User research

The challenges of understanding and designing for people

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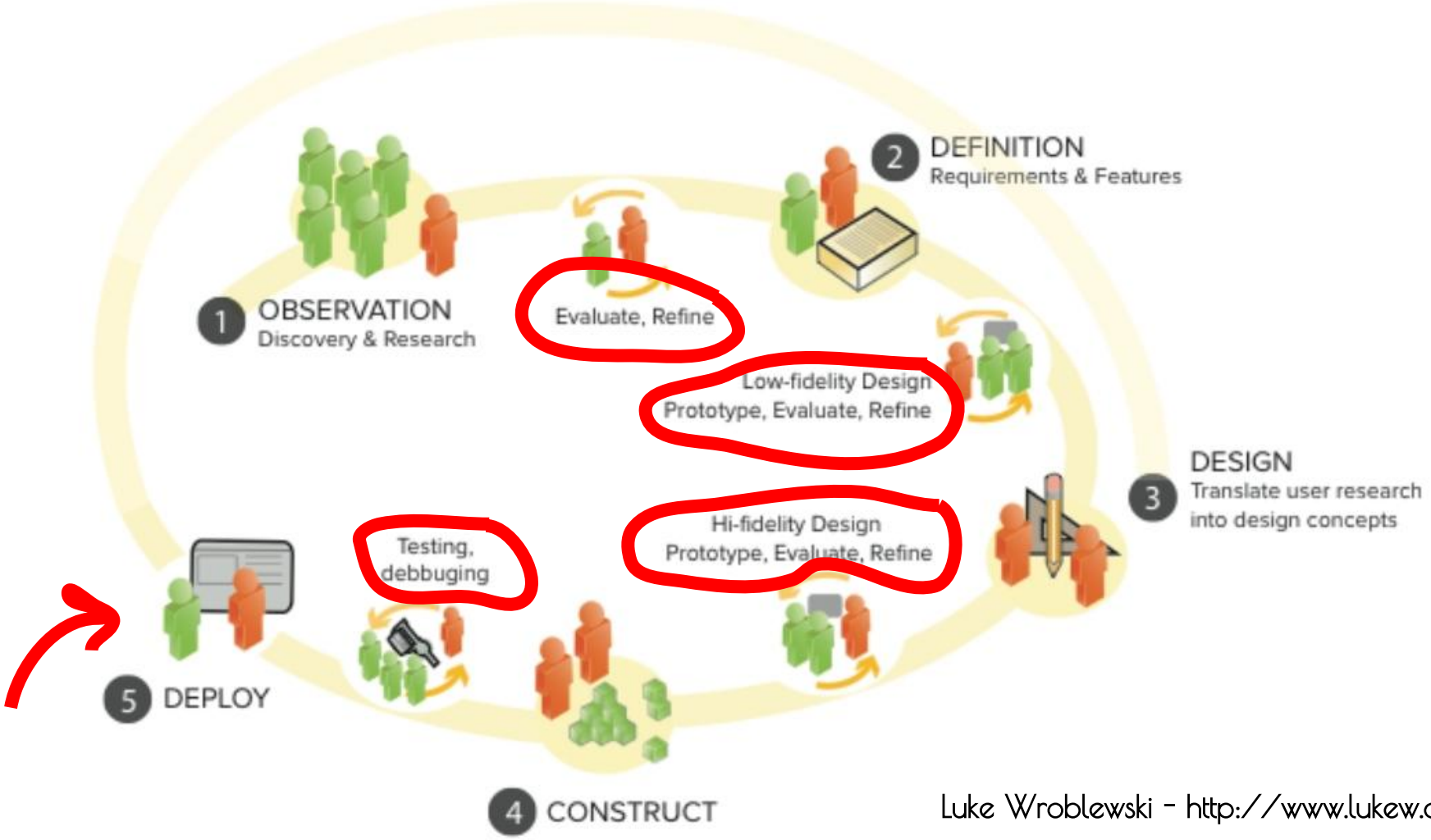
User-centered design



Luke Wroblewski - http://www.lukew.com/

A brief historical overview

System Reliability Phase (1950s and before)

- Large machines were operated by switches, lights and plugs
- Major concerns were minimizing system fault time and quickly repairing errors
- Evaluation concern:
  - How long it would function without failure?
- Users/evaluators:
  - Engineers and technical experts

System Performance Phase (1950s-1960s)

- Computers became more stable/reliable, but still large
- New methods of operation: magnetic tape, punch cards, keyboards
- Introduction of programming languages
- Evaluation concern:
  - How quickly can it perform?
- Users/evaluators:
  - Programmers and computer scientists

User Performance Phase (1960s-1970s)

- Time-sharing machines
- Machines grew in popularity
- Became used for non-programming tasks
- Evaluation concern:
  - The speed of the user rather than the speed of the system
- Users/evaluators:
  - The "non-specialist"

Usability Phase (1980s-2000s)

- Improvement in processing speed
- Graphical user interfaces (GUI) and windows, icons, menus, pointers (WIMP) paradigm
- Software could be used without extensive training
- Evaluation concern:
  - Ease of use
- Users/Evaluators:
  - The novice

Usability Phase (1980s-2000s)

- Evaluation metrics
  - time to complete tasks
  - error rate
  - accuracy
  - task completion rate
  - satisfaction

User Experience (UX) Phase (2000s-Present)

- Personal, social, cloud, mobile computing
- Contexts are broader
- Technology is more pervasive
- Shift from the utilitarian/pragmatic to the emotional/affective

User Experience (UX) Phase (2000s-Present)

- User testing methods:
  - Usability testing with think aloud, post-test questionnaires
- Inspection methods:
  - Heuristic evaluation, cognitive walkthrough
- Traditional research methods:
  - Surveys, interviews, focus groups
- Field methods:
  - Observations, Diaries, A/B Testing

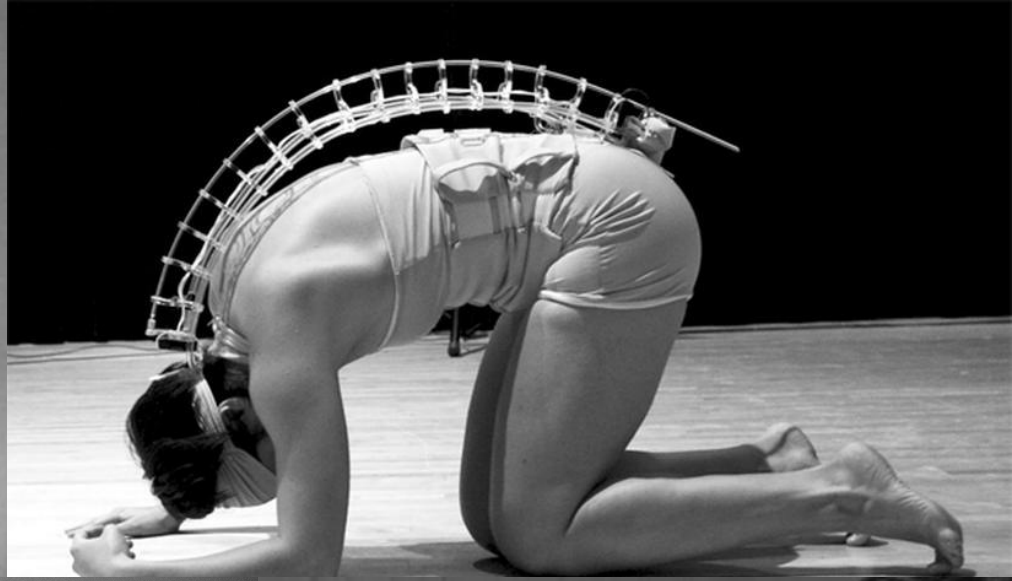
We still associate the
emotional/hedonic with UX,
and the utilitarian/pragmatic with usability,
and treat them as separates.

"Evaluation has been a dominant theme in HCI for decades, but it is far from being a solved problem."

[MacDonald and Atwood, 2013]

So... why do I care about evaluation?

“Music technology”...?

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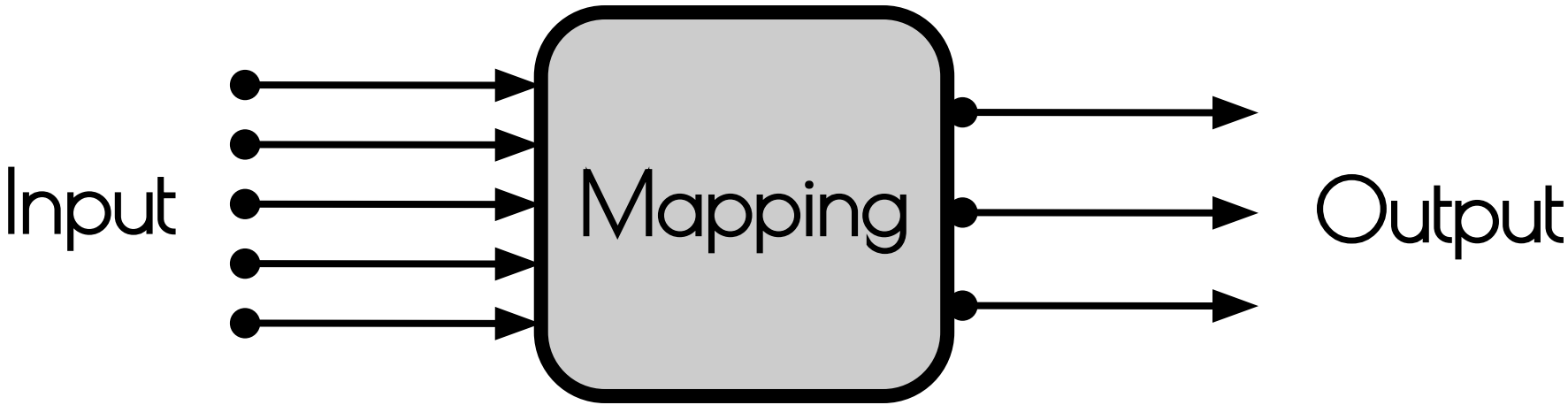
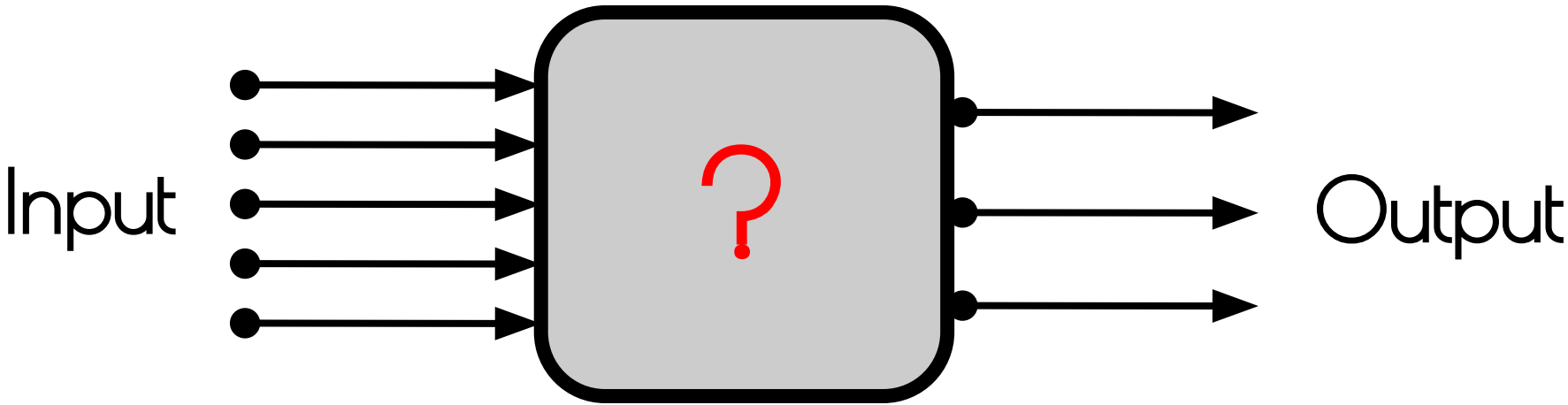
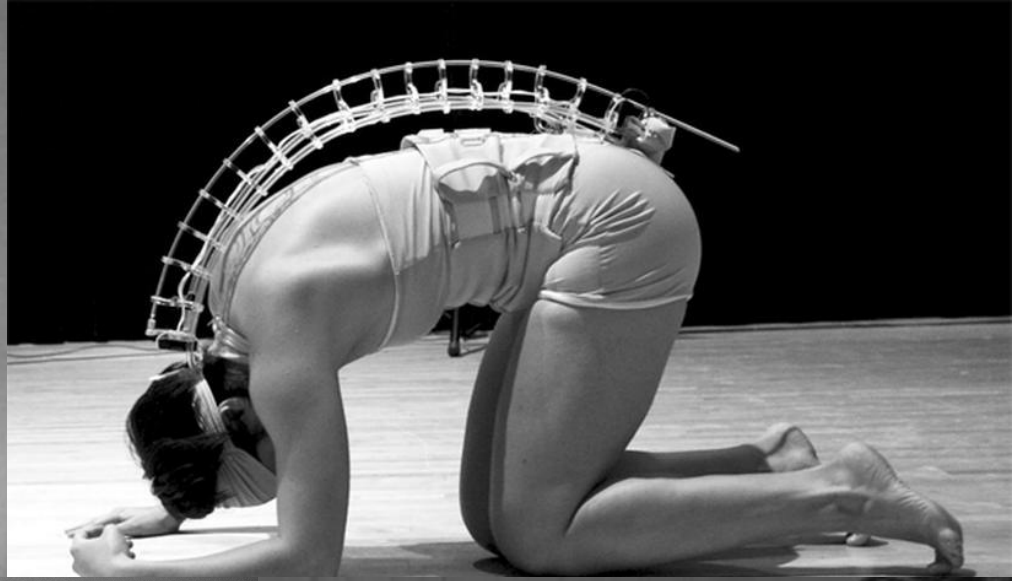
So why weren't these instruments everywhere?


Input
Mapping
Output


Input
?
Output

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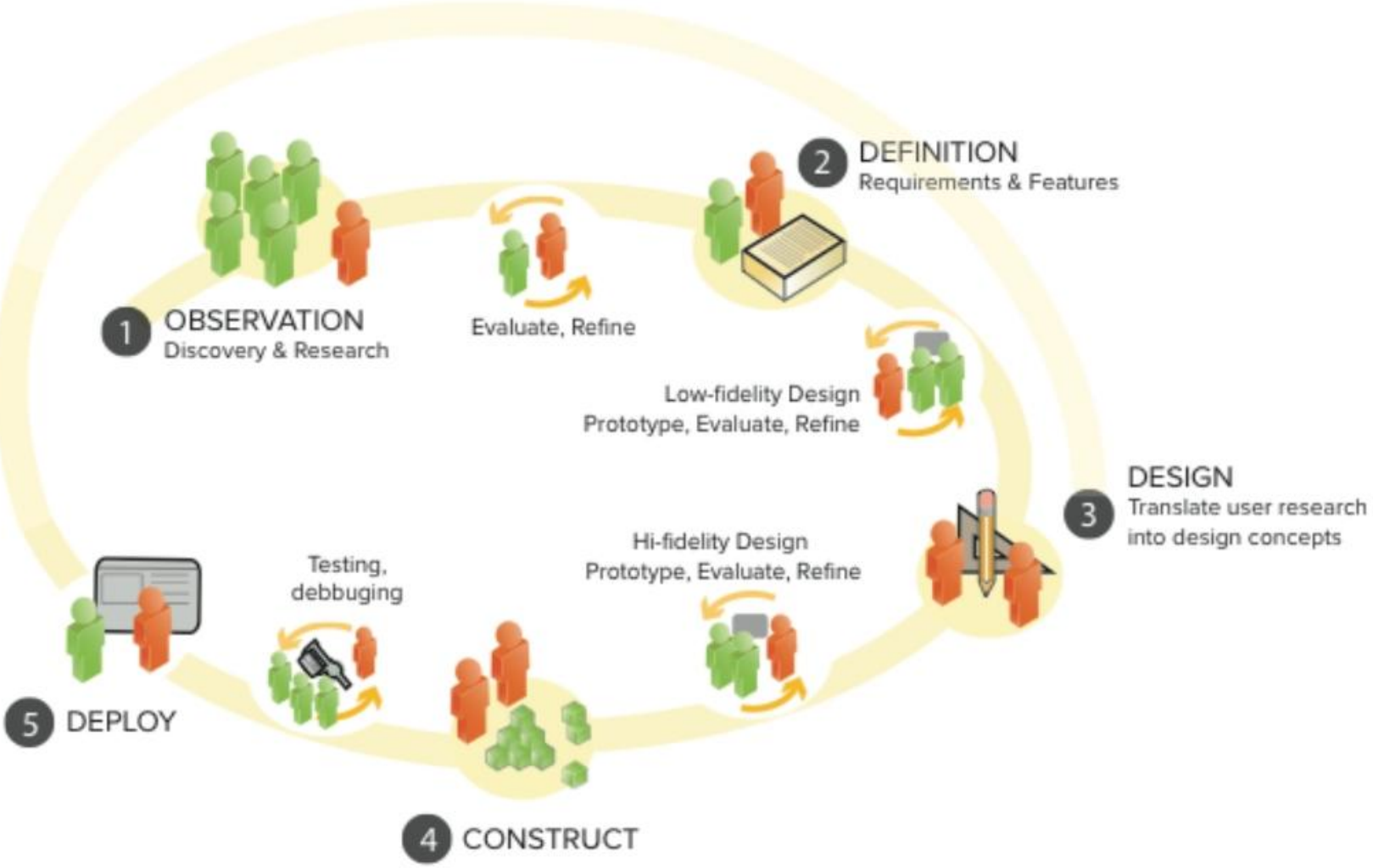
Music-oriented HCI

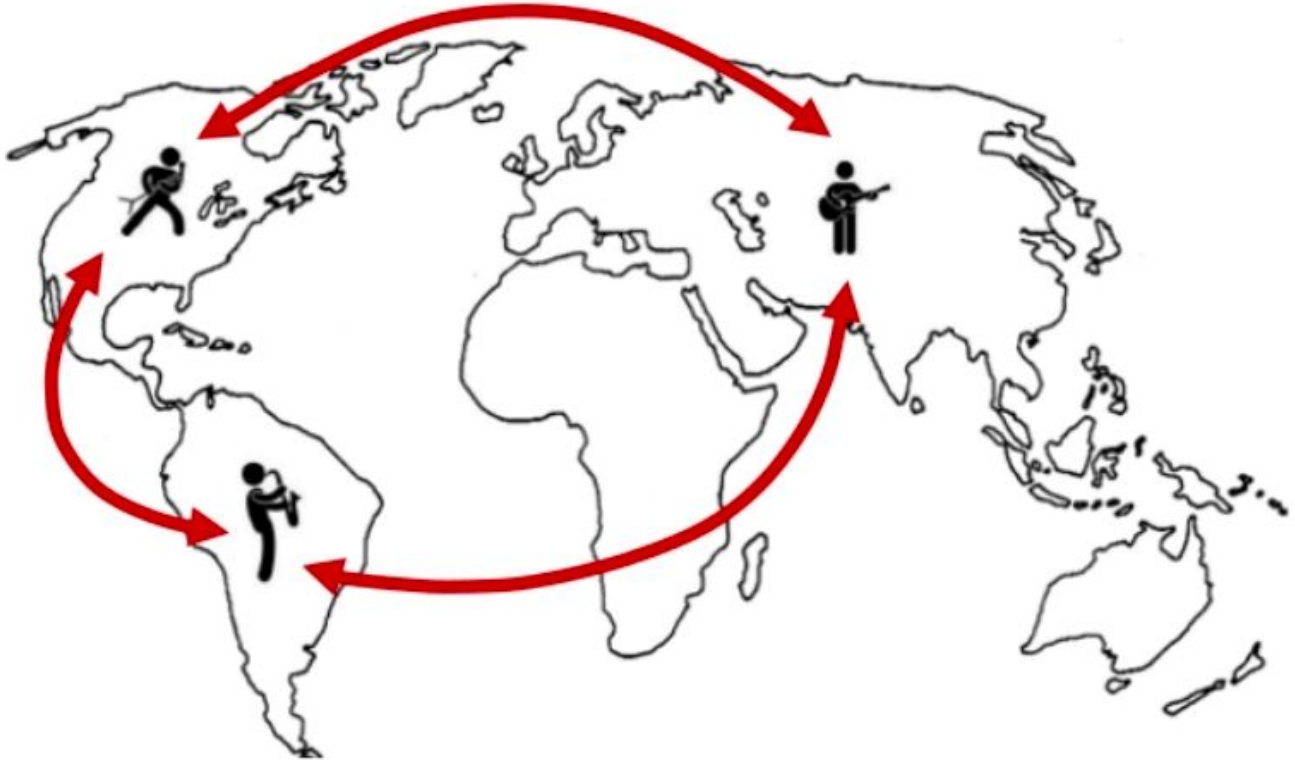

1 OBSERVATION
Discovery & Research
Evaluate, Refine
2 DEFINITION
Requirements & Features
Low-fidelity Design
Prototype, Evaluate, Refine
3 DESIGN
Translate user research
into design concepts
Hi-fidelity Design
Prototype, Evaluate, Refine
Testing,
debbuging
4 CONSTRUCT
5 DEPLOY

Key principles of usability

1. Early focus on users and tasks
2. Empirical Measurement
3. Iterative Design

[Gould and Lewis, 1985]

Distributed musical performance



Design goals

- Capitalize on computing technology inherent to the distributed context
- Increase the level of interaction between the distributed musicians
- Apply a user-centered methodology throughout the process

Key principles of usability

1. Early focus on users and tasks
2. Empirical Measurement
3. Iterative Design

[Gould and Lewis, 1985]

User observations

- Worked with 15 musicians over several months
- Observations focused on their interpersonal interactions
- Helped uncover the what and how of performance

User interviews

- Non-leading interviews
- Loose conversation based on prompts, not a Q&A
- Helped uncover the why of performance

Key principles of usability

1. Early focus on users and tasks
2. Empirical Measurement
3. Iterative Design

[Gould and Lewis, 1985]

System development

- Iterative prototypes
- One feature at a time
- Usability evaluations

Usability... for music?

Traditional user-centered design relies on a task-based approach

Task-based evaluation metrics

- Time to complete tasks
- Error rate
- Accuracy
- Task completion rate
- Satisfaction

"It is not only undesirable but impossible to define the musician's task."

[Cariou, 1992]

Limitations

- Feedback is narrow
- Difficult to test small, iterative changes
- Difficult to isolate novelty factor
- Difficult to determine long-term impressions

"What of technology not for accomplishing tasks but for having experiences, for expressing one's identity, for flirting and arguing and living?"

[Kaye et al., 2007]

From to task-based to
experience-based design

From user-centered
to people-centered design

Third-wave HCI

Long-term deployment

- Weekly sessions with a band over several months:
  - Preliminary Discussion
  - Formal A/B/A test
  - Post-condition questionnaires
  - Post-test discussion
  - Recommendations

→ Rich feedback, new system features, vast improvements

Participatory Design

- Actively involves all stakeholders
- Collaboration becomes two-sided
- Artist residency lasting several months
- Composer wrote several pieces using the system

→ New system features, new context for the system

Interdisciplinary approach

- Interactive arts
- Ludology
- Social sciences
- Affective computing

→ Techniques that go beyond usability

Lessons

- User-centered design is never linear or clear-cut
- There is no "one size fits all" solution
- Rigorously determine what to evaluate
- Tailor how to evaluate it
- Fluidly change the user's role

From academia to industry...

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More ways to sell than ever before

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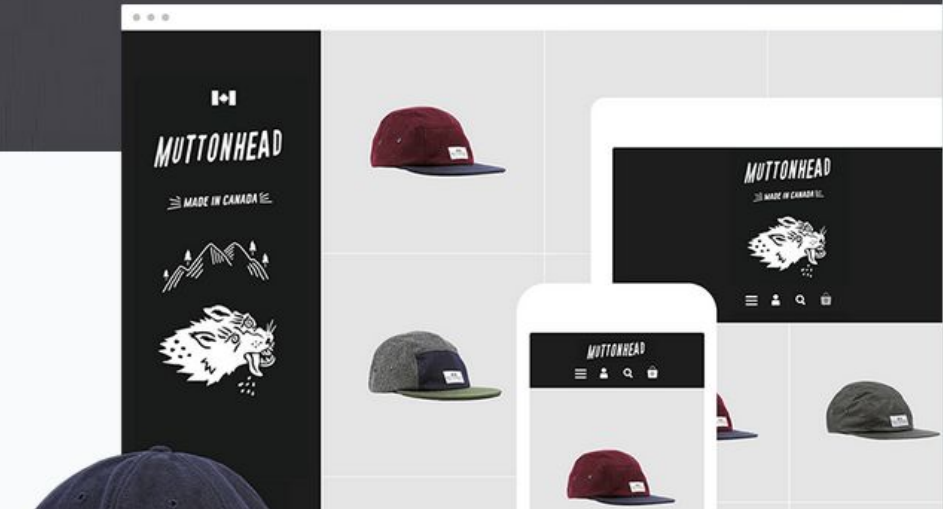

A gorgeous online store

Sell your products online in a beautiful storefront designed with mobile in mind

Sell online


Ottawa

Toronto

Montreal


shopify
CHECKOUT NEXT
RESPONSIVE CHECKOUT
DERNIERES 24H
LAST 24H
MARDI
TUESDAY
-2°
Dominant Species
Dominant Species

shannonkarleen
Waterloo, Ontario

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14 likes 4d

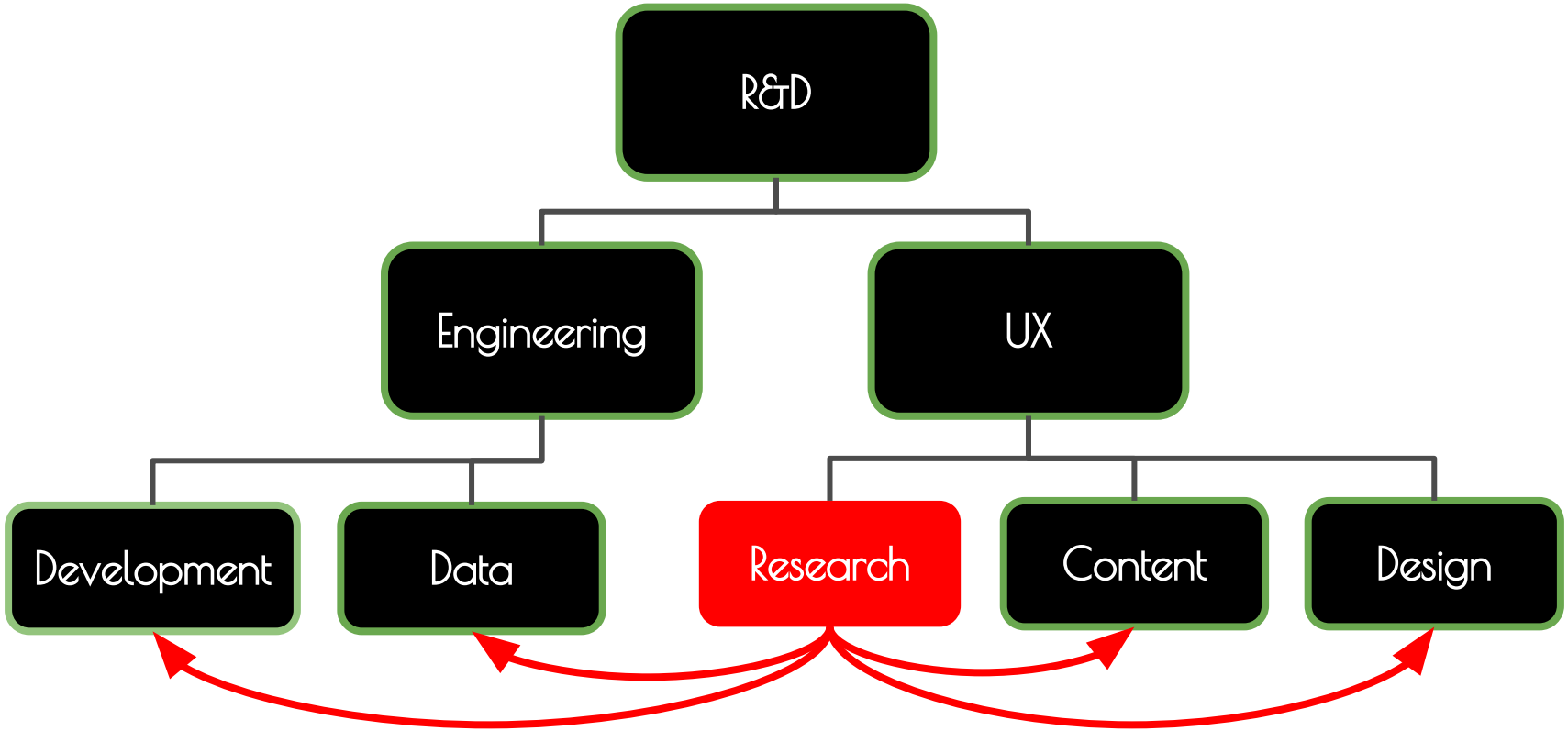
shannonkarleen So the @Shopify HQ is incredible, but this new office in Waterloo is stunning!!

mmmbizzle Dying to hear from you!

mcneilio You're in Waterloo?!? Let's meet up I'm at school today!!!

shannonkarleen @mcneilio sadly it was in and out :((I'm sure I'll be back and then we'll plan a proper visit :)

Log in to like or comment


R&D
Engineering
UX
Development
Data
Research
Content
Design

Being data-informed
rather than data-driven

Behind every data point is a person

UX research: Goals

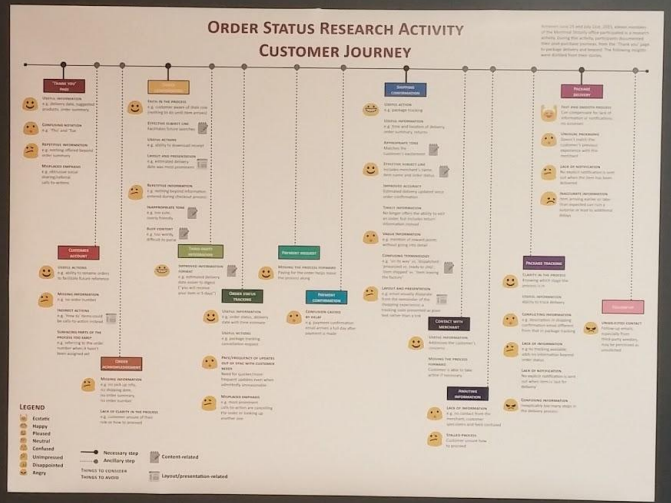
- Advocate for and represent users
- Encourage empathy across all practices
- Ask questions
- Find answers
- Share knowledge

UX research: Practices

- Understand the behaviour of users around the product
- Test assumptions about users and products
- Make recommendations accordingly
- See those recommendations through

UX research: Techniques

- Usability testing
- Interviews
- Surveys
- Observations
- Workshops
- Diary studies
- Guerilla testing


ORDER STATUS RESEARCH ACTIVITY
CUSTOMER JOURNEY
LEGEND
Ecstatic
Happy
Pleased
Neutral
Confused
Unimpressed
Disappointed
Angry
Necessary step
Ancillary step
Content-related
Layout/presentation-related


- Payment Gateway
- Checkout Flow
- Additional Checkout buttons
- Credentials
promotions
Google
ALAN


Sweet Delights
There Will Be Cake
CONGRATS, DR. EL-SHIMY!!
Red Velvet Cupcake
$2.75
Sweet Delight
Cotton Shirt
Dapper Gents


Why "mobile first"?
"I can have it with me in the storage room or wherever I am to prepare orders."
Shopify Mobile survey
Shopify Mobile wish list
"Check pending balance, view dropped carts, engagement overview."
Shopify Mobile survey
"Mobile first" facts
It's fractured the consumer journey into hundreds of real-time, intent-driven micro-moments.
Find out more:
goo.gl/U5HP32

Applied vs. pure research

- Applied research is motivated by concrete needs
- Has a shorter turnaround rate
- Know when it's "good enough"
- Time-box yourself

What does music have
to do with e-commerce?

Looking at 'UX' as more than usability

- Usability doesn't address the full user experience
- Quantitative data doesn't hold all the answers
- Designing/creating/adapting techniques for each context
- Applying empathy, avoiding assumptions
- Leave your ego at the door

Exercise

- Pair up in teams: 1 facilitator, 1 test participant
- Go to http://store.delshimy.com on a smartphone
- Participant task:
  - Add 3 red velvet cupcakes to your cart
  - Have them shipped to a friend's house
  - Use the discount code '15off' to receive a 15% discount
  - Use credit card number 4012 8888 8888 1881,
    Expiry date: 11/17, CVV: 161
- Facilitator task:
  - Observe participant, ask questions where necessary
  - Make one recommendation for improvement based on your observations
  - Note: you will have to make the case for your recommendation!!