

USER RESEARCH:

THE CHALLENGES OF DESIGNING FOR PEOPLE

DALIA EL-SHIMY
UX RESEARCH LEAD, SHOPIFY



USER-CENTERED DESIGN



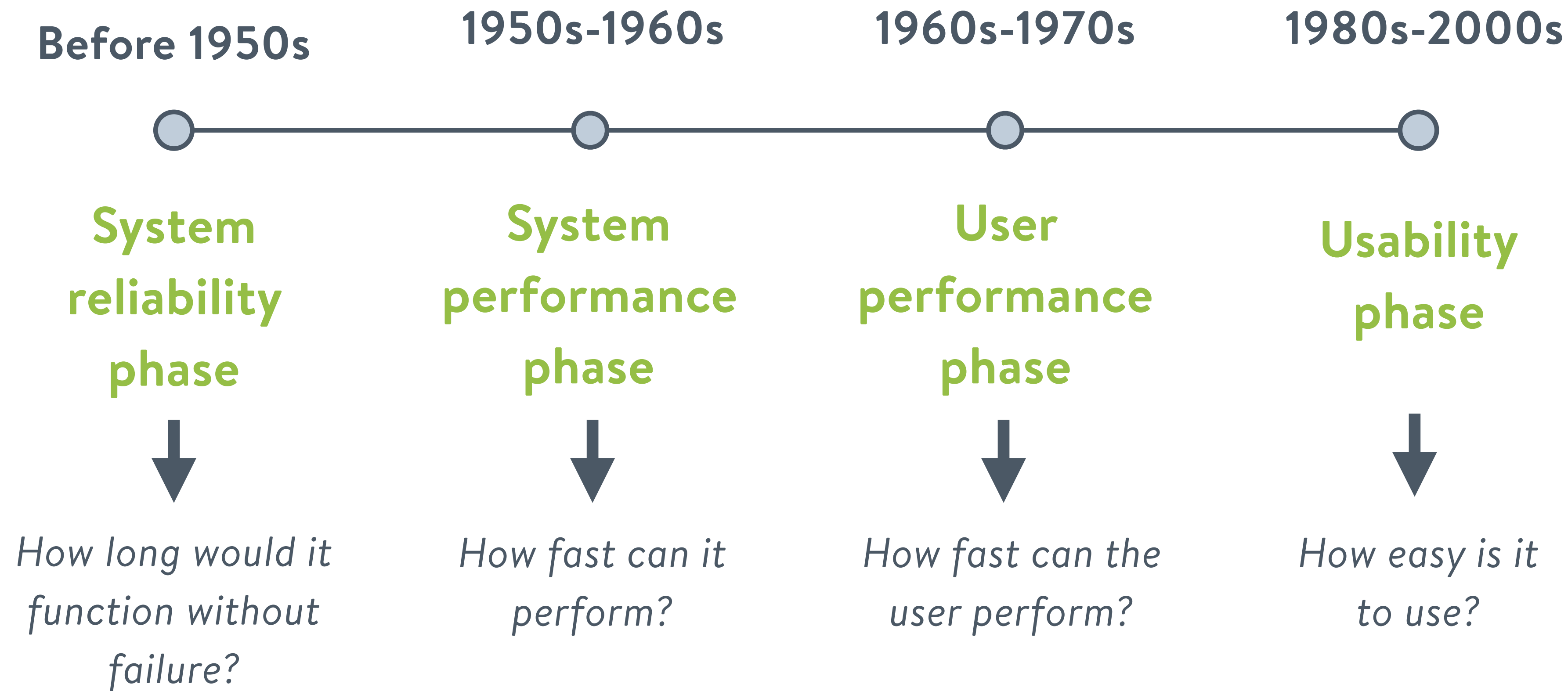


USER RESEARCH IS A CRITICAL COMPONENT OF USER-CENTERED DESIGN



A brief historical overview of user research

...and, also, of where UX comes from



Evaluating usability

Give your target users a series of repeatable **tasks**, then measure:

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

“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 TASK-BASED TO EXPERIENCE-BASED DESIGN



FROM USER-CENTERED TO PEOPLE-CENTERED DESIGN

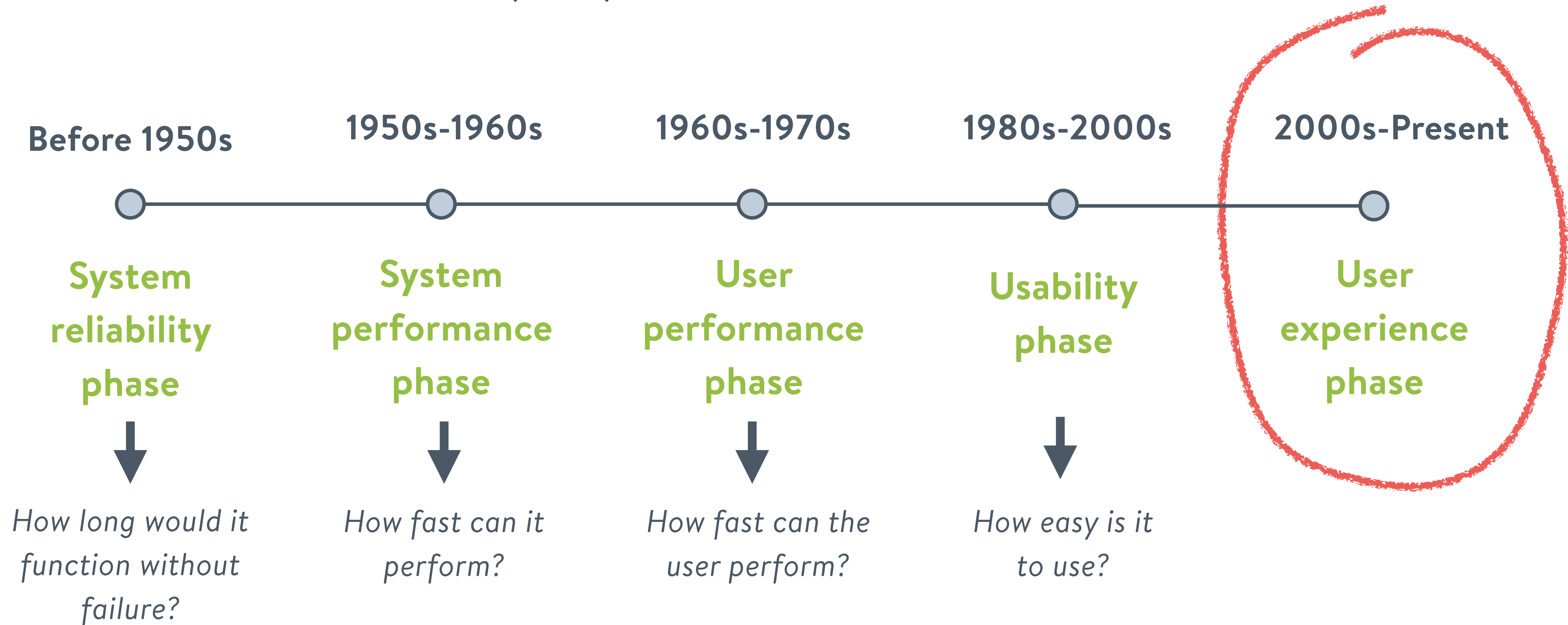


THIRD-WAVE HCI



A brief historical overview of user research

(and, also, of where UX comes from)



User experience phase

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

User experience evaluation

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

WE'RE REALLY GOOD AT EVALUATING TASKS...
BUT LESS SO EXPERIENCES.



QUESTION 1:

What are some examples of interfaces where evaluating *tasks* might be more important? What about ones where evaluating *experiences* might be more important?



**“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
THIS PROBLEM?







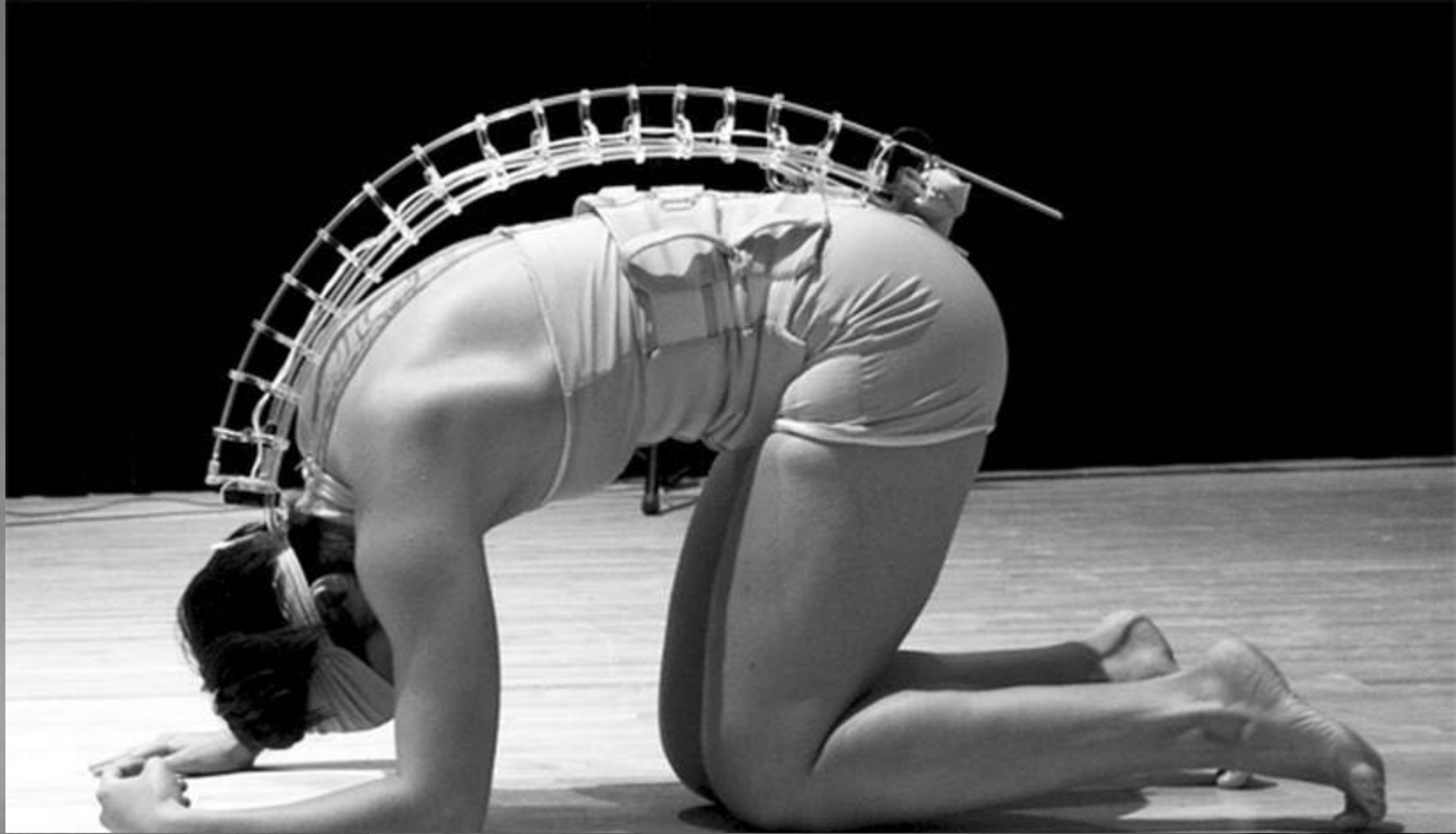


Queens
CFRC
101.9 FM
62 Fifth Field Company Lane

CFRC
90 YEARS
1927-2017
101.9fm

MUSIC TECHNOLOGY...?





SO WHY WEREN'T THESE INSTRUMENTS
EVERYWHERE?



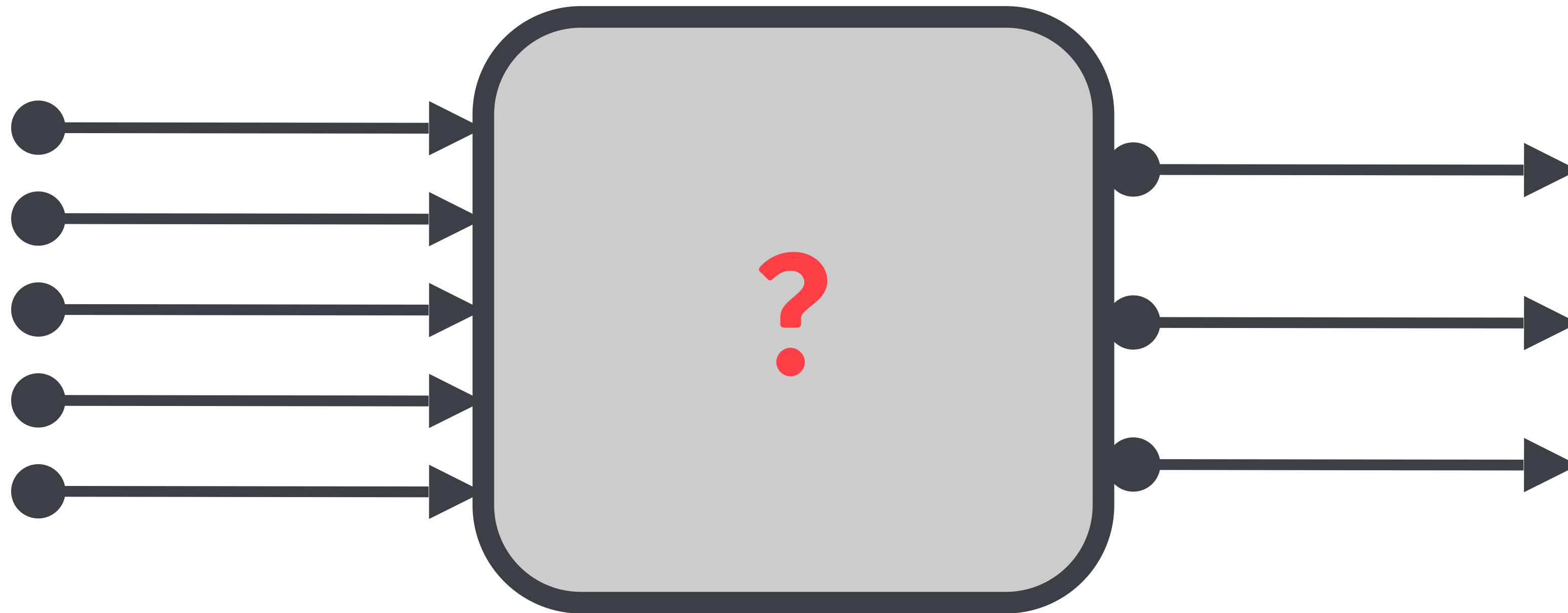
Input



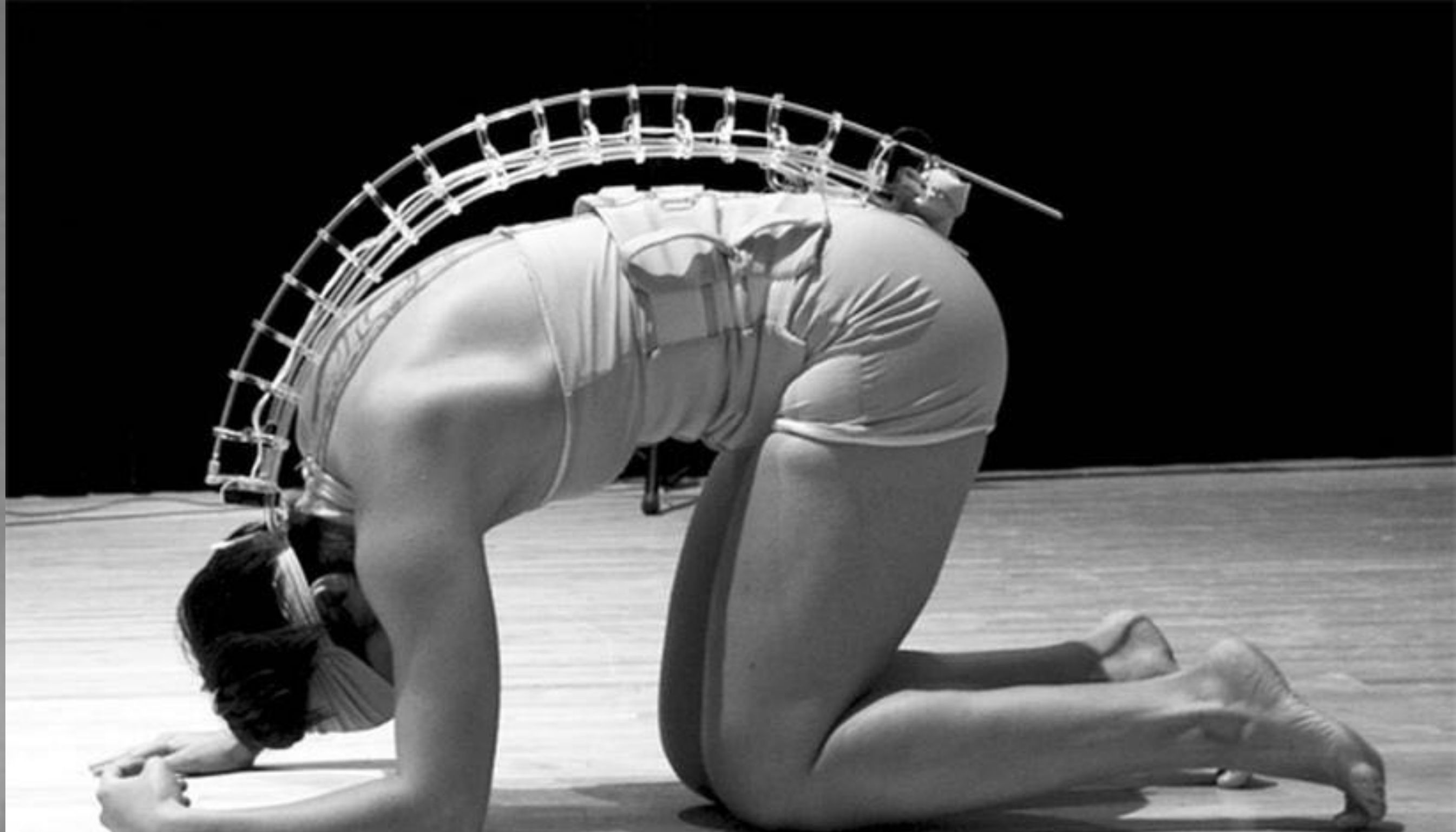
Output



Input



Output



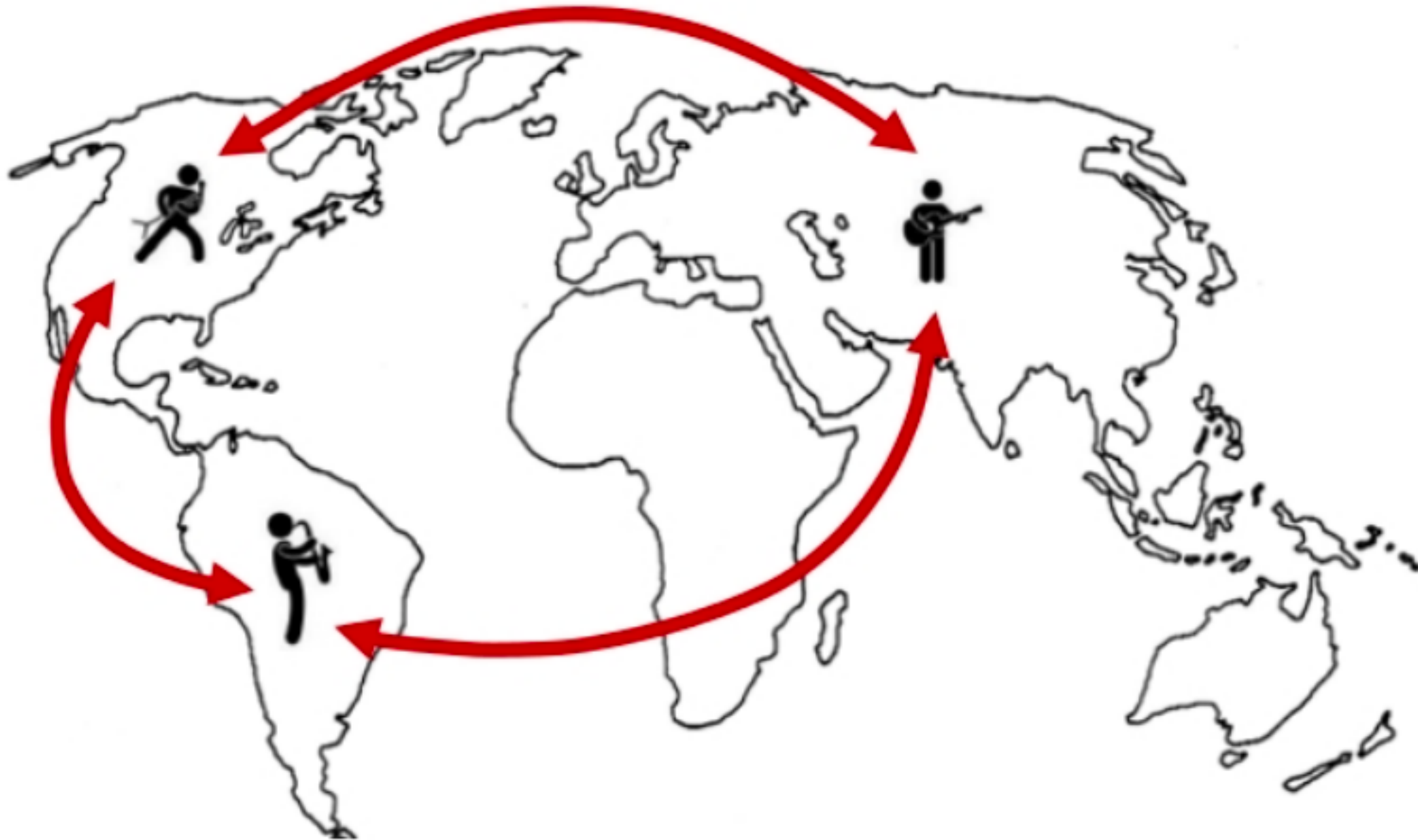
MUSIC-ORIENTED HCI



HOW COULD MUSIC TECHNOLOGY BENEFIT FROM USER-CENTERED DESIGN?



Distributed musical performance

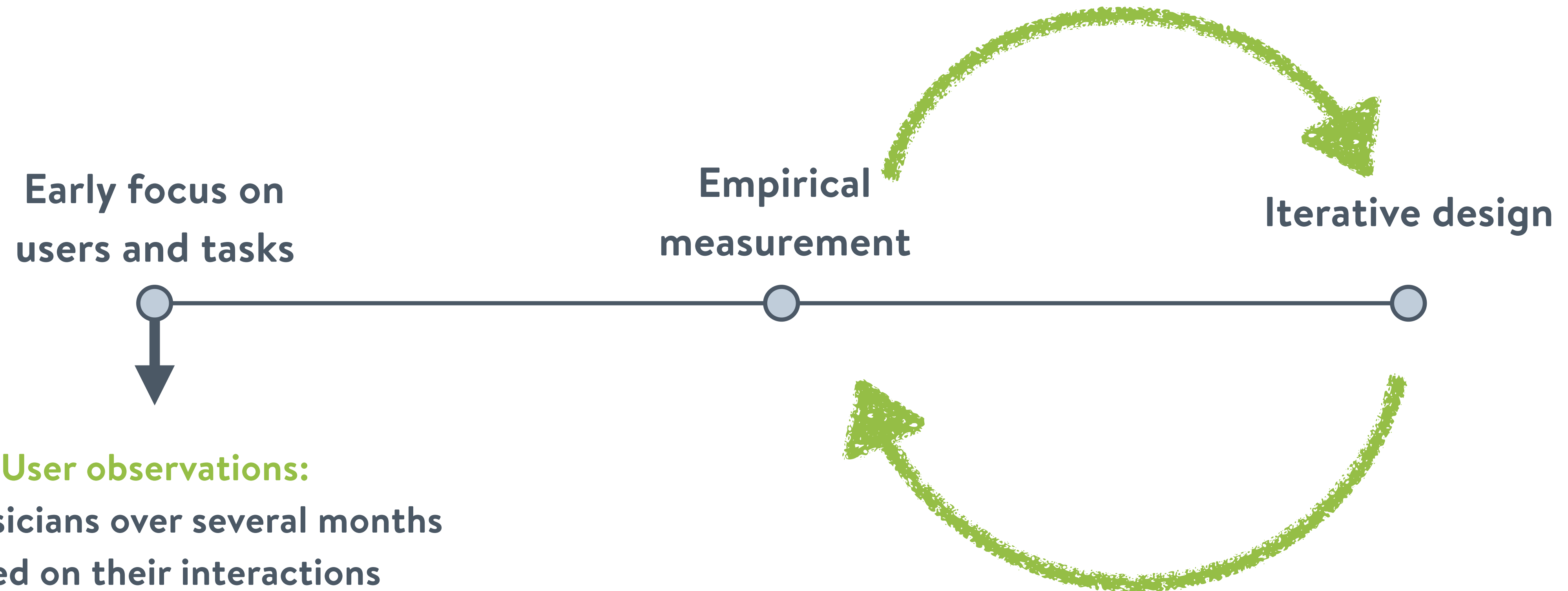




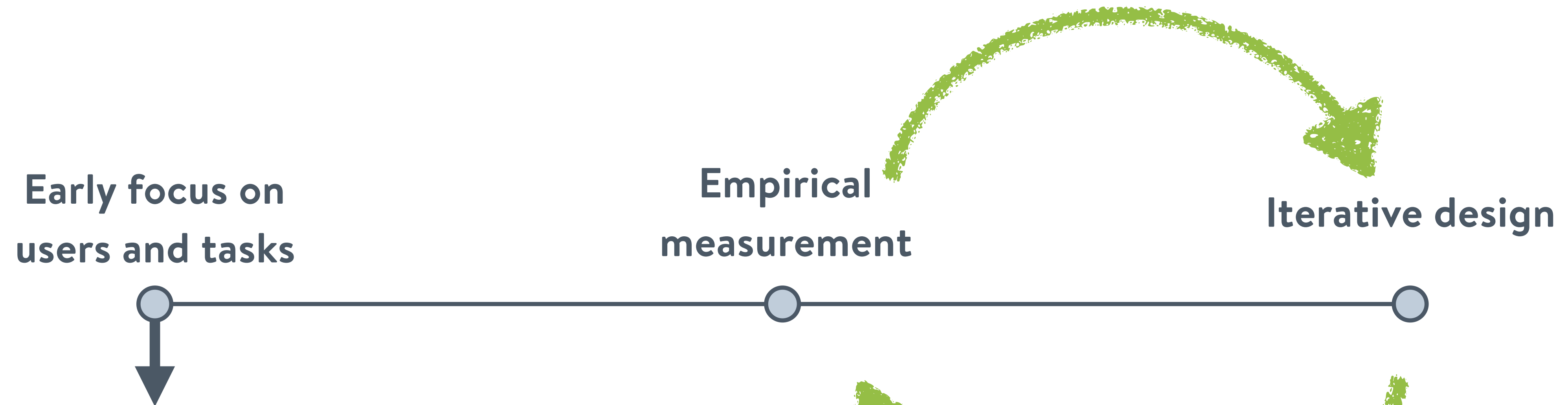
Design goals

- 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



Key principles of usability

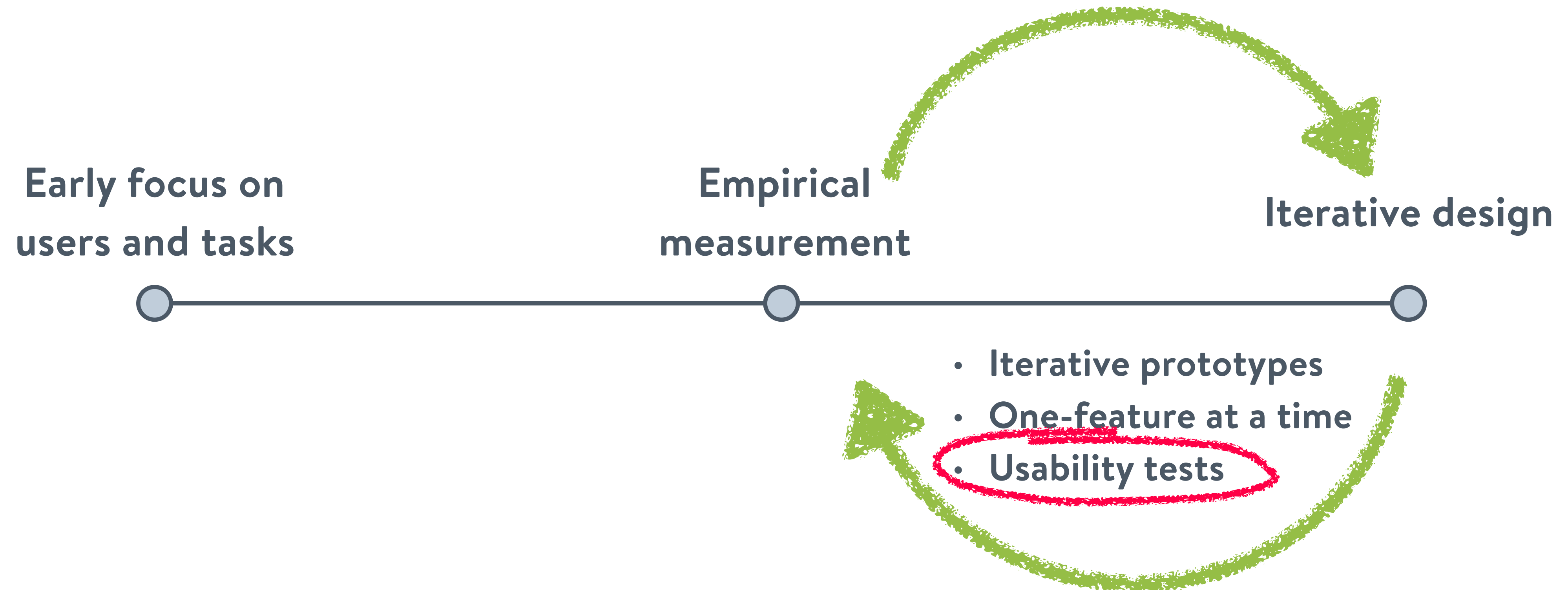


User interviews:

- Non-leading interviews
- Based on loose prompts
- Uncovered the *why*

➔ Creativity, enjoyment, self-expression, interaction

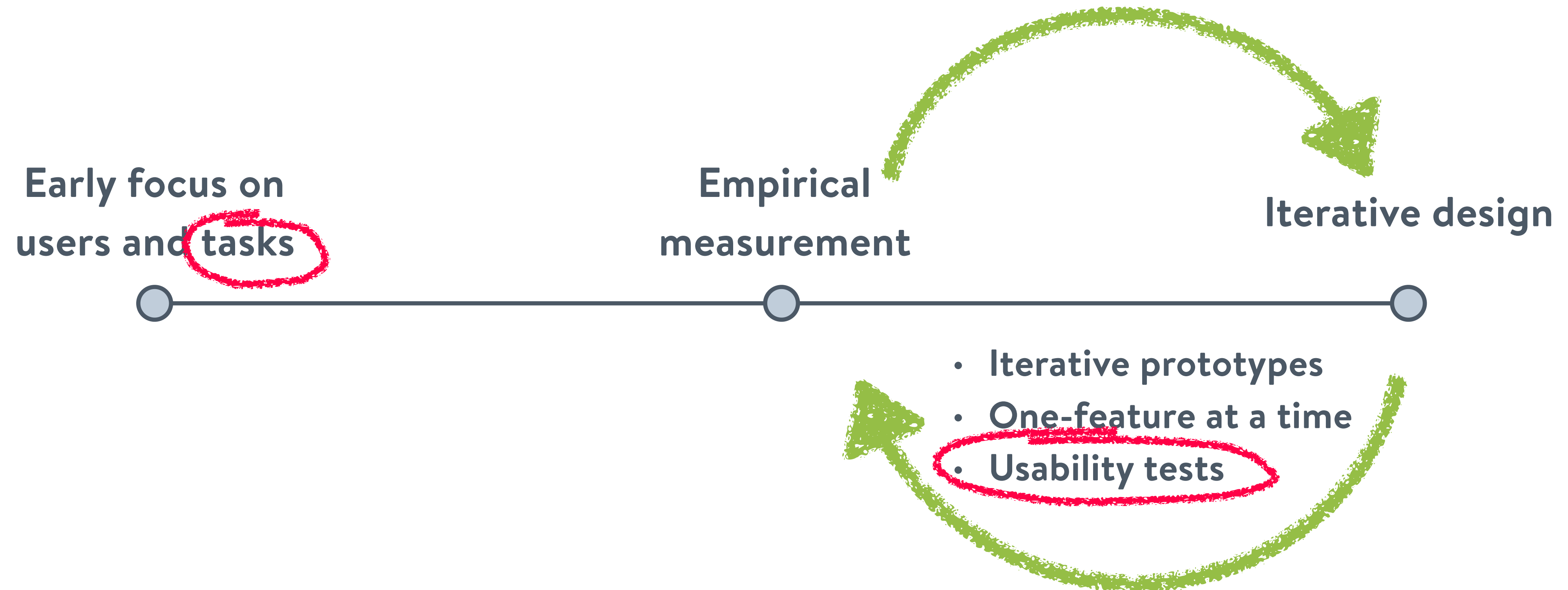
Key principles of usability



USABILITY... FOR MUSIC?



Key principles of usability



Task-based evaluation

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



**“IT IS NOT ONLY UNDESIRABLE
BUT IMPOSSIBLE TO DEFINE
THE MUSICIAN’S TASK.”**

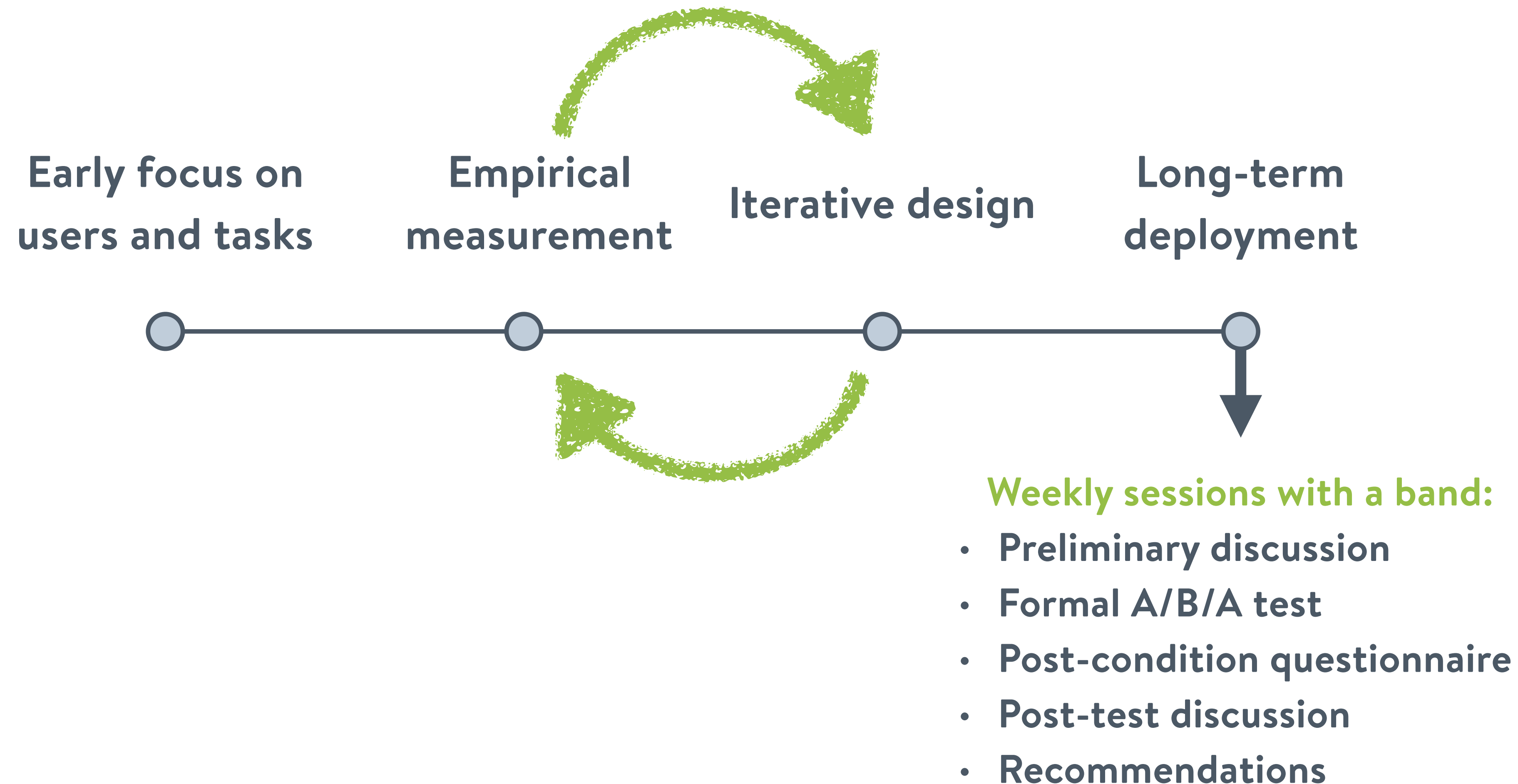
[CARIOU, 1992]



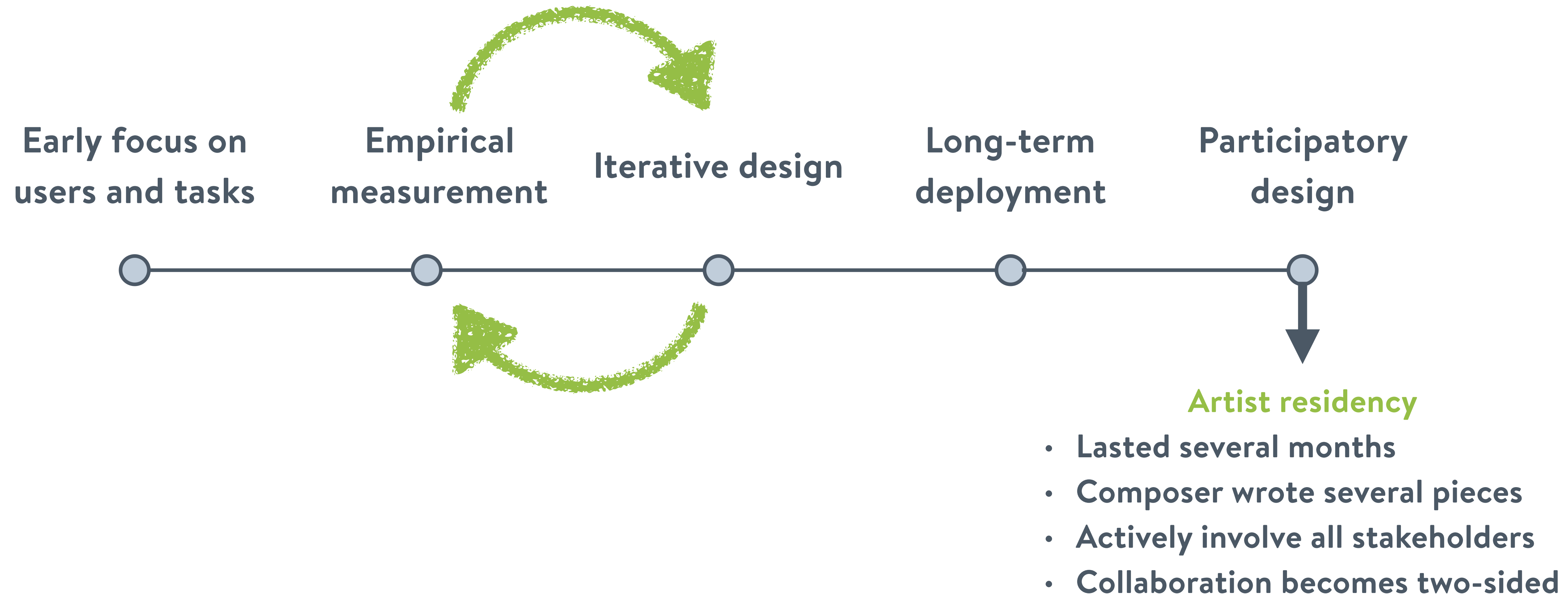
Limitations

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

How things actually turned out...



How things actually turned out...





User-centered design isn't always clear cut

- There is no neat, linear, “one-size fits all” solution
- It's not about following a process to the letter
- It's about understanding the process well enough to be able to adapt it to different contexts
- For each context: determine **what** to evaluate and **how** to evaluate it

FROM ACADEMIA TO INDUSTRY...



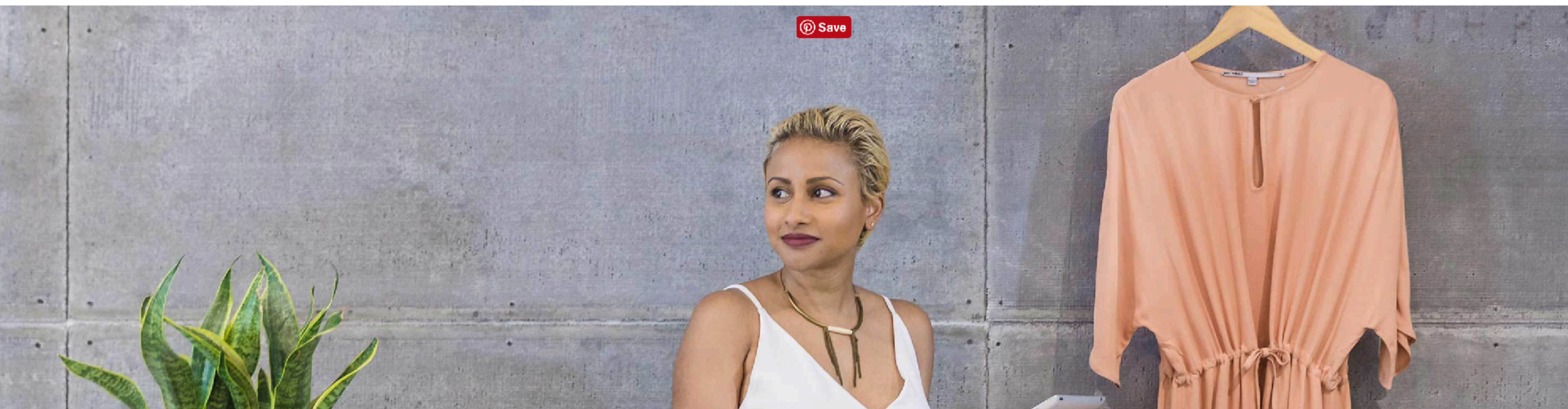
[WAYS TO SELL ▾](#)[PRICING](#)[BLOGS](#)[RESOURCES ▾](#)[Help Center ▾](#)[Log in](#)[Get started](#)

The ecommerce platform made for you

Whether you sell online, on social media, in store, or out of the trunk of your car, Shopify has you covered.

[Get started](#)

Try Shopify free for 14 days. No risk, and no credit card required.

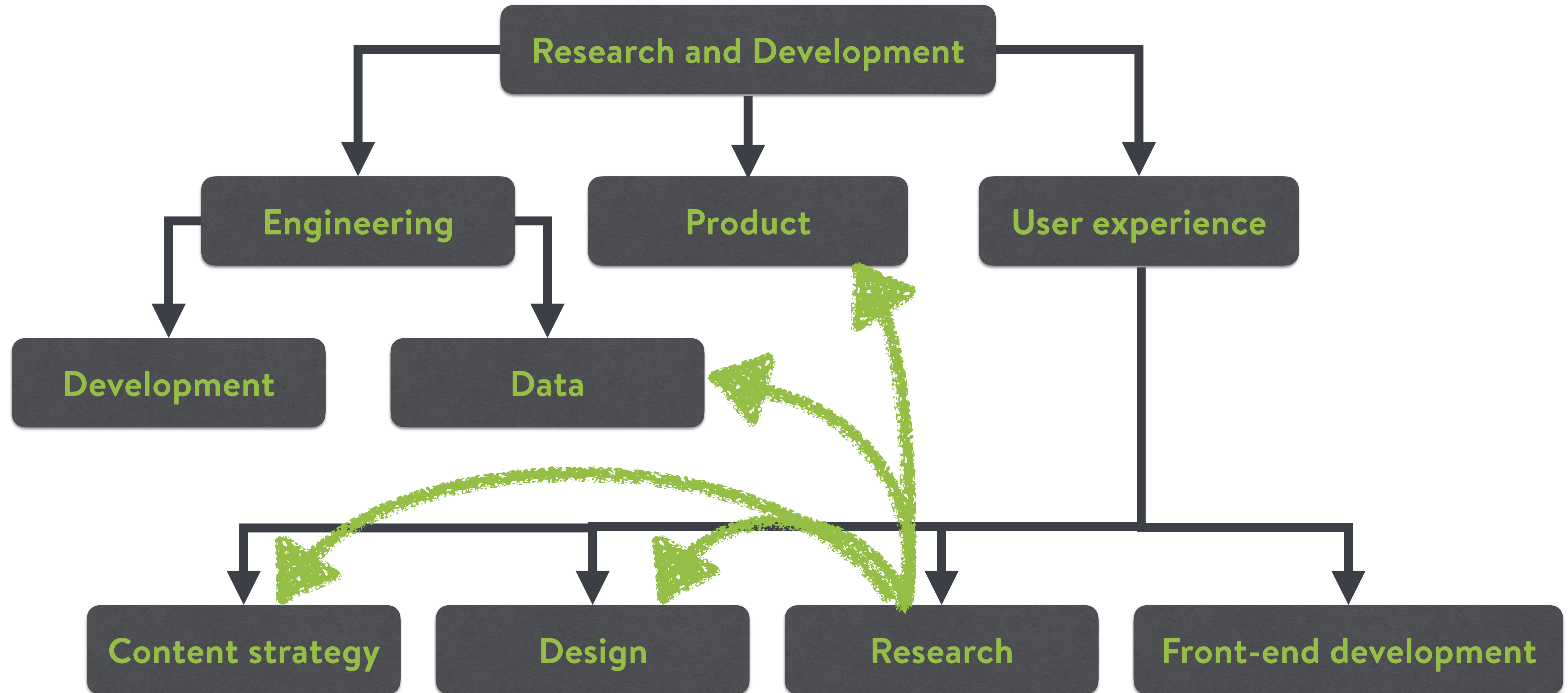




The role of UX research

- Understand behaviours/needs/expectations around the product
- Make recommendations accordingly
- See those recommendations through
- Ask questions, find answers, share knowledge
- Encourage empathy across all disciplines
- **It's all about making sense of information to help people make decisions**

The role of UX research



HOW DO UX RESEARCHERS WORK WITH DATA SCIENTISTS?



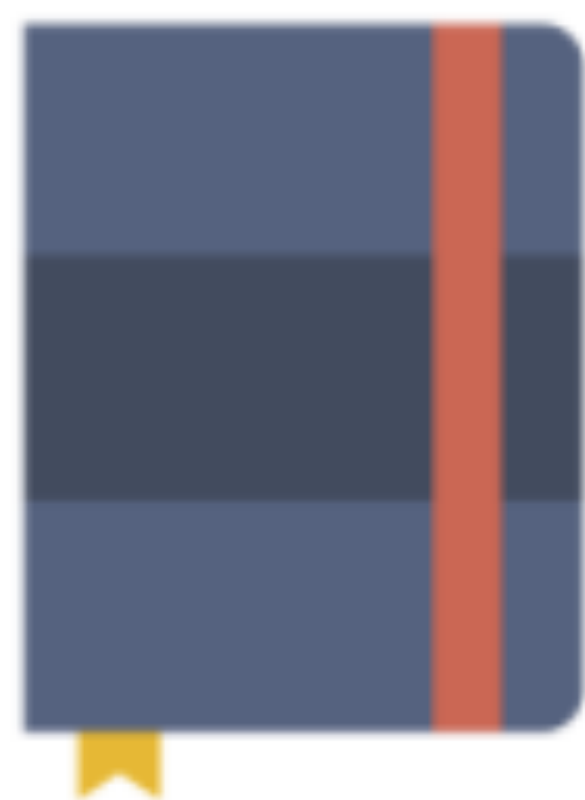


LET'S TALK ABOUT **QUALITATIVE** RESEARCH









shopify

Journal study

Elyse's Shopify Journal

Welcome back Elyse, and thanks for taking the time to fill out your journal today!

* 1. How's your theme coming along?

- ☐ I'm still working on it.
- ☐ It's ready to go live on my store.







Shoe
Chi

Shopf-inn Cart



Décor

Décor &
Cie.



Shopping Cart

Red Velvet
Cupcake



\$2.75

\$10 gift card

Don't you just love cupcakes? Especially when they're on sale? Well, it just so happens your favourite pastry shop, Sweet Deli, is celebrating its 4-year anniversary by having a "Buy 4, Get 1 Free" promotion on their all-time favourite flavour: a strawberry cupcake with chocolate icing. Hurry up and grab some of these delicious cupcakes for yourself!

shopping cart:
chocolate cupcakes

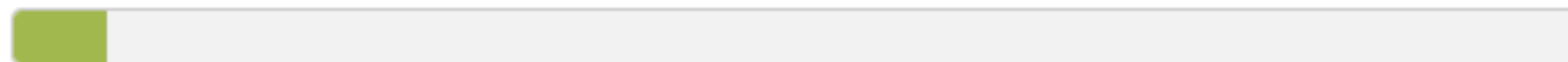
1A

Dapper
Gents



LET'S TALK ABOUT **QUANTITATIVE** RESEARCH





This is your chance to directly influence the upgrades we'll make to Shopify over the next year. The more we understand what's important to you, the better we can develop solutions to help you make sales and grow your business.

This survey will only take about 10 minutes. Complete the survey by Friday, March 11th for your chance to win an \$800 Apple voucher.

*** How would you describe yourself?** 

- ☐ Shopify store owner
- ☐ Working for a Shopify store owner
- ☐ Shopify partner or expert
- ☐ Previously owned a Shopify store
- ☐ Did the free trial but never launched my store

Shopify Redshift_7.sql - DataGrip 2016.1.1

DB Consoles > Shopify Redshift > Shopify Redshift_7.sql

Database

Shopify Redshift (warehouse)

admin

channels

checkout

discovery

error_events

experiments

facebook

finance

finance_ops

funnel

information_schema

infrastructure

insights

instafacts

internal_tools

loading

marketing

WITH shops_using_debut AS (
SELECT DISTINCT _shop_key, "theme name"
FROM admin.theme_editor_customization_facts
WHERE "theme editor version" = '2'
AND "theme name" LIKE '%debut%' OR "theme name" LIKE '%Debut%'
AND "theme role" = 'main'
)
SELECT "shop created at (est)", "shop name", "shop permanent domain", "theme name"
FROM shops_using_debut
JOIN starscream.shop_dimension USING (_shop_key)
WHERE "shop created at (est)" >= '2016-10-26' -- (INSERT YOUR FAVE MIN DATE HERE)
AND "password enabled" = 'Password is Enabled'

warehouse.public

Database Console Shopify Redshift_7

Output

Result 3

1-500 of 501+

Tab S...(TSV)

View Query

| | "shop created at (est)" (yyyy-MM-dd HH:mm:ss.ffffff) | "shop name" | "shop permanent domain" | "theme name" |
|----|--|-------------------------|---------------------------------------|--------------|
| 1 | 11:22:46.000000 | Sigma Beauty | sigmabeauty.myshopify.com | debut |
| 2 | 17:50:06.000000 | Kay&Ky Collection | kay-ky-collection.myshopify.com | debut |
| 3 | 04:02:35.000000 | krafty + kaeratana | krafty-kaeratana.myshopify.com | debut |
| 4 | 09:59:52.000000 | 868 Apperal | 868-apperal.myshopify.com | debut |
| 5 | 10:25:11.000000 | Drip Drop Water Testing | drip-drop-water-testing.myshopify.com | debut |
| 6 | 15:06:56.000000 | organogoldstore | organogoldstore.myshopify.com | debut |
| 7 | 17:39:59.000000 | Waters Supply Co. | waters-supply-co.myshopify.com | debut |
| 8 | 14:21:23.000000 | DreamD's | dreamds.myshopify.com | debut |
| 9 | 06:30:53.000000 | GEMELLILINE | gemelliline.myshopify.com | debut |
| 10 | 19:44:47.000000 | Vanity Treasures | vanity-treasures.myshopify.com | debut |
| 11 | 14:31:41.000000 | Health2020 | health2020.myshopify.com | debut |
| 12 | 07:53:28.000000 | Heavenly Creperie | octal-2.myshopify.com | debut |
| 13 | 22:43:03.000000 | Rhett Tucker Handmade | rhett-tucker-handmade.myshopify.com | debut |
| 14 | 02:18:28.000000 | Gardor Enterprises | gardor-enterprises.myshopify.com | debut |
| 15 | 19:04:50.000000 | Jane's Fashions | janes-fashions.myshopify.com | debut |
| 16 | 15:46:02.000000 | tshirtst | tshirtst.myshopify.com | debut |
| 17 | 15:44:15.000000 | AksesuaraiJums | aksesuaraijums.myshopify.com | debut |
| 18 | 07:05:27.000000 | Ev Yapımı | ev-yapimi.myshopify.com | debut |
| 19 | 22:55:53.000000 | Grand Nerve | grand-nerve.myshopify.com | debut |

10:26 LF UTF-8



REPORT PARAMETERS

Refresh

Date Interval

Last 4 weeks

Ticket Topic

Support Tickets Analysis

Number of support tickets for a chosen topic and period, with comparisons to an equal previous period, normalization by total number of customers, and as percentage of total support tickets.

Number of Tickets
and rate of change from previous period

14,583

▲ 19.8%

Percent of All Support Tickets
and rate of change from previous period


7.04%






▼ 1.7%

Number of tickets for this topic per week (last 6 months)






 Search reports & help

-  Dashboards
-  Shortcuts
-  Intelligence Events
-  Real-Time
-  Audience

- Overview
- Active Users
- Cohort Analysis BETA
- User Explorer
- Demographics
- Interests
- Geo
- Behavior

 All Users
100.00% Sessions

 + Add Segment

Overview

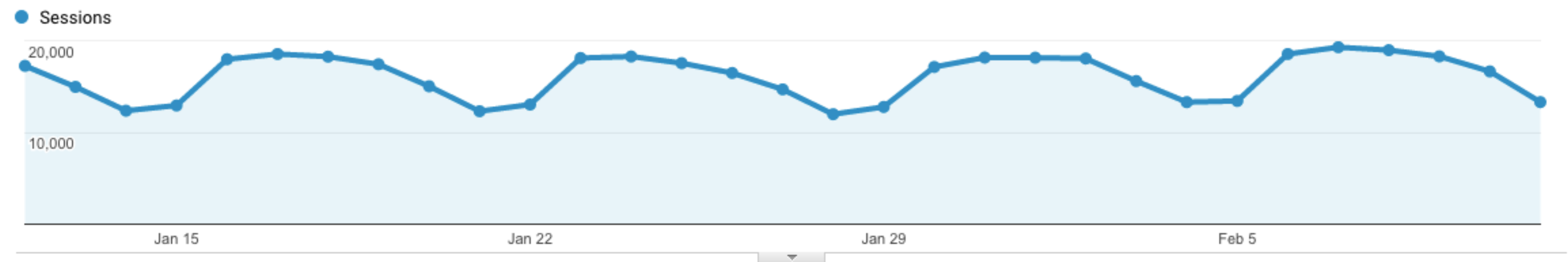
Sessions ▾ vs. [Select a metric](#)

Hourly

Day

Week

Month

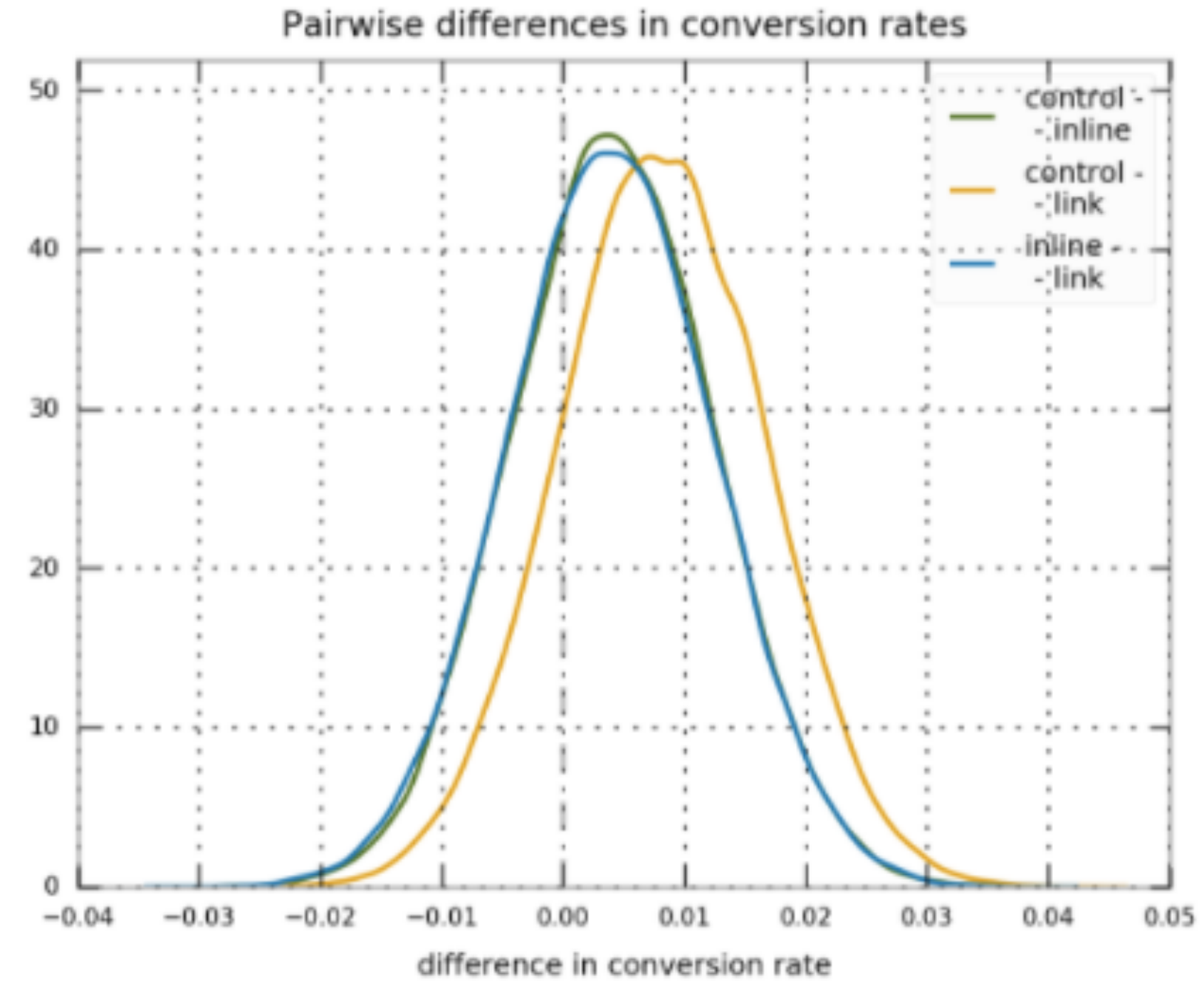
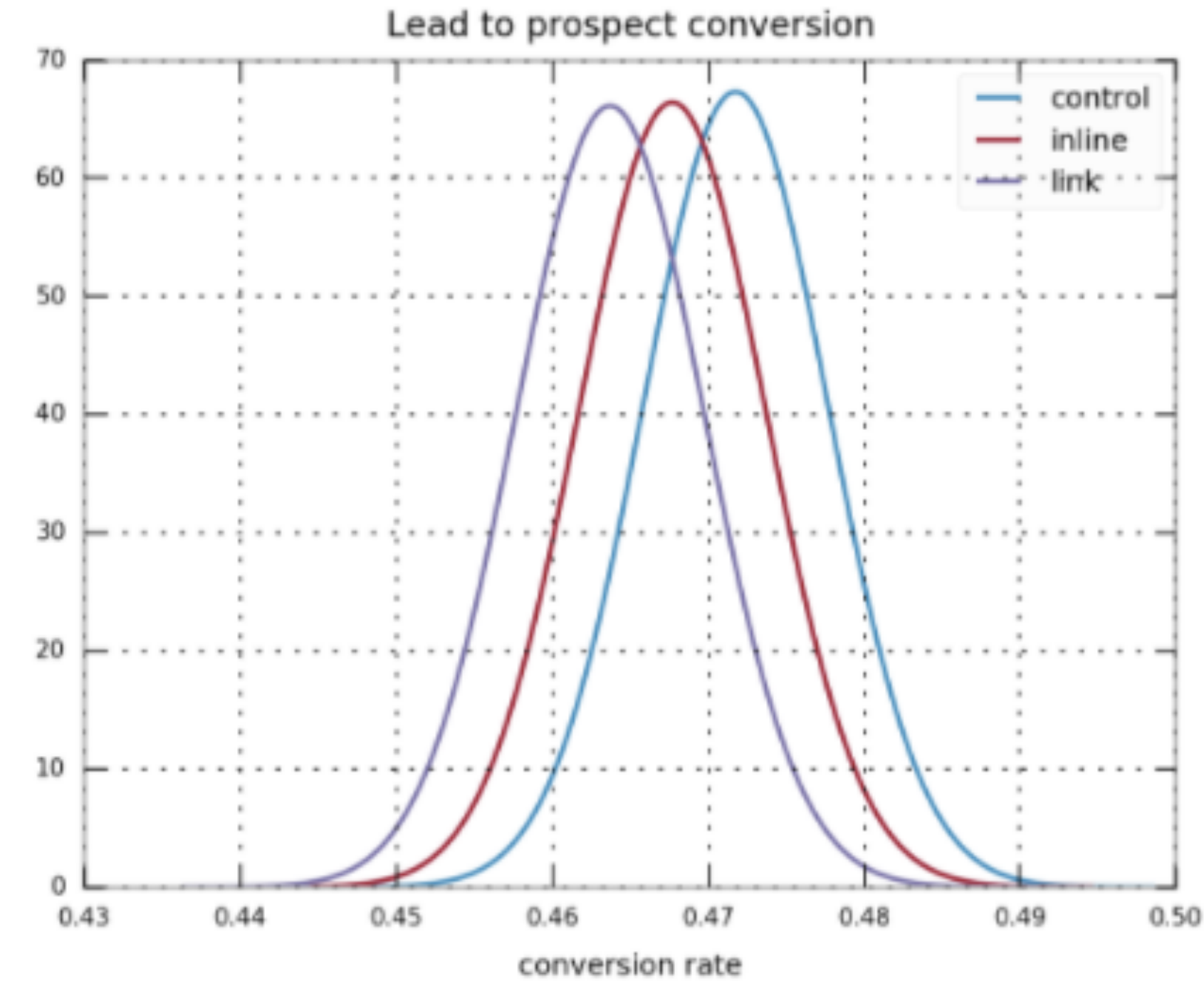


| | | | |
|-----------------------------------|-----------------------|--------------------------|-------------------------|
| Sessions 498,621 | Users 255,457 | Pageviews 3,147,725 | Pages / Session 6.31 |
| Avg. Session Duration 00:04:40 | Bounce Rate 30.86% | % New Sessions 42.16% | |



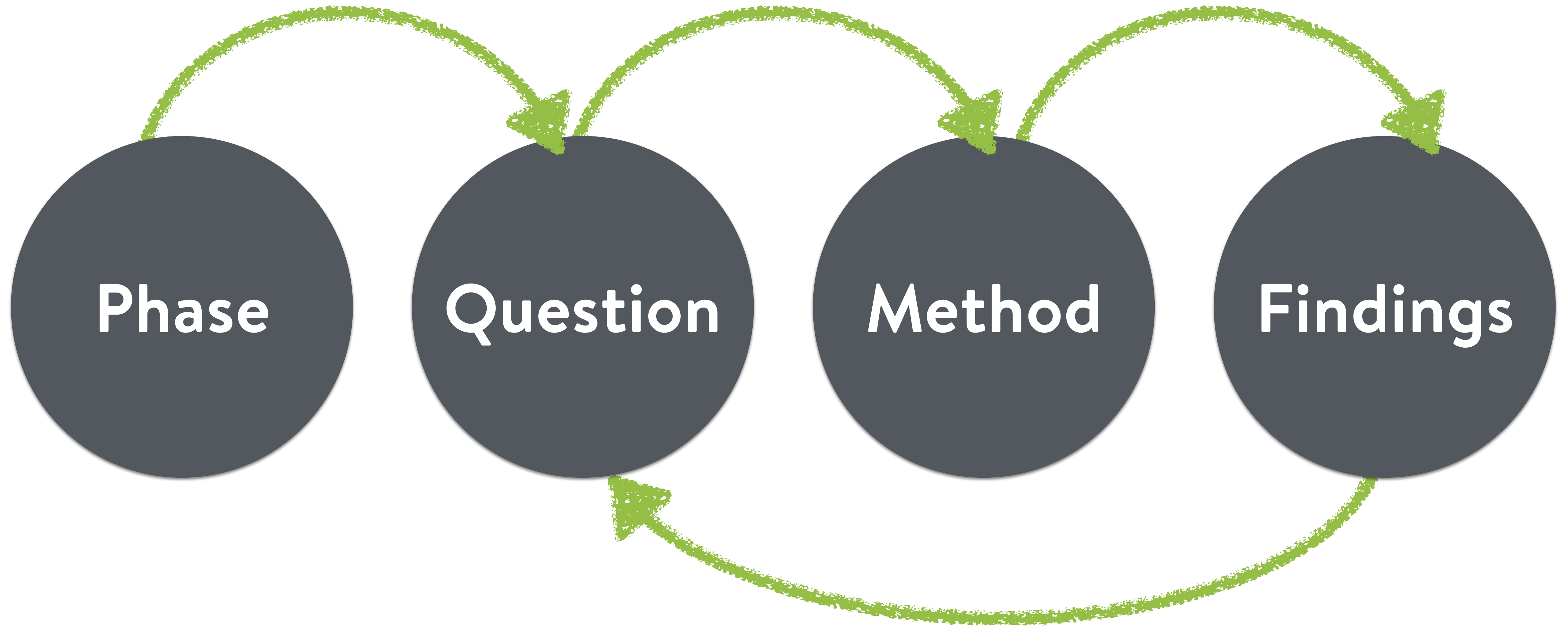
| Comparison | | Confidence | Rel. Increase |
|------------|-----------------------------|------------|---------------|
| control | converts higher than inline | 69% | -- |
| control | converts higher than link | 83% | -- |
| inline | converts higher than link | 68% | -- |

| Group | Conversion | Total | Observed rate |
|---------|------------|-------|---------------|
| control | 3,347 | 7,095 | 47.17% |
| inline | 3,227 | 6,900 | 46.77% |
| link | 3,167 | 6,830 | 46.37% |



SO HOW DO WE CHOOSE
THE RIGHT TECHNIQUE?





QUESTION 2:

When do quantitative data and qualitative UX research best complement each other?

- a) During the early stages of a project
- b) During the later stages of project
- c) Both

Getting shit done



Idea



Think



Explore



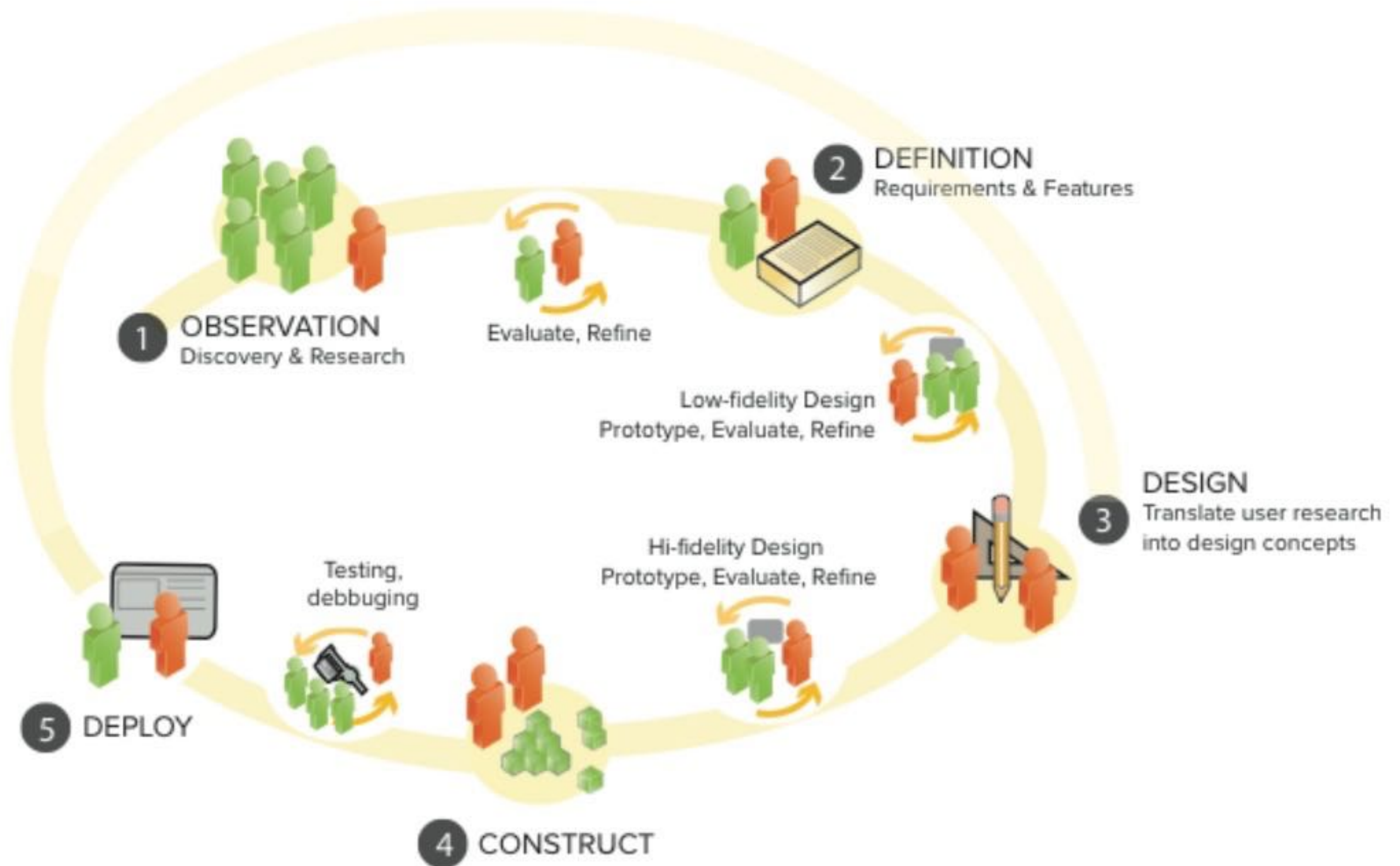
Build



Launch



Tweak



Getting shit done

Questions:

- What potential problems might we solve?
- How might we gather context on the problem?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative

- Existing research
- Observations, interviews, diaries, internal workshops

Quantitative

- Existing data
- Establishing facts, confirming/disproving assumptions

Getting shit done

Questions:

- What are the root problems?
- What are the biggest challenges we might focus on?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative:

- Profiles/segments/personas
- Interviews, co-design/participatory workshops

Quantitative:

- Quantify how big are the segments that would benefit from this product

Getting shit done

Questions:

- How might we be scrappy and effective when testing assumptions and hypotheses?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative:

- Lo-fi prototype testing
- Clickable mockups

Quantitative:

- Define success metrics and baseline for those project success metrics

Getting shit done

Questions:

- Can people use what we're building?
- Is what we're building addressing the initial problems and goals?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative:

- High-fidelity usability tests
- Diary studies

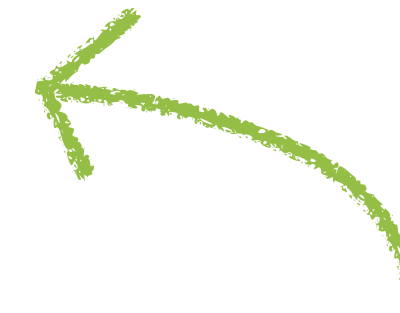
Quantitative:

- A/B tests,
- Instrumentation and reports setup
- Beta testing

Getting shit done

Questions:

- Are people using it in the way we thought they would?
- Did we successfully solve the problem we identified?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative:

- Forums/social media monitoring
- Open-form feedback forms



Quantitative:

- Monitor success metrics
- Populate reports

Getting shit done

Questions:

- What incremental improvements might be worthwhile?
- What revisions should we make to our roadmap?



Idea



Think



Explore



Build



Launch



Tweak

Qualitative:

- Retrospectives
- Post-mortem
- Analysis of support tickets



Quantitative:

- More A/B tests and experiments
- Monitor reports

QUESTION 3:

How might you map the various stages of Shopify's GSD process to your own course project?



| Phase | Question | Qualitative | Quantitative |
|----------------|---|--|--|
| Idea | What potential problems might we solve? | Existing research, observations, diaries | Establishing facts, confirming assumptions |
| Think | What are the root problems? | Interviews, co-design/ participatory workshops | Quantify segments |
| Explore | How might we test assumptions | Lo-fi prototype/mockup testing | Define success metrics, measure baselines |
| Build | Can people use what we're building? | High-fidelity usability tests, diary studies, beta tests | A/B testing, instrumentation, reporting |
| Launch | Are people using it in the way we thought they would? | Forums/social media monitoring | Monitor success metrics, more reporting |
| Tweak | What improvements might be worthwhile? | Analysis of support tickets, retrospective | More A/B tests, more reporting |

WE ACTUALLY CALL THIS
MIXED METHODS RESEARCH.



Mixed methods research

*“An approach to research in the social, behavioural, and health sciences in which the investigator gathers **both quantitative (close-ended) and qualitative (open-ended)** data, **integrates the two**, and then draws interpretations based on the **combined strengths of both sets of data** to understand research problems.”*

[Creswell, 2015]

Strengths

Weaknesses

Qualitative

Provides detailed perspectives
Captures the voices of the participants
Captures complex phenomena
Is based on the views of the participants,
not the researcher
Appeals to people's enjoyment of stories
Adapts to context

Has limited generalizability
Studies few people
Is subject to the researcher's biases
Is time-intensive when it comes to data
collection and analysis

Quantitative

Draws conclusions for large numbers of
people
Is relatively efficient when it comes to data
collection and analysis
Investigates relationships within data
Appeals to people's preference for
numbers

Is impersonal
Does not record the words of the
participants
Provides limited understanding of the
context of participants
Is largely researcher driven

SO... WHAT DOES ECOMMERCE
HAVE TO DO WITH MUSIC?





The same rules apply...

- There is no neat, linear, “one-size fits all” solution
- It’s not about following a process to the letter
- It’s about understanding the process well enough to be able to adapt it to different contexts
- For each context: determine **what** to evaluate and **how** to evaluate it

THANK YOU!

DALIA@SHOPIFY.COM



Interested in an internship at Shopify?

- Keep an eye out on shopify.com/interns
- We hire for our four Canadian offices: Montreal, Toronto, Ottawa, and Waterloo
- Posts for summer internships will go out in January
- “Developer intern” is for any RnD development disciplines: data engineering, data analytics, infrastructure, front-end development, backend development, security, and mobile
- UX roles are posted separately