

# Agile and Innovation

Being responsive without losing your way

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# Getting real about innovation

2 smart guys in a garage

**NOT**

But what about Apple and Microsoft?

Okay, sometimes in the garage

But... look at the timelines

What does it really take to innovate?

Some examples

# iPhone

Not a new thing



The *next right* thing for Apple

# Technology in place

Turn of the century:

- \* Wireless becoming available
- \* 2001: 3G network in Japan – slower in US
- \* Smartphone sales significant, but UI lagging
  - Downloading ringtones was the big deal
- \* Touchscreens on GPS systems
  - Not yet on phones

# Consumer readiness

Early 2000's:

- \* Everyone has a phone
- \* Managers and salespeople have Blackberries  
(Just don't call it a Crackberry)
- \* People getting comfortable using the internet
  - \* but not yet practical on phone
- \* People starting to make money with web services

# Business model

Apple already knows

- \* How to make computers and screens
- \* How to make consumer electronics
  - \* iPod – just a thumb drive with a UI
  - \* Newton – failed attempt at a PDA
- \* How to run retail store
  - \* Napster's demise opened up the business model
- \* How to sell content online with the iTunes Store

Plus

- \* Deal with AT&T lets apple retain control of design
- \* App Store extends iTunes model

# Company mission and skill

## The timeline:

- \* 1997 - Steve jobs returns to apple
- \* 1998 - iMac released; Newton released and fails
- \* **1999** - Apple registers iphone.org
- \* 2000 - Mac Cube
- \* 2001 - iPod & OSX
- \* **2002** - Apple files for iPhone trademark
- \* 2003 - 23 million iTunes downloads
- \* 2005 - Video iPod
- \* **2007** - iPhone launched



# iPhone Innovation

- \* Built on past technical experience
- \* Sold to a prepared market
- \* Leveraging a proven business model
- \* Delivered over a decade through...
  - \* Many iterations
    - \* **Each taking a manageable step**
    - \* **Each delivering business value**

... By one company with amazing focus

# Spreadsheets

Iteration over decades and companies:

- \* 1979, VisiCalc: Doing spreadsheet calculations on paper is stupid. Do them online.
  - \* But limited to the original Apple II vision
- \* 1983, Lotus 1-2-3: Spreadsheets are about presentation not just calculation
  - \* But limited to DOS platform
- \* 199?, MS Excel: Leverages Win 3
  - \* Larger ecosystem FTW

→ Still working towards DB's original vision

# Innovation plays off vision and iteration

Vision gives you a direction

Iteration gets you there in achievable,  
useful steps

# Having a vision

When you're up to your ass in alligators...



...it's hard to remember you came to drain the swamp

- \* Like a flag on the hill
- \* Keep in sight when you're up to your ass in alligators
  
- \* BUT Agile doesn't help drain the swamp
- \* In fact Agile *is* the swamp—by design

# Agile mitigates against strategic thinking

- \* Stories break design up—intentionally
- \* A 2-week cycle encourages short-term thinking
  - Feed the beast
  - Anything you can't do in 2 weeks (really 1.5, or 1) isn't worth doing
- \* Lean UX increases connection with development at cost of advance work



Back up and rethink

What's the job of UX anyway?

# The job of UX

Deliver the right experience for users

The system does what I want, in a way I understand, so I can achieve what I am trying to do

**NOPE**

# The job of UX

## Deliver the right experience for users

The system does what I want, in a way I understand, so I can achieve what I am trying to do

**The system does what I didn't know I wanted, in a way I can adopt without struggle, to achieve a goal I care about**

(but I didn't know you could help with it)



# Innovation

Iterative design is great for improving  
how I do what I'm doing to make the  
*task* better

Innovation is about inventing something  
different for me to do to make my *life*  
better

# ... which requires field research

- \* You don't know what users need until you know them
- \* You don't know them until you've seen their life and walked in their shoes
  - \* I.e. field research/contextual inquiry

# ... embedded in user-centered design

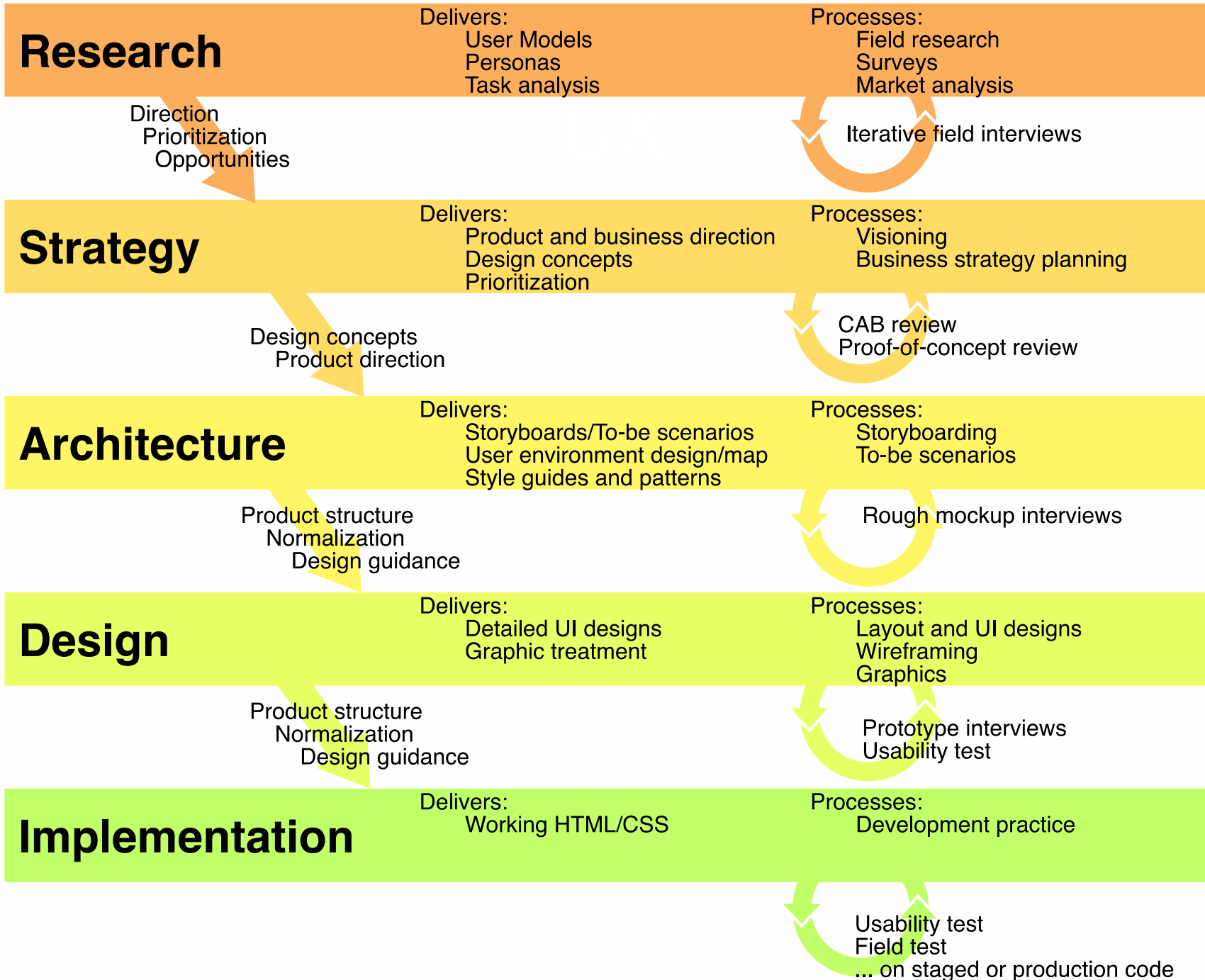
- \* Drive the understanding of users all the way through to product details

# ... with an iterative process

- \* Because you aren't going to get it right the first time
- \* And you can't discover emergent requirements unless you see the new design *in situ*

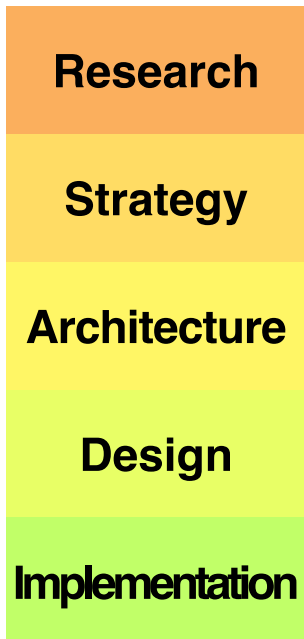
# The job of UX

- \* Do the user research
- \* To drive the strategic vision
- \* Design a coherent system
- \* Craft good UIs
- \* Support the implementation

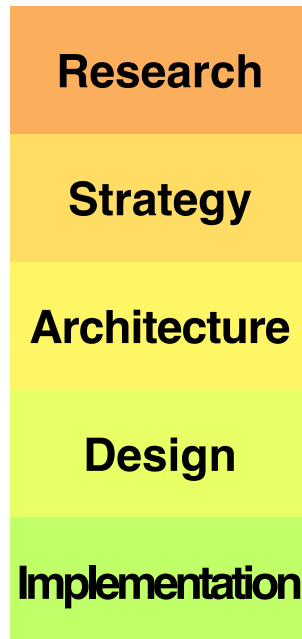


# In one iteration

Sprint 1



Sprint 2



Sprint 3



Allocate story points to all aspects of UX

every sprint

*every single sprint*

# User research used to produce this

## Planning the trip

The preparation for both weekend getaways and longer vacations is woven throughout the weeks and months before departure. This preparation includes research and conversations with fellow travelers during dedicated travel-planning time. This is usually done at home on a laptop or tablet to take advantage of the bigger screen size and because many sites still aren't optimized for mobile.

**How are you planning this vacation?**  
 My boyfriend and I start planning our trip together on the couch looking at Google Maps. We use a shared Google doc to track everything. We watch research and make reservations while at work or when we have a few minutes. I found a social deal for a rental car on an app my boyfriend what he works on after he gets home.

## On the way

The primary goal of transit is to arrive at the destination and modern travelers rely heavily on navigation apps and GPS devices when driving. They also want to minimize hassle and make the best possible use of their transit time whether driving, taking bus or flying.

**How do you typically get around when you are on the go?**  
 The first thing my husband and I do after leaving and getting our rental car in North Carolina is use Yelp on my iPhone to find a nearby cafe with free Wi-Fi. We don't have a hotel for tonight, so we want a place that we can sit down and find a good deal.

## During trip

After settling in, the cycle of the trip consists of preparing for upcoming activities by looking up relevant information such as directions, weather or nearby restaurants and coordinating with fellow travelers; visiting an attraction; perhaps using a smart phone to plan additional activities or find some place to eat while out.

**How do you manage different trip planning?**  
 Before leaving Cape Carteret I use my iPhone to search for a place for us to have lunch. It's easier to figure out where we're going before we leave and get back on the way.

## Getting ready

Before I leave on my trip I check the weather and make sure I know what route I'm going to take. If I'm flying, I print out my boarding pass, which usually requires that I use the printer at school or work.

**What are you currently not doing to make your trip better?**  
 I wish I had more information about the local culture and history of the destination.

## Planning pit stop

Before driving to their destination city, users' smartphones to find a coffee shop with Wi-Fi so they can use their laptops to find and book a hotel for the night.

## ...at home

My main on-depth travel planning happens at home. I can take my time and research destinations, accommodation, and activities. I also check what I can do with frequent flyer miles and book flights. I consult with my spouse or significant other if we are going to be traveling together. If I need to make phone calls related to family members or about travel reservations, I do it from home.

**What are some of the things you do to make your trip better?**  
 I use travel planning apps like Expedia and Kayak to compare prices and book flights.

## ...while waiting

I use the time while I am waiting for my car at the bus station to do a little more travel research on my phone.

**While socializing**  
 When I go out to dinner with friends, we discuss traveling together and share travel tips.

## ...while taking a break

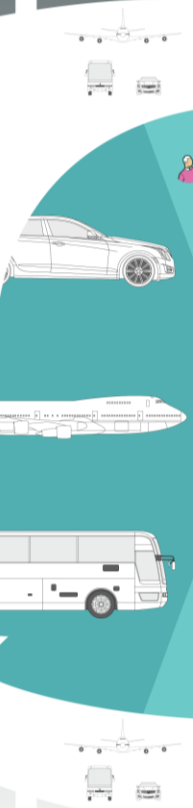
I enjoy taking research on when I stop at Starbucks for a break from my travels. I take out my iPad and look up some more information for our trip to the South Coast.

**...while commuting**  
 When I'm on the shuttle to work, I do a bit more travel research on a part of my morning check-in on my phone.

## ...at the office

I use little pieces of time at the office to continue researching destinations, accommodations and activities online as well as reviewing my daily travel plan needs. I keep in touch with my co-traveler during the day by sending interesting travel possibilities and checking on my flight to decide if I should rent a car using a travel travel app. If I do book anything, I make a note of it in our shared Google doc for the trip.

**What are some of the things you do to make your trip better?**  
 I use travel planning apps like Expedia and Kayak to compare prices and book flights.



## Driving and navigating

A lot of time on roads. I'm thinking about driving and navigating. I use my phone to find a grocery store near the airport to buy snacks, and follow along with the directions from my navigation app, even though I've done this drive before. I use Google Maps, but sometimes it sends me to a gas station that was closed.

**How do you typically get around when you are on the go?**  
 Sometimes I'll pull over to take a picture of a landmark or scenic view.

## Entertaining myself

I keep myself entertained while on route. I might listen to the audiobook game on a long drive using a sports radio app or listen to music on Pandora while keeping up with Facebook and Instagram.

## Using transit time

On the way to my travel destination, I continue planning and coordinating. I check on ticket prices to do things with my friends and on my phone to check in for my flight on the way to the airport. I text my friends to coordinate a hike ride when we all arrive or to let them know my ETA at the bus stop. If I have work to do, I may even pull out my laptop and try to write a paper on the bus.

## Returning home

## Getting ready for activities

Before heading out for an activity I check the weather and look up gas stations along my route. If I haven't already, I'll book a hotel room for the next night. I also coordinate with other travelers via text about where to meet.

**Setting up the condo**  
 Find grocery store nearby and stock the condo with food for the week.

## Hanging out

I enjoy having some downtime at the hotel or condo. My friends and I watch YouTube videos and talk and laugh about them. I also surf the web and Google random interests. I like to watch the local news to get a feel for the place. Even though it's a vacation, I do some productive things like watch video tutorials with my son to help him with his math studies.

**Getting ready for activities**  
 I look up information on local community activities and find local events listings to figure out what to do on the evening or the next day. I use Yelp and Fourquare to look up places to eat.

## Seeing the sights

I continue to look up information while I'm out and about on my trip. I use my iPhone to find a place to eat lunch. When my husband and I are in a new city, finding a place recommended on Yelp or Fourquare for apartment is part of the destination. I keep my friends involved in my vacation taking trip while I'm on the trails by posting pictures to Facebook.

**Seeing the sights**  
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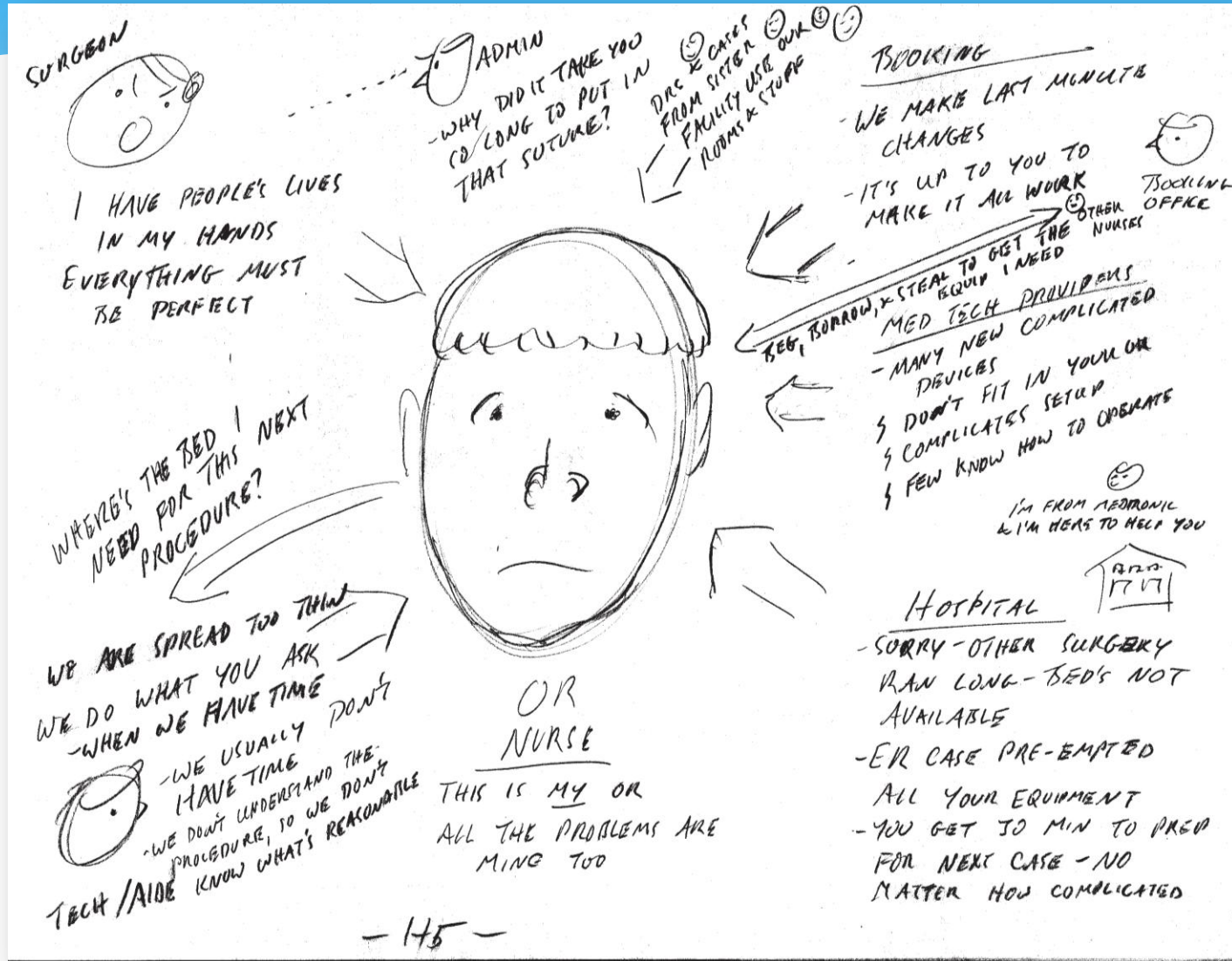
## Dining out

Dining out is part of the trip of travel. I particularly like to find places to eat that have been featured on the Food Network with the "FoodNetwork" app. I check in on Fourquare when I travel so I have a record of the restaurants I've visited. I keep on planning my trip at the restaurant by double-checking the menu items on my phone or device.

**Dining out**  
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# Now it produces this



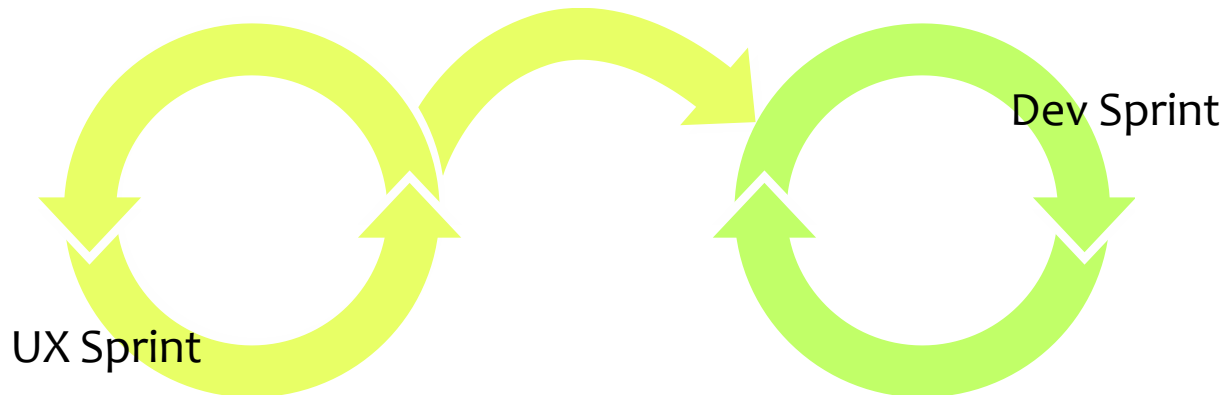
# Leverage low-fi

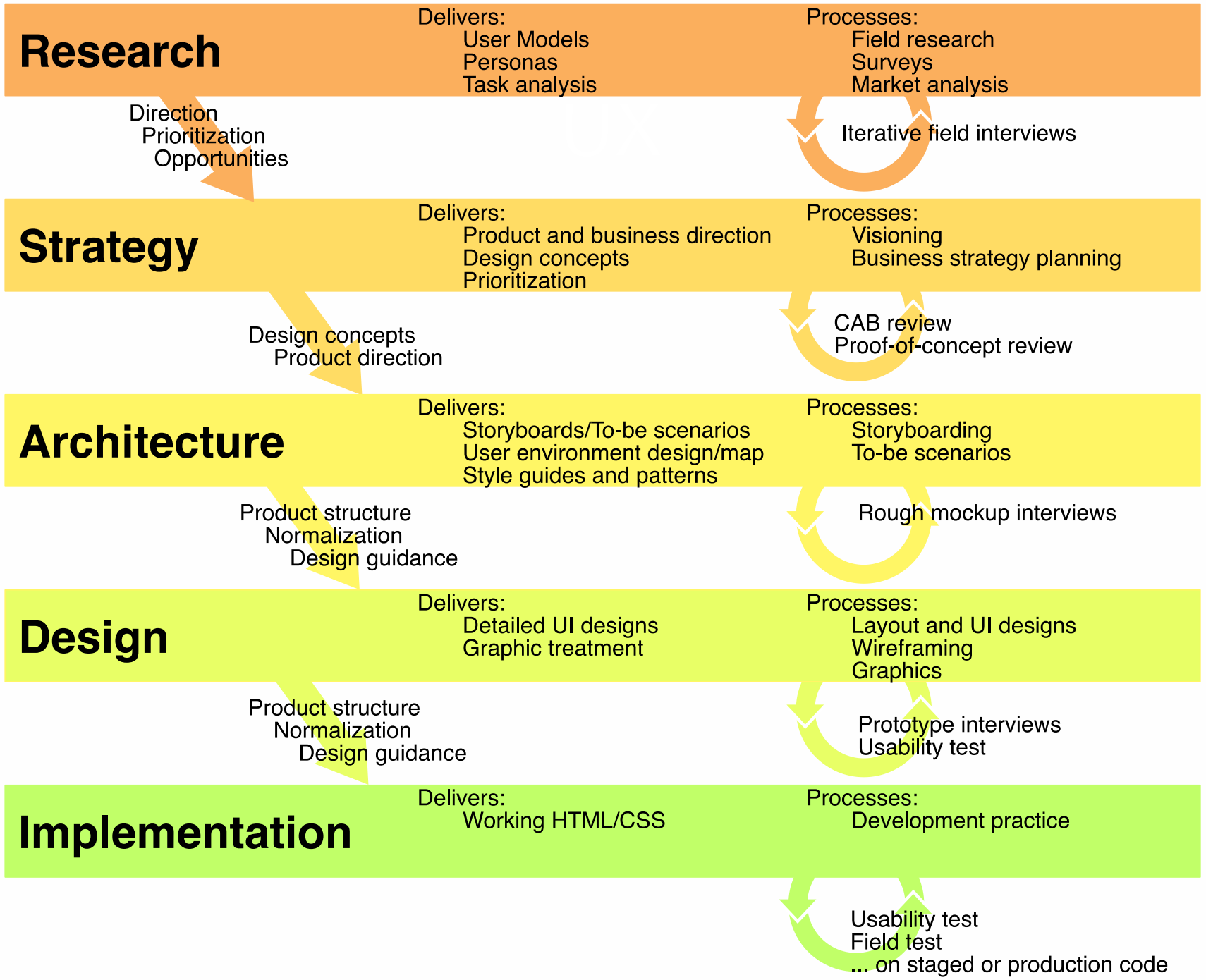
- \* Contextual Inquiry – paper and pen
  - \* No videotape no audiotape no script no no no
- \* Sketches
- \* Storyboards
- \* Wireframes
- \* Paper prototypes – postits
  - \* No usability lab no predefined tasks no 1-way mirror no

*It's better anyway*

# But it won't all fit in a sprint

- \* Separate UX sprints dovetail with dev sprints
- \* UX Scrum backlog items deliver business value
- \* UX backlog items include stories for every type of UX work
  - \* Including implementation—dups dev story/task





# Life of a feature

- \* Need identified in user research
- \* Integrated with strategy
  - \* May iterate to prove business
- \* Built into architecture
  - \* May iterate with PP's to get structure right
- \* Designed
  - \* Wireframes, more detailed paper prototypes
- \* Implemented
  - \* May test and iterate final look

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# Avatar

- \* >\$2billion income
- \* \$400 mill invested by Cameron
- \* Transformation of experience: motion capture in real time—complete in-the-moment control over scene
- \* From thought to reality
- \* Ground of existing tech – autodesk – a step beyond CGI
- \* 10K sq feet server farm, 4K servers
- \* Who Framed Roger Rabbit already integrated animation & real
- \* Jurassic Park put realistic dinosaurs in place with humans
- \* Toy Story – cartoon for adults
- \* Gollum photorealistic motion capture
- \* → Note all these made money
- \* Polar Express—all actors motion capture
- \* Beowulf—first time same film for 2 & 3D



# Distribution

- \* 2001 Disney prootype
- \* 2002 120 digital screens, Star Wars episode 2 in 3D; specs and standards
- \* 2006 stereoscopic movies
- \* 2206 Chicken little
- \* 2008 55 Digital Theaters, 536 screrens (still small)
- \* 2009 Govt funds screeens (UK)
- \* 2010 DCIP provides financing

# IMAX

- \* 1986 IMAX introduced at worlds fair
- \* 1990's – IMAX in museums
- \* 2004 – Harry Potter & Polar Express in IMAX 3D – proves the business case
- \* 2007 – 179 IMAX theaters
- \* 2010 - >7000 IMAX theaters
- \* → so not a huge risk at this point

# Top grossing movies

- \* Titanic – love, action, cool special effects
- \* LOTR – Fantasy, magic
- \* Pirates of the Carribean – Integrates CGI
- \* The Dark Knight – comics
- \* Harry Potter Sorcerer's stone
- \* Star Wars
- \* Shreck
- \* → so taste is animation, special effects, animation for adults, love and champions – Avatar is in sweet spot

# Summary

- \* Everything in place for avatar
- \* Boring next step

# James Cameron

- \* Aliens
- \* Abyss (3D water effects)
- \* Terminator – realistic special effects on CGI character
- \* 1996 writes script for Avatar
- \* Titanic
- \* 2009 Makes deal for avatar, starts working on camera
- \* 4 years to make film