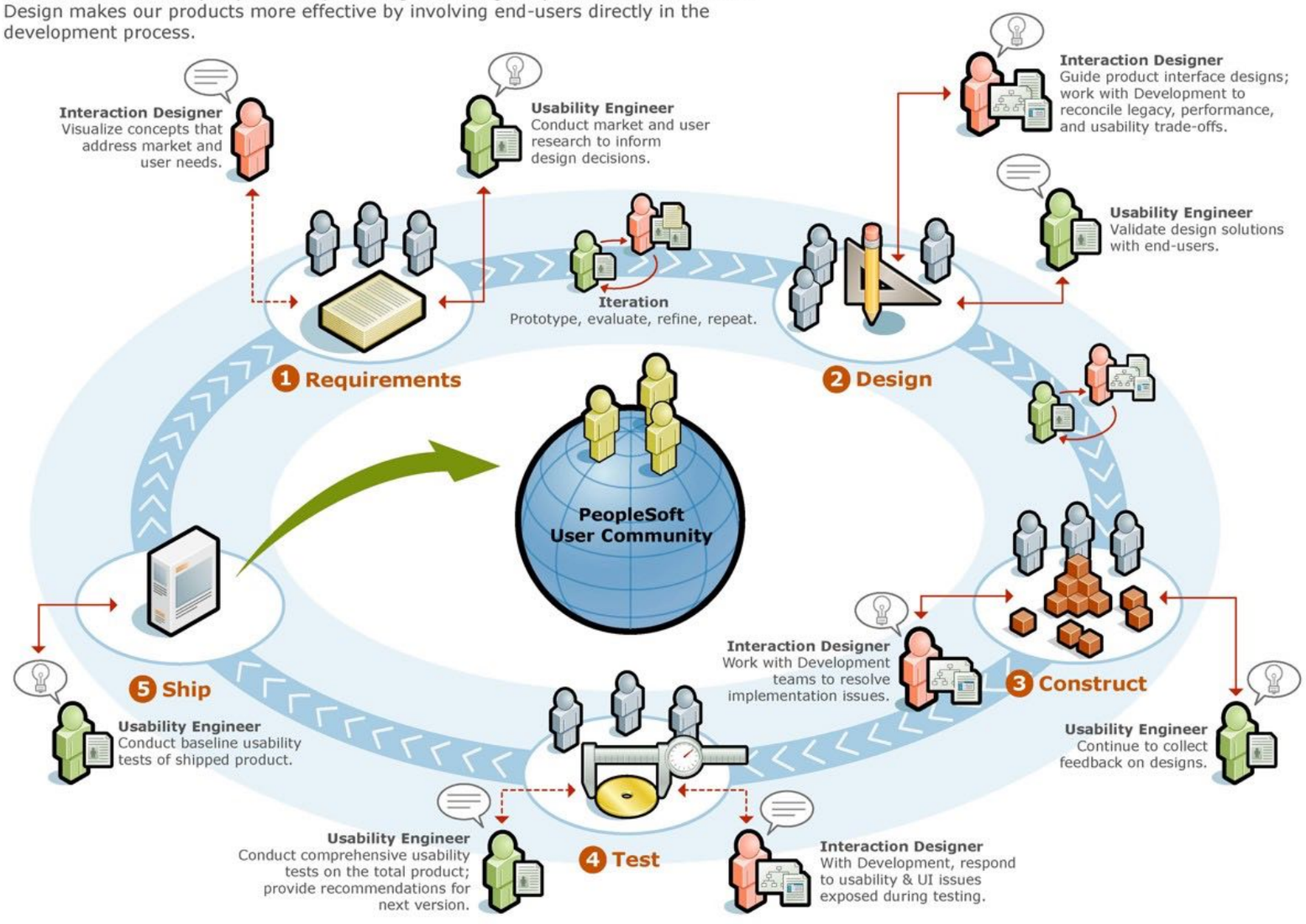
solution space	known	unknown
known	Waterfall	Does not exist
unknown	Agile	Lean

What does a holistic user experience design process look like?

User Experience Design Processes

SCM User-Centered Design Process

Business success today depends on producing well-designed products. User-Centered Design makes our products more effective by involving end-users directly in the development process.



1. Requirements
Understand user needs. Define new products and features. Outputs: early design mockups supporting BRDs; customer profiles, personas, and use cases.

2. Design
Translate user research and tested design concepts into user-friendly software. Outputs: user flows, more refined design mockups.

3. Construct
Prototyped concepts become coded reality. Outputs: well-designed applications.

4. Test
Making sure it does what it was designed to do. Outputs: data, reports, design and performance validations.

5. Ship
Product localization; PGS Consultants implement for customers; GSC begins support. UE responds to feedback, works with Dev to refine for future version releases.

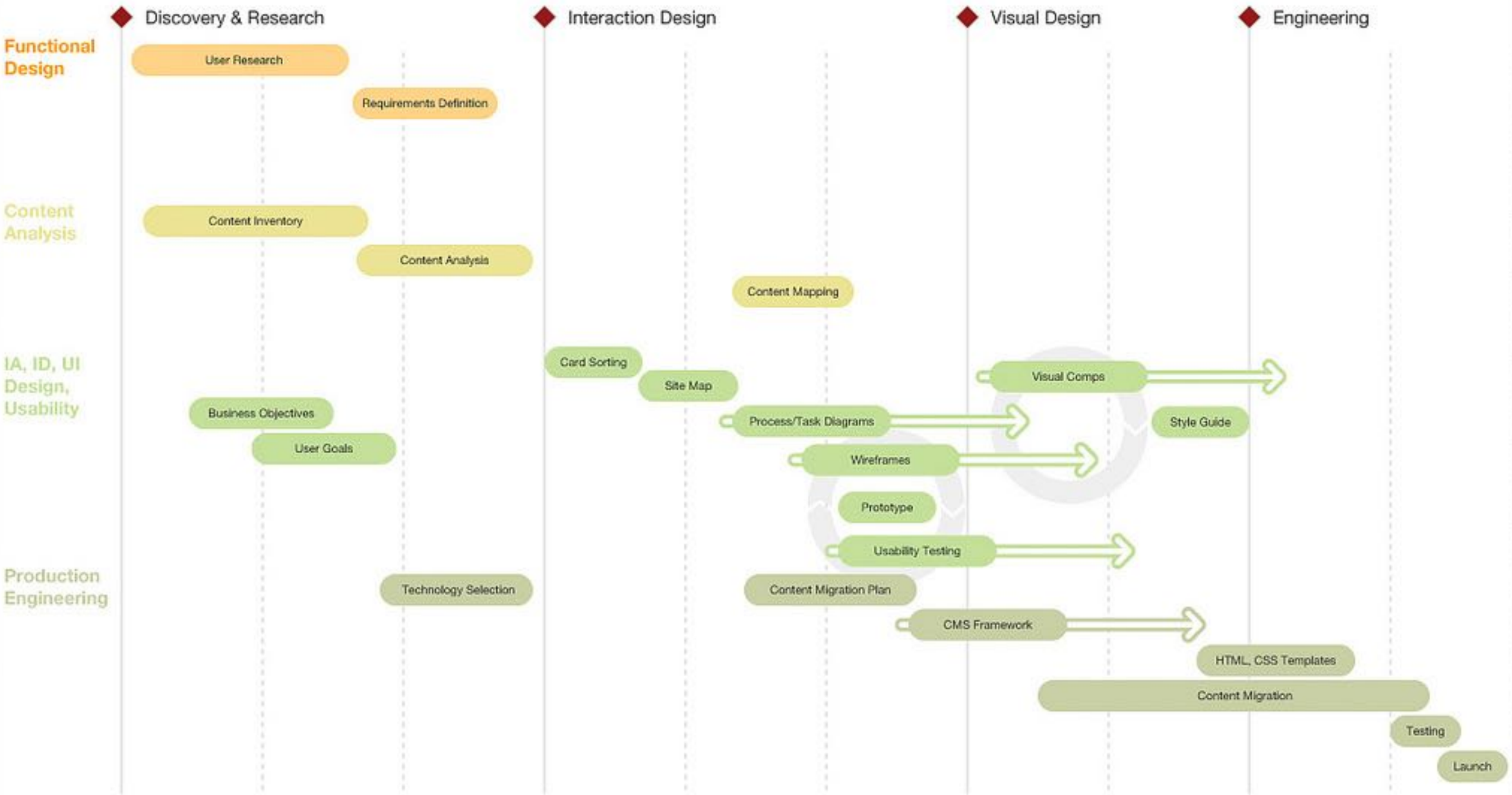
Usability Researcher
Interaction Designer
Development Team
PeopleSoft User

UE Deliverables
Usability test reports, communication maps, personas, use cases, customer profiles, prototypes, design concepts and mockups, user flows.

UE SCM Intranet Site
http://scmdev/ue

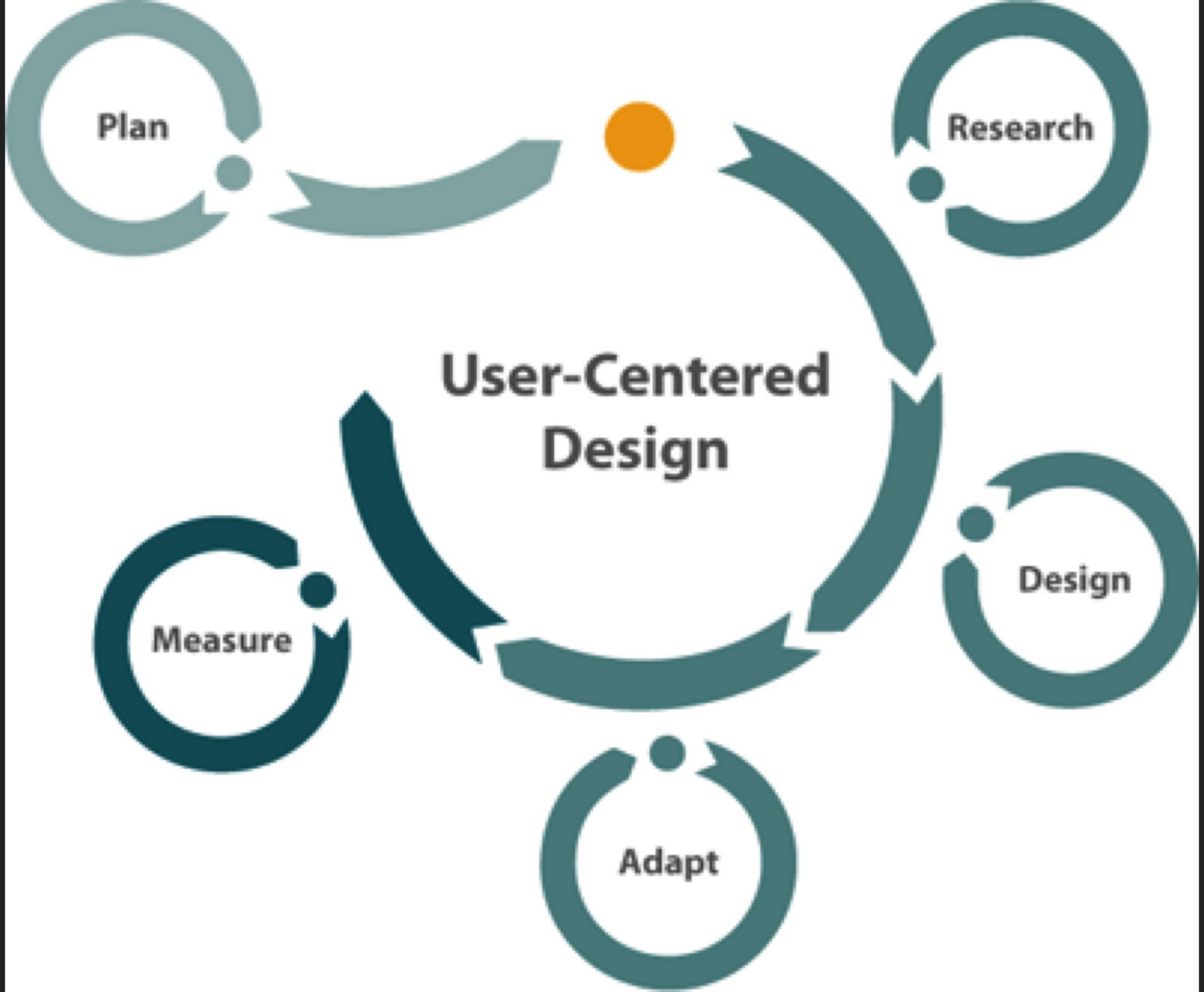
Source: PeopleSoft

Design Process Diagram

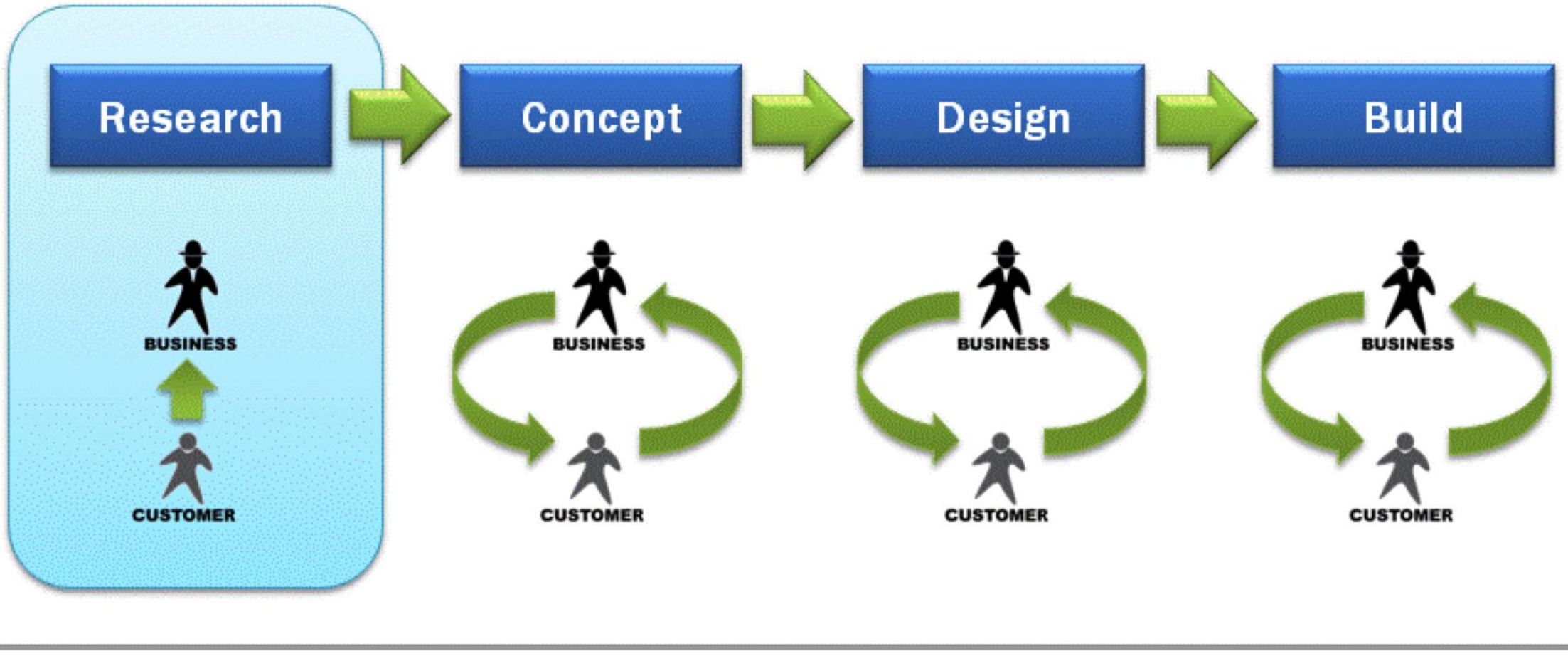


Todd R. Warfel
Principal User Experience Architect

These look really detailed and appealing, but are they always practical?


Plan
Research
User-Centered
Design
Measure
Design
Adapt

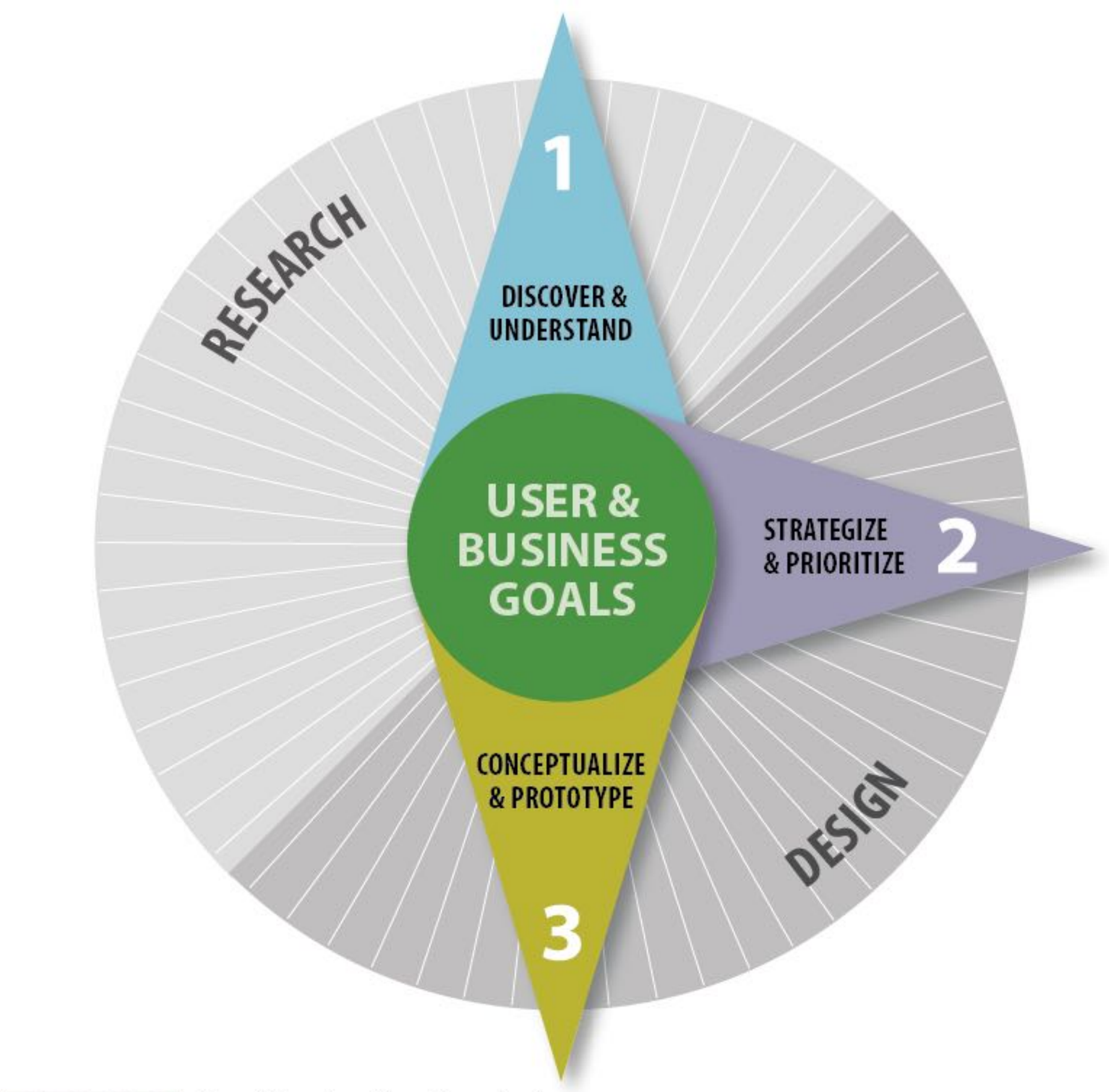
Typical UCD Process

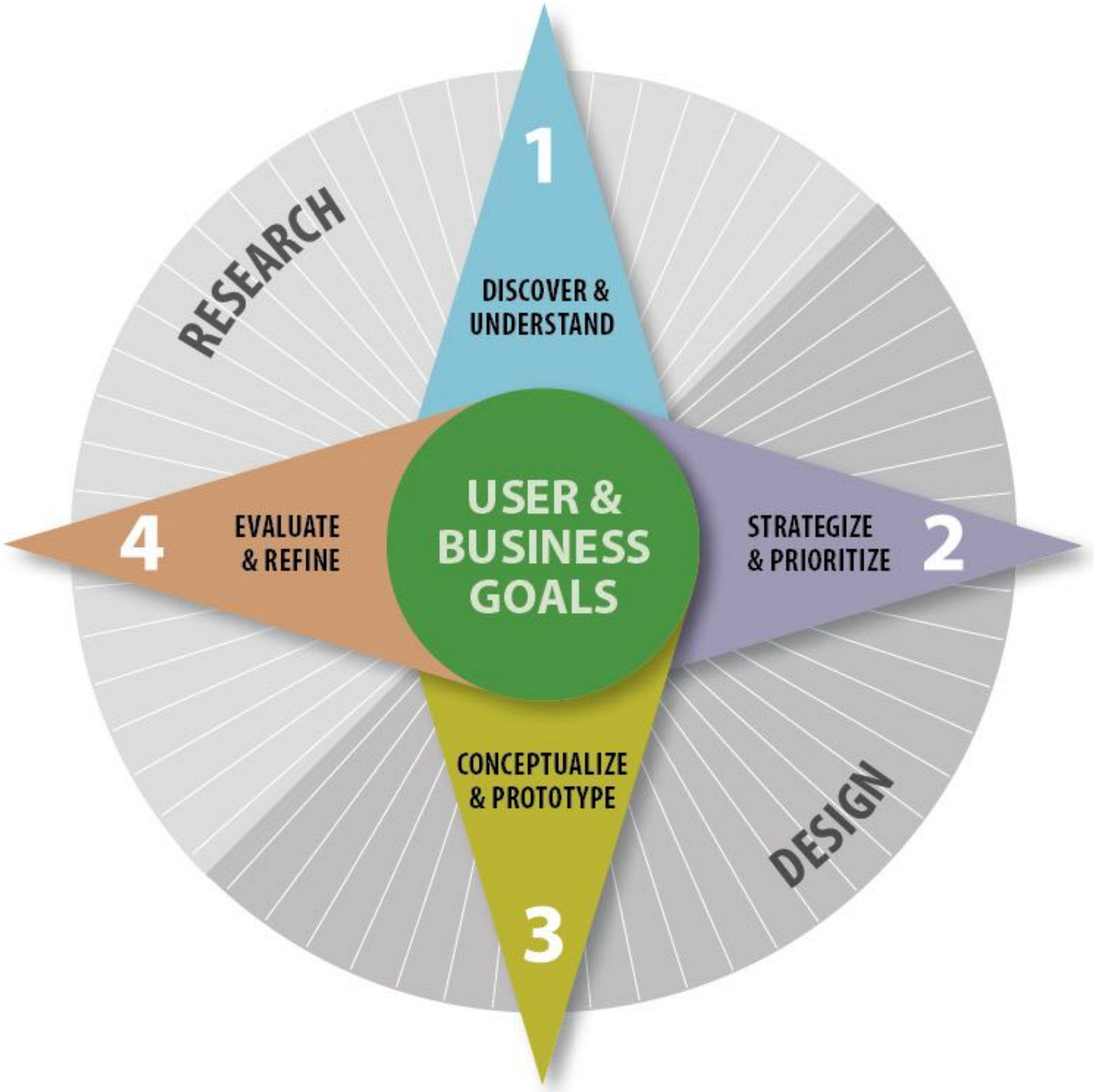


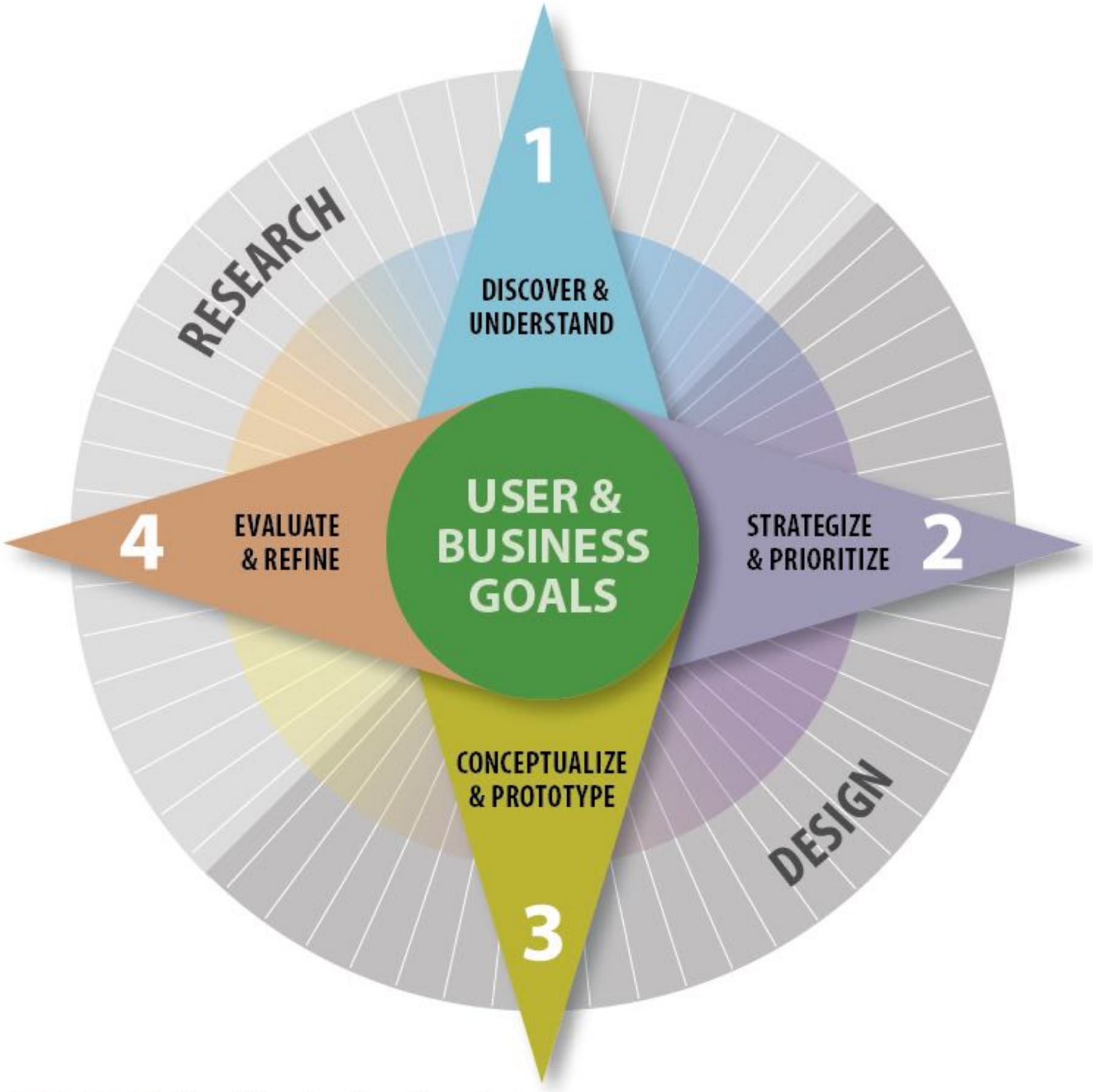
These look more approachable, but do they give enough specifics?

What does a holistic user experience design process look like?

Our UX Design Process (aka Toolkit)



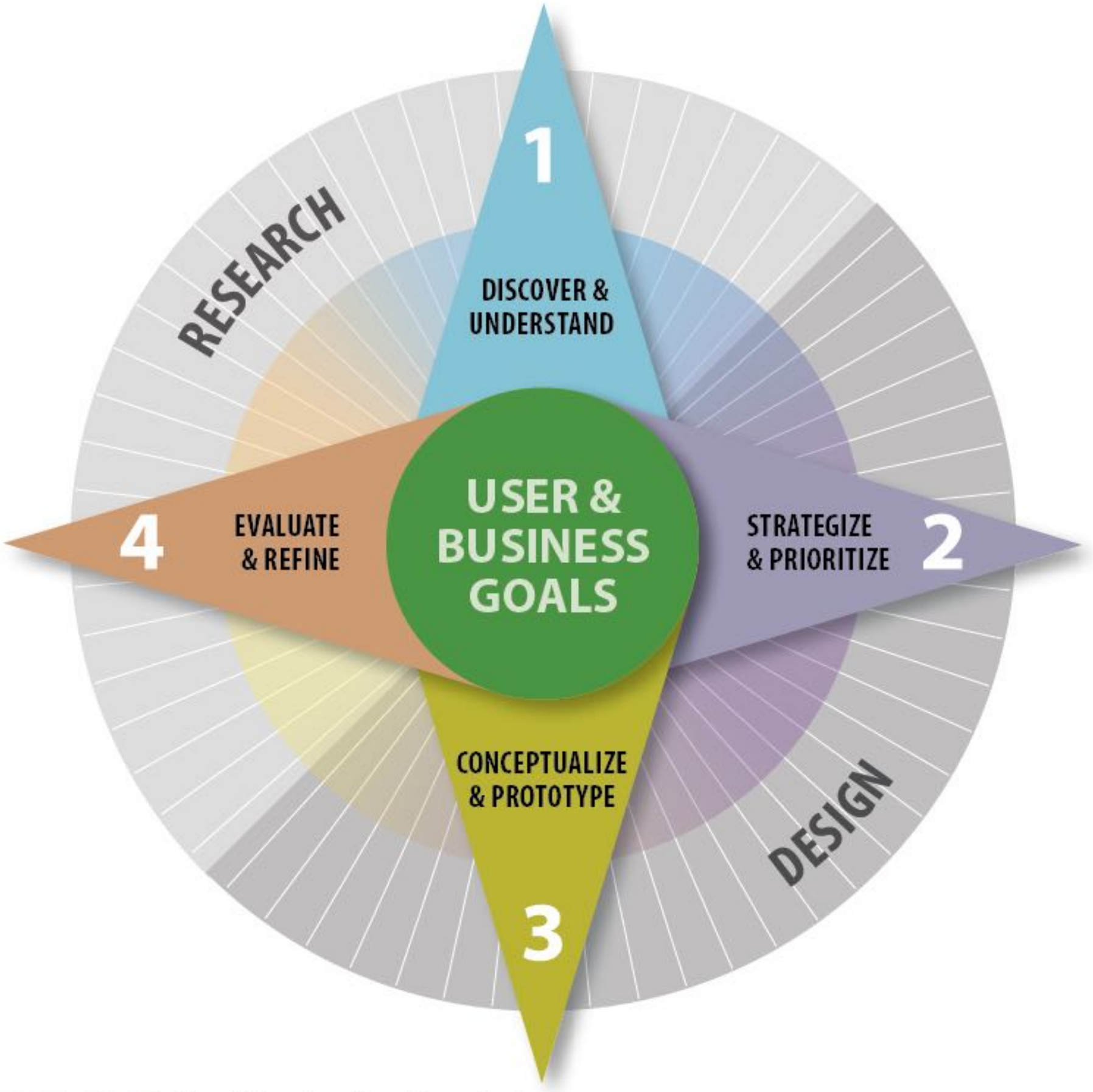




Our Process as a Toolkit

- Discover & understand
- Strategize & prioritize
- Conceptualize & prototype
- Evaluate & refine

Discover & Understand



Discover & Understand

- Affinity diagrams
- Contextual inquiries
- Empathy maps
- Interviews
- Job stories
- Jobs to be Done
- Personas
- Proto-personas
- Surveys
- Task analysis
- Five Ws and one H
- The five whys
- User interviews
- User stories

Susan Weinschenk, Ph.D.
Weinschenk Institute, LLC

5 Ways A Task Analysis Results In Great Design

https://www.youtube.com/watch?v=1IwT2VD5CJo

What is the difference between a user goal and a task?

User Goal vs. Task

Goals

- Things users want or need to achieve
- Tend to remain constant over time
- System independent
- Reaching a goal changes the state of the world

User Goal vs. Task

Tasks

- Must be performed to reach goals
- Tend to change over time, often due to technology
- System dependent
- May require problem solving

Questions to Help Discover User Goals and Tasks

- Why would they use the system (goals)?
- What do they need to do to reach their goals (tasks)?
- What are common problems encountered?
- When would they use the system?
- Where would they be using the system?

Activity: User Goals vs. Tasks

THINK-PAIR-SHARE

Examples of student goals and tasks for using the GoSFU course registration system?

Example Task Analysis Tools

- Task inventory (incl. frequency & importance)
- Task frequency & importance matrix
- Task sequences
- Flowcharts

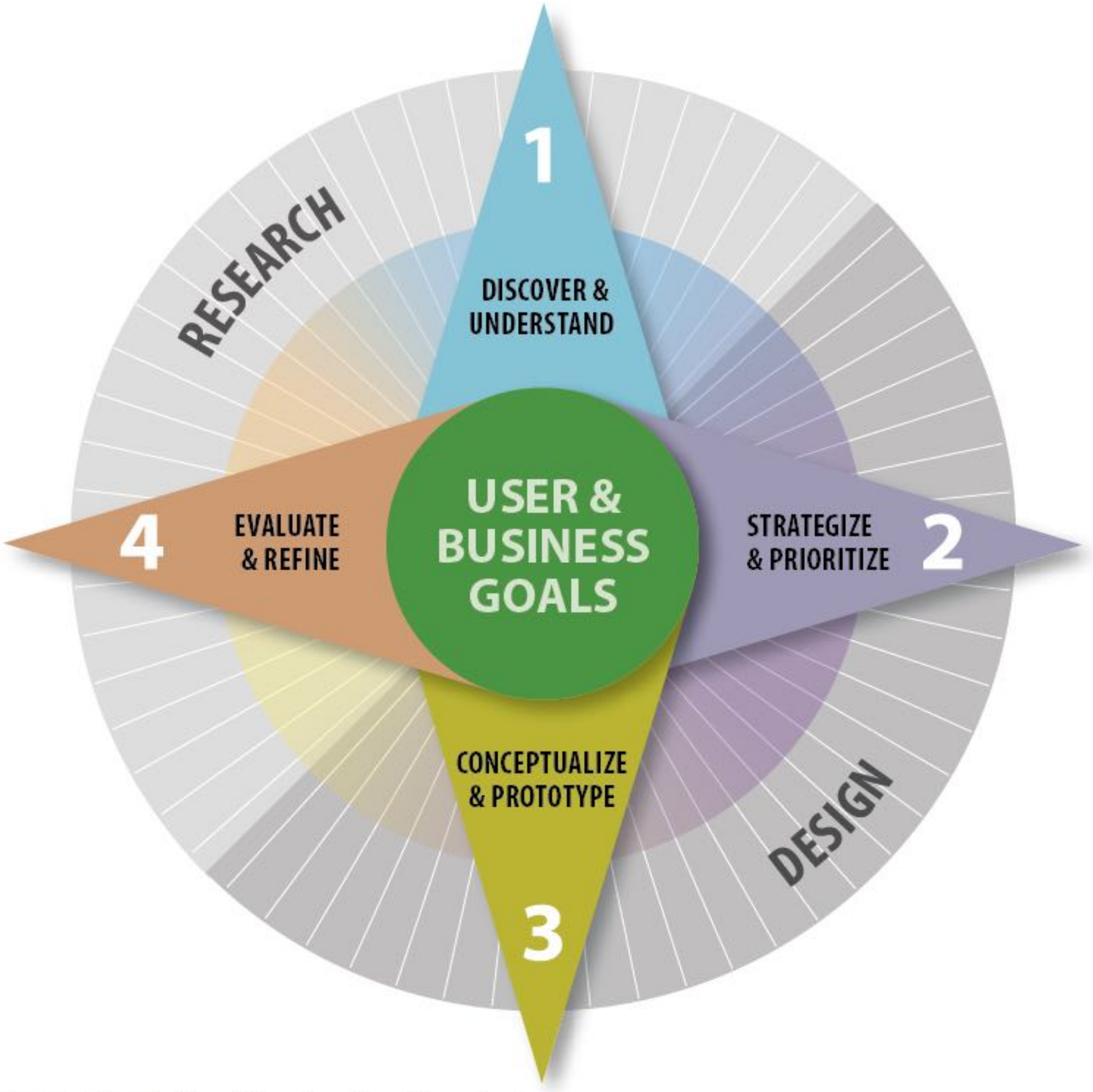
Task Importance & Frequency Matrix

Task List	User Group #1	User Group #2	User Group #3
Task #1	High/Frequent	High/ Infrequent	Low/Infrequent
Task #2	Never	Low/Infrequent	High/Frequent
Task #3	Low/Infrequent	Never	High/ Infrequent
Task #4	Low/Infrequent	Low/Infrequent	Low/Infrequent

Organizing an Interface by Tasks

- Important & frequent - higher visibility, fewer taps
- Important & infrequent - higher visibility, more taps
- Unimportant & frequent - lower visibility, fewer taps
- Unimportant & infrequent - lower visibility, more taps

Strategize & Prioritize



Strategize & Prioritize

- Content strategy
- Journey maps
- Kano model
- Problem statement
- Product design principles
- Product Reaction Cards
- Usability/UX goals
- Value Proposition
- Valuing UX

Usability Goals - How it Works

- Learnability (first-time users)
  - The product should be easy to learn
- Efficiency (experienced users)
  - The product should be efficient to use
- Memorability (casual users)
  - The product should be easy to remember
- Error-resistance (all users)
  - The product should minimize usage errors

Defining Usability Goals

- Common factors for consideration are
  - Frequency of use
  - Importance of task or need
  - Task structure (e.g. complexity, repetition)
  - Motivation/attitude
- Assign a priority to each goal (e.g. 1-3)
  - Could be specifically measured, but overall usability assessment (e.g. SUS) is usually sufficient

UX Goals - How it Feels

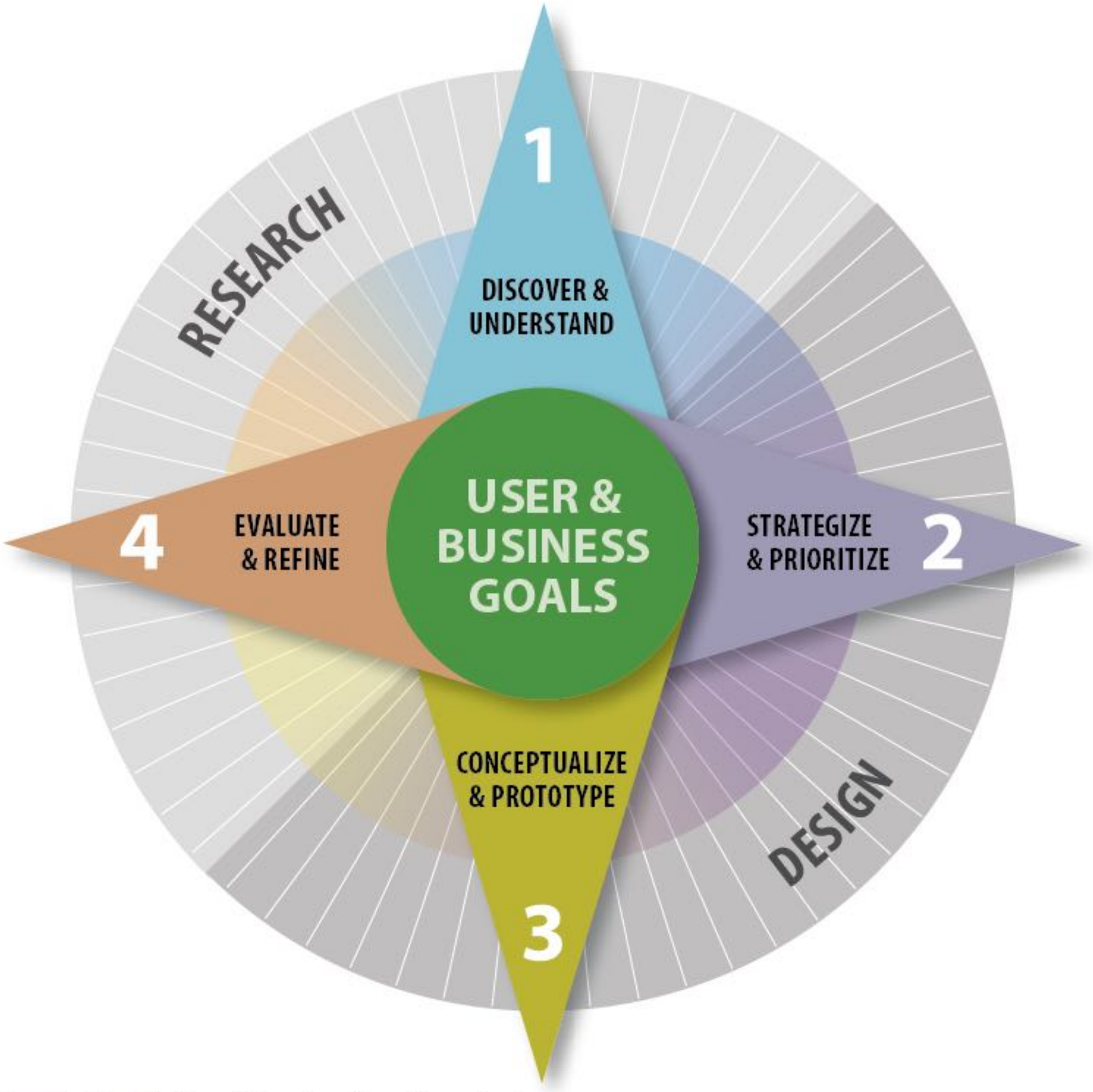
- Product Reaction Cards by Microsoft (2002)
- 118 words (60% positive, 40% negative)
- Sample words
  - Appealing
  - Complex
  - Familiar
  - Hard to use
  - Organized
  - Relevant
  - Too technical
  - Valuable

Defining UX Goals with Product Reaction Cards

- Select a set number of attributes (i.e. 4 to 8)
- For each attribute, assign a priority and note reason
- Consider visualizing results (e.g. word cloud)


Innovative
Complex
Motivating
Relevant
Flexible
Overwhelming
Accessible
Expected
Advanced
Non-standard
Effective
Stable
Useful
Satisfying
Easy to use
Clean
Responsive
Usable
Efficient
New
Understandable
Approachable
Simple
Fast
Consistent
Meaningful
Intuitive
Powerful
Straightforward

Conceptualize & Prototype



Conceptualize & Prototype

- Conceptual models
- Content inventory
- Content prototyping
- Design patterns
- Task flow diagrams
- Platform design principles
- Responsive Web Design
- Seven stages of action
- Storyboards
- Visual design principles
- Wireframes

Content Prototyping

An approach where real content is utilized early on during a project for the creation of all prototypes

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus. Nullam iaculis ex eu porttitor cursus. Suspendisse pretium dictum ex, at maximus ipsum posuere eget.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus. Nullam iaculis ex eu porttitor cursus. Suspendisse pretium dictum ex, at maximus ipsum posuere eget.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus. Nullam iaculis ex eu porttitor cursus. Suspendisse pretium dictum ex, at maximus ipsum posuere eget.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus. Nullam iaculis ex eu porttitor cursus. Suspendisse pretium dictum ex, at maximus ipsum posuere eget.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sit amet ultricies lacus.

animated or static images showing:
1) importing from sketch or photoshop
2) uploading images
3) using elements, layers, styling, etc. in editor

Everything you ever wanted in a ux design platform

Manage your entire ux design process within UXPin, even if you use Sketch or Photoshop. Always work with your layered design files — not flat files.

Your entire ux design process lives in UXPin

Wireframe	Mockup	Prototype	Usability Test	Present & Collaborate	Manage Projects & Design Process

Wireframe any user interface quickly

Choose from hundreds of stock UI design elements & patterns for web, iPhone, Android, Twitter and more. Draft, iterate, and finish your wireframes faster than ever before.

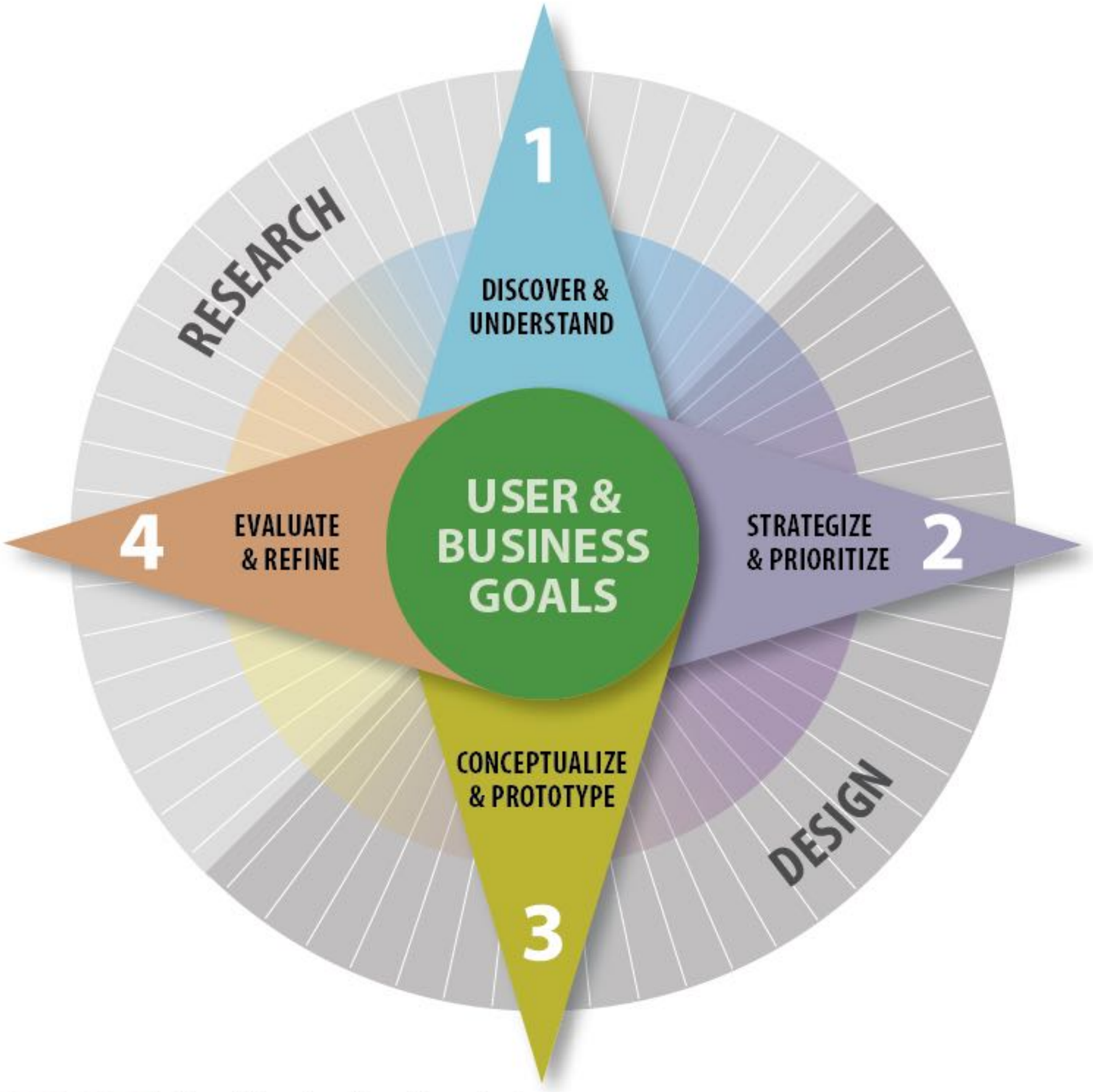
Love your current wireframe tools? Import flat wireframe files from any popular wireframe tool, or fully-layered wireframes directly from Sketch and Photoshop.

Turn your wireframes into high-fidelity mockups and fully-interactive prototypes without leaving UXPin. No more re-creating interfaces multiple times in design process.

Learn more

animated or static images showing:
1) importing from sketch or photoshop
2) uploading images
3) using elements, layers, styling, etc. in editor

Evaluate & Refine



Evaluate & Refine

- 5-Second test
- Cognitive walkthrough
- Heuristic review
- Usability testing (informal and formal)

Measuring Usability Goals

- Learnability (first-time users)
  - Can a new user complete a task?
- Efficiency (experienced users)
  - How fast can a user complete a task?
- Memorability (casual users)
  - How easy can a repeat user recall how to complete a task?
- Error-resistance (all users)
  - How often does the software cause users to make an error?

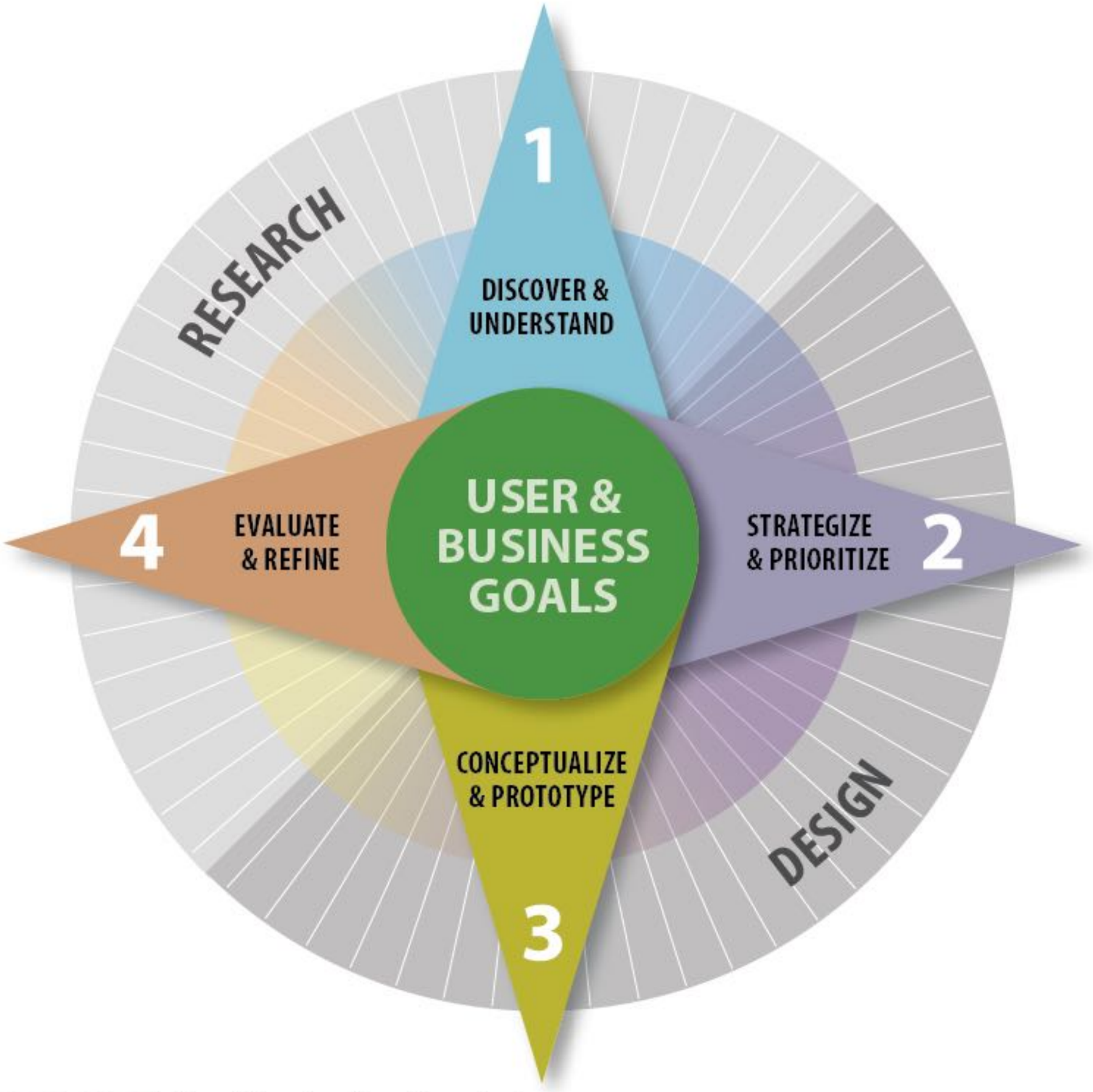
Measuring UX Goals with Product Reaction Cards

- Measuring
  - Reduce attributes to ≈ 60 to 80
  - Ask participants to select most relevant 10
  - Visualize the results (e.g. word cloud)

Convenient
Ordinary
Busy
Familiar
Helpful
Trustworthy
Unattractive
Valuable
Understandable
Dull
Disorganized
Meaningful
Attractive
Annoying
Distracting
Relevant
Complex
Effective
Innovative
Comprehensive
Useful
Easy to use
Time-consuming
Time saving
Organized

Activity: Product Reaction Cards

- Pick one word to describe how you feel when using the GoSFU course registration system



Summary

- Software Development Processes
- User Experience Design Processes
- Our Design Process (aka Toolkit)

References and Suggested Books

- 100 Things Every Designer Needs to Know About People by Susan Weinschenk
- About Face 3: The Essentials of Interaction Design by Alan Cooper, Robert Reimann and David Cronin
- Lean UX by Jeff Gothelf
- The Design of Everyday Things by Donald A. Norman
- Rocket Surgery Made Easy by Steve Krug
- UX Team of One by Leah Buley

Image Credits

https://en.wikipedia.org/wiki/Waterfall_model
https://www.360logica.com/blog/general-trends-in-agile-approaches/general-trends-in-agile-approaches/
https://jpattonassociates.com/emerging_best_agile_ux_practice/
http://blog.caplin.com/2015/09/30/incremental-ux/
https://medium.com/swlh/startup-science-applied-5d6ea13f6b5c
https://www.creativebloq.com/netmag/introduction-lean-3126388
http://www.insightfulempathy.com/research-methods/design-process-semantics/
http://boxesandarrows.com/bringing-user-centered-design-to-the-agile-environment/
https://www.researchgate.net/publication/220886299_Visualizing_Activities_for_Self-reflection_and_Awareness
https://thenextweb.com/dd/2015/04/09/why-designers-should-never-use-fake-text/
https://blinkux.com/blog/getting-a-reaction-out-of-participants-with-a-modified-card-sorting-technique/