Hi, I’m Chase
Research Interests

• User research
• Biofeedback in UX, VR, Simulators
  • EDA, Blink Rate, Pupillometry, HR, posture
• UX research within video games
• UX research within automotive applications
• Many others (I get excited about innovative research)
Major Influences

• Family
• Board games (Takenoko, Risk L, Formula D, Yahtzee, BaHH)
• Video games (Rocket League, Forza, Lifeline, Halo, Dead Cells)
• TV/Movies (GoT, BB, BSG, Fate/Stay Night, Totoro, Disney)
• Reading (Kingkiller Chronicles, Snow Crash, Dresden Files)
What is UX? It sounds sketchy...(haha)

Who’s heard of UX?

Who’s heard of usability?

Who’s watched Grandma’s Boy?
RVC
(research virtuous cycle)
ENABLE INFORMED DECISIONS

Knowledge
Research
Activate
Process/Plan
Integrate
Measure
Action
Impact
UX Research
What is UX?

What is User Experience (UX) and where does it fit?

Is **Usability** the same as **UX**?

“Does it work?” vs “How did you feel?”

Both have value, ideally both can be witnessed and used appropriately for the situation.

Isn’t this all Quality Assurance (QA)?
"User experience" encompasses all aspects of the end-user's interaction with the company, its services, and its products.

- NNGroup
Usability

Usability is a measure of the effectiveness, efficiency and satisfaction with which specified users can achieve specified goals in a particular environment.

- ISO 9241
Methods
UX Methods

Large combination of qualitative and quantitative measures available.
- Qual gets at the majority of issues and gives direction.
- Quant bolsters results with “proof” and validates qual findings.

Quantitative methods:
- Null Hypothesis Significance Testing
- UX metrics: Error rate, Time on task, Efficiency, Abandonment

Qualitative methods:
- Behavioral coding
- Think-aloud protocol
- Interview

Larger samples
Smaller samples
UX Methods

“Stories are just data with soul.” Brown, 2010.
UX Methods

Lower cost
- HITS
- Heuristic review
- Cognitive walkthrough
- Online usability / FAST / Signal

Higher cost
- Dedicated Lab study
- Large surveys

Smaller samples

Larger samples
Heuristic review / cognitive walkthrough

Researcher (or anyone) walks through a specific experience (typically design comps) and points out known usability issues using existing principles or best practices.

Cognitive walkthrough is typically multiple people performing the review in a constrained session.
TENETS
General attributes of good interface design

TRAPS
Problems that degrade good interface design
**UNDERSTANDABLE**
I know what I can do

**COMFORTABLE**
Interaction is effortless

**RESPONSIVE**
I don’t wait

**EFFICIENT**
I do less

**FORGIVING**
I can undo actions

**DISCREET**
I don’t overshare

**PROTECTIVE**
I don’t lose my data

**HABITUATING**
I quickly achieve mastery

**BEAUTIFUL**
I find it attractive
UNDERSTANDABLE
I know what I can do

COMFORTABLE
Interaction is effortless

RESPONSIVE
I don’t wait

EFFICIENT
I do less
In the lab (ISU HCI UX Lab)
Usability lab
Playtest lab
Usability

“Do you understand how to use it?”

Playtest

“How do you feel about it?”
UX Methods

- Lower cost
  - Google Scholar
  - Heuristic review
  - Cognitive walkthrough
  - Online usability / FAST / Signal

- Higher cost
  - Dedicated Lab study
  - Large surveys

Smaller samples

Larger samples
Questions?
## UX Big Picture

### UX Strategy
- Scope
- UCD Process
- Develop Model
- Organization Process/Structure
- Organization Maturity
- User Philosophy

### UX Methods
- Usability testing
- Eye tracking
- Biofeedback
- Interviews
- Focus Groups
- Survey
- More

### UX Tools
- UserZoom/Loop11
- Morae/Noldus
- VT2 + iMotions
- Qualtrics
- JustInMind/Axure
- Recorders
- More
Why would you waste your time?

“We’ve made X this way for years. We sell more than anyone else, why would we invest in that now?”

-Paraphrasing from:
  1970’s US Auto Industry (see: Honda, Toyota, Nissan)
  1990’s Microsoft, SEGA (see: Apple)
  2000’s Healthcare/Accounting/Business software (see Epic)
Is UX worth it? The ROI (return on investment)

Current numbers put the ROI on UX to be anywhere between 10-100x and this estimate is corroborated by the many in industry today. (Shapiro 2014)

Big picture, it is estimated that 50% of engineering time is spent doing avoidable rework & fixing problems after development is over can be up to 100x more expensive. (Alvarez 2015)

Plus, there are some nice resources to help figure out your ROI from places like usability.gov, the NNGroup, or Sauro.

Also, there are non-monetary benefits; customers are more willing to purchase more products, more likely to recommend, less likely to jump ship, etc.
So how to actually do UX?

Build your case
   What are you trying to understand/solve/address?
   Why should people care?

Start to state your claim
   Assert something that may be true or false
   Thesis/hypothesize based on evidence
Warrant
Principle that allows me to connect reason and claim is…

Claim

Because of

Reason

Based on

Evidence

Acknowledgement & Response

Booth, et al
Developing The Research Question

Topic: I am studying ______

Question: because I want to find out what/why/how ______

Conceptual Significance: in order to help my reader/peers/boss understand ______

Potential Practical Significance: so that my reader/peers/boss might ______
Many Considerations

• Stage of development of the products/service
• Development process
• Organizational structure, culture, maturity
  • Support for UX
  • Power and authority
• Access to users
Some actual tools to use

Video

• Camtasia (screen capture)
• Noldus media recorder (4 separate video streams in sync)
• Facereader (affect, blink rate)
• Eyetracking, iMotions (this is its own beast)

Audio

• think aloud protocol
• comments during study
Expanded UX Tools

Behavioral Coding
- Noldus Observer (in the world)
- Morae Observer (computer based)
- Modeling Trust, Cog Load

Biometrics
- EDA
- Heart rate
- Blink rate
- Blood Pressure
- EEG
Expanded UX Tools

Prototyping

• Visio (win) / Omnigraffle (Mac)
• JustInMind Prototyper
• Axure
• Loop11
• UserZoom
• OptimalWorkshop (card sort tools)

• Data Gathering
• Qualtrics
• Google Forms
• Interviews
• Observation
That’s a lot, and it sounds expensive.

To be make a big point, UX doesn’t have to be expensive or painful. There are lots of tools to use, so find the one that fits your problem and give it a whirl.

It’s not that expensive really. (ux myths)

Eye tracking is sexy though! (Bojko 2014)
WHEN do I use all this UX knowledge?

As early as possible.

Imagine...

We test your product at the end of a project. What do you do with the feedback? Toss it

We test at the beginning of the project. What do you do with the feedback? You might implement it!
So UX is...

Testing as early as possible, with the correct tool for the job, and really giving the user a voice.

UX can also be seen as an exercise in empathy.
What’s the process? (bottom up!)

6. Evaluate & Iterate
5. Visual design
4. Interface design
3. IxD / IA
2. Requirements/specifications?
1. Users’ goals? Team’s goals?

Modified from Garrett’s *The Elements of User Experience*
1. Users’ goals? Team’s goals?

Start with these questions:
1) What do we want to get out of this service?
2) What do our users want to get out of it?

For us, you likely know what you want to get out of the service, but what do your users want?

*As you know*, students expect a lot from their library, including spaces for work, study, & groups, semi-social non-disruptive areas, snack & beverages, and familiar search experience when remotely using library services.

Because *students do not make a distinction* between the library and commercial services (e.g., Google, Microsoft, Apple, etc.) there are high expectations placed on the library’s online experience.
2. What are the requirements/specifications?

Now that you’ve identified (or gotten close to identifying) your goals and user goals, they need to turn into something more concrete.

Outline your requirements and specifications so you don’t get caught in perpetual development and feature creep scenarios down the road.
3. IXD / IA

First pass at Interaction design (IxD) and information architecture (IA).

With specifications set, start to sketch what the interaction and workflow could look like.

IA can begin to be built with your known content and tested out with a simple open card sort.
Librarians make great IA people

Alternative career paths for librarians
4. Interface design

Building the skeleton is where that early prototyping comes into play.

Utilizing your specifications and newly planned out IXD/IA an early mock-up can be made and even tested.

Done! --->
5. Evaluate

User testing shines here, early and often. But you can also use non-user methods such as heuristics. Once you have something to test with, goals still set, and a means to capture the feedback, gather some data.

If goals are not met, feedback can be taken to iterate design.
6. Iterate

With you goals in mind, take the feedback and insights gained from the evaluation(s) and make thoughtful changes.
Questions?

6. Evaluate & Iterate
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UX Methods

It’s ok to go the “quick and dirty” rapid route with UX methods as well.
Prototyping Review

Fidelity levels help scope your design and testing. Usually, less is more. Additionally, low fidelity helps you avoid the “pretty bias.”

| Focus on functions | Full test, less “pretty time” | Focus on full experience |
Prototyping fidelity

Low fidelity

High fidelity
Paper prototypes
Wireframes

music store

1. For Q1 release, music search only
2. Related artists determined by user purchasing data mining
3. Album art to be approved by legal

ARTIST NAME
This is a description about the artist. This will talk about their bio and short listing of their discography

Choose an album:
- Album Title 1
- Album Title 2
- Album Title 3

CD
- Tape
- LP
Price: $16.99
Add to Cart

Related Artists
- Artist 1
- Artist 2
Popular Tracks
- Track 1
- Track 2

stiles
Total Production Solutions

PRODUCTS
- Applications
- Brands
- Product Types
- Product Selector
- Specials

IRONWOOD
PS 1000

Features
- Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
- Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
- Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

Working Table Dimensions
- 850 mm x 1000 mm

Spindle Tilt
- No

Product Specifications
- Label
- Label
- Label
- Label
- Label
- Label

View Pricing & Technical Spec
Questions?
Thanks

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