

Understanding Collaborative Practices and Tools of Professional UX Practitioners in Software Organizations



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DESIGN &
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ALLEN
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W

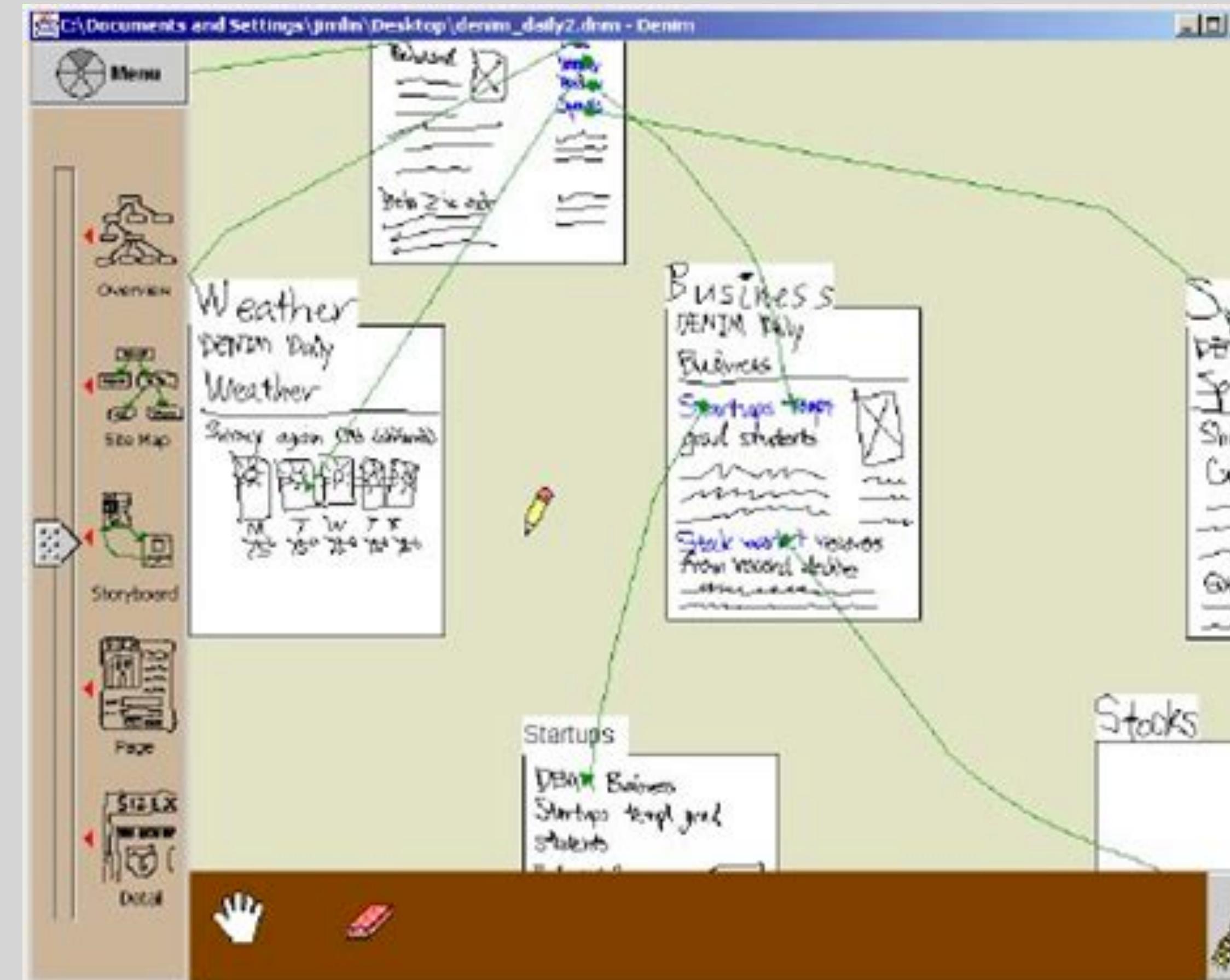
DUB DESIGN
USE
BUILD



Social
Futures
Lab

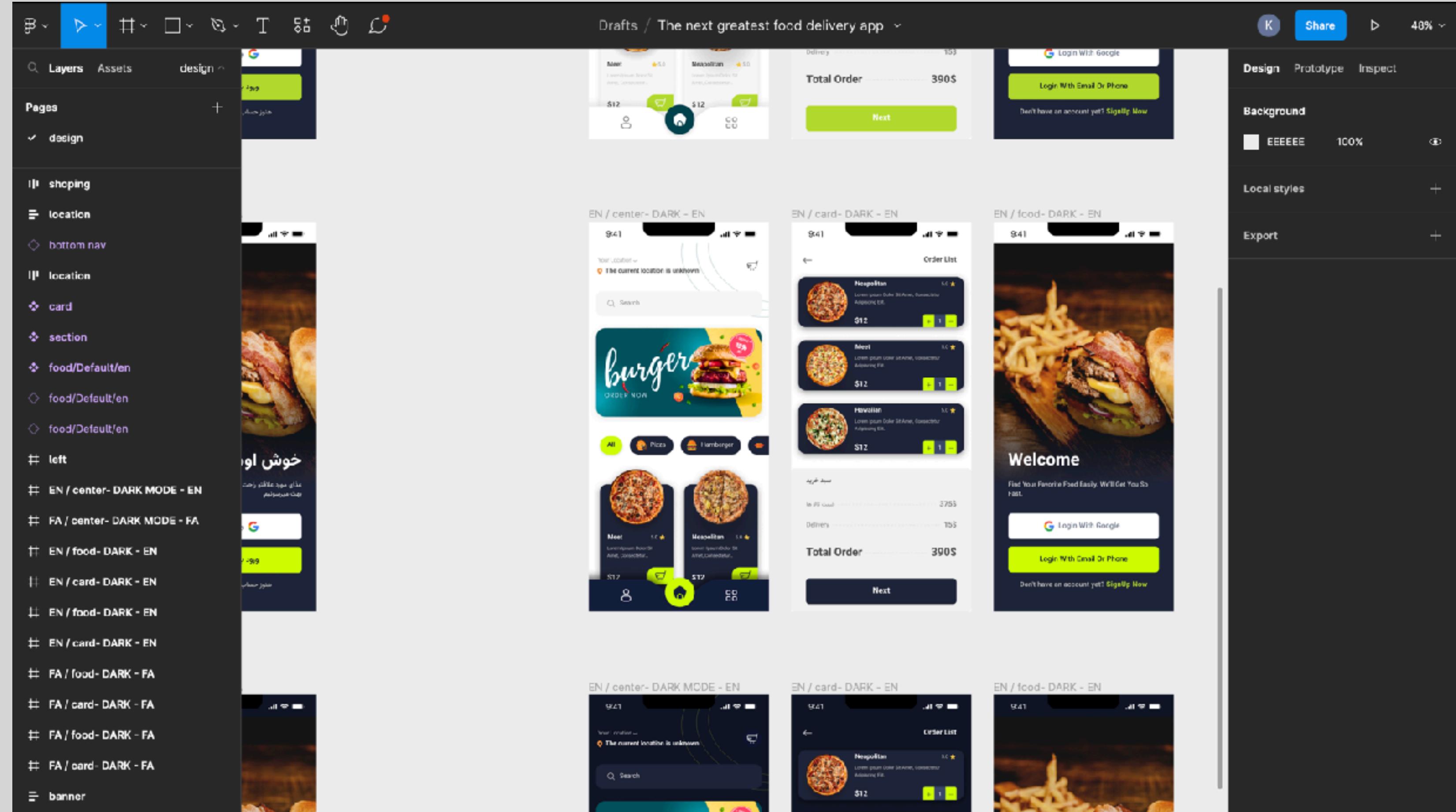
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This is a design tool



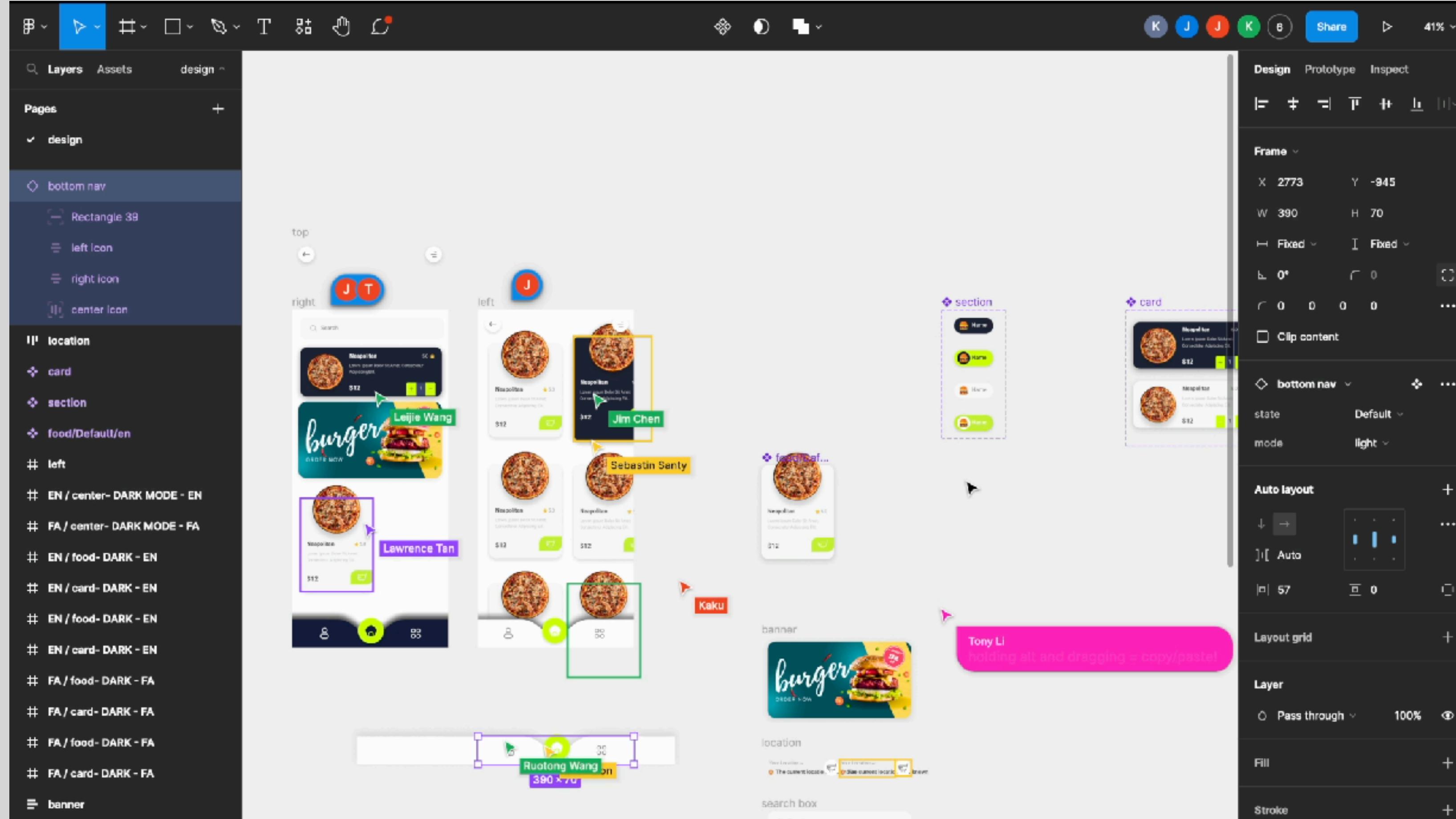
Lin et al. DENIM: An Informal Tool for Early Stage Web Site Design.
CHI EA 2001.

This is a modern design tool



Figma, 2023

UX has become a collaborative practice

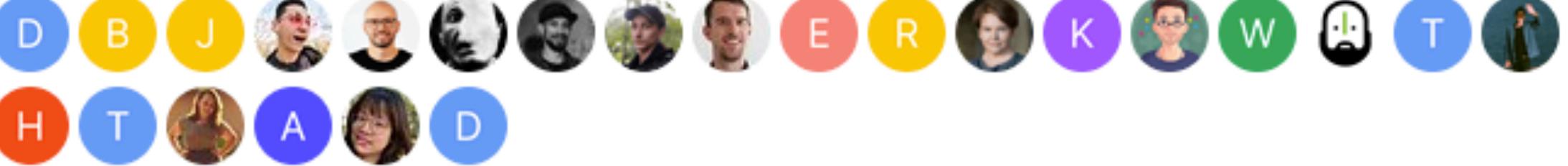


Figma, 2023

...but there are pitfalls

Created **D Feb '21** Last Reply **1d** Replies **64** Views **11.7k** Users **46** Likes **370** Links **9**

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There are **64** replies with an estimated read time of **9 minutes**.

 **Summarize This Topic**

via Figma's Community Forum

Session: Design - Supporting Collaboration **CSCW 2017, February 25–March 1, 2017, Portland, OR, USA**



Design Breakdowns: Designer-Developer Gaps in Representing and Interpreting Interactive Systems

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ABSTRACT
Professional interaction designers and software developers have different trainings and skills, yet they need to closely collaborate to create interactive systems. We conducted three studies to understand the mismatches between their processes, tools and representations. Based on 16 interviews, we found that current practices induce unnecessary rework and cause discrepancies between the original design and the implementation. We identified three key *design breakdowns* where designers omitted critical details, ignored the presence of edge cases or disregarded technical limitations. We next observed two face-to-face meetings between designers and developers. We found that early involvement of the developer helped to mitigate potential design breakdowns but new ones emerged as the project unfolded. Finally, we ran a participatory design session with two designer/developer pairs. Both pairs had difficulty representing and communicating pre-existing interactions. Creating complete interaction descriptions required iterating from individual examples to rule-based representations. We conclude with implications for designing collaborative tools that facilitate the designer's ability to express and the developer's ability to implement complex interactive systems.

Author Keywords
Designer-Developer Collaboration; Design Breakdowns; Shared Artifacts; Collaborative Prototyping Tools.

Designers and developers of interactive systems have different backgrounds and skills, and focus on different aspects of the design process [18]. Designers are trained to communicate visually: They use graphical editors, e.g. Adobe *Illustrator* and *Photoshop*, to create “static design documents” [24] such as wireframes and mockups. They prioritize visual appearance and interaction behavior [6] over the rules and data structures that govern the software. By contrast, developers are trained to work with abstractions: They use text editors and Integrated Development Environments (IDEs) to create functional systems. They prioritize the translation of design documents into implementable formats over the details of visual design and user interaction.

Designers and developers often work independently, requiring a hand-off phase for turning static design documents into working code. Although a number of collaborative prototyping tools have emerged that attempt to bridge this gap¹, the transition between design and implementation is poorly understood.

Our work seeks to uncover the problems faced by designers and developers as they collaborate, with a particular emphasis on the representation, communication and interpretation of

Maudet et al., CSCW 2017

4 areas of investigation

1.

Collaboration throughout the design process

2.

Tools used and collaboration strategies within them

3.

Handoffs to developers for implementation

4.

Collaborative management of design systems

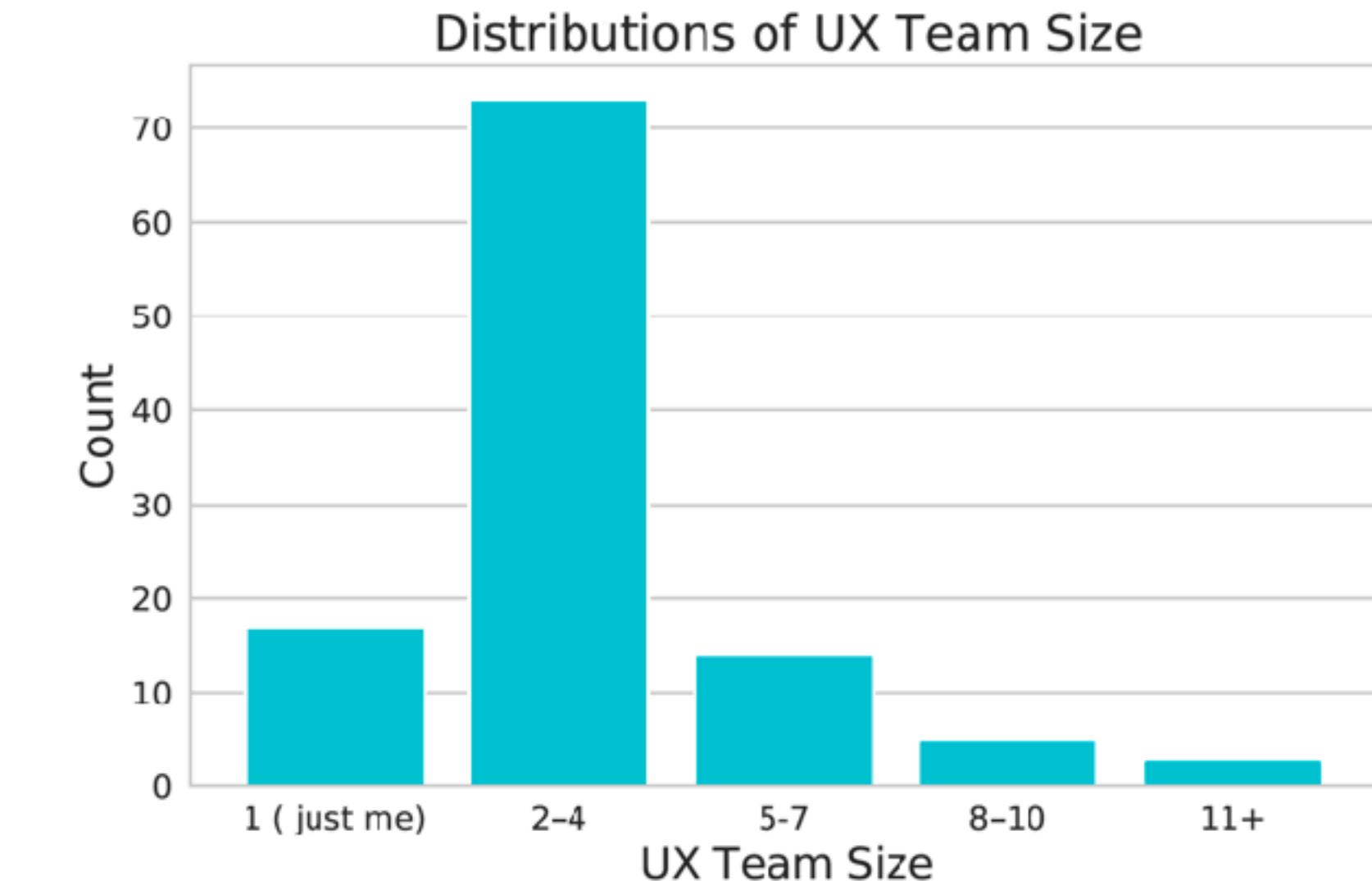
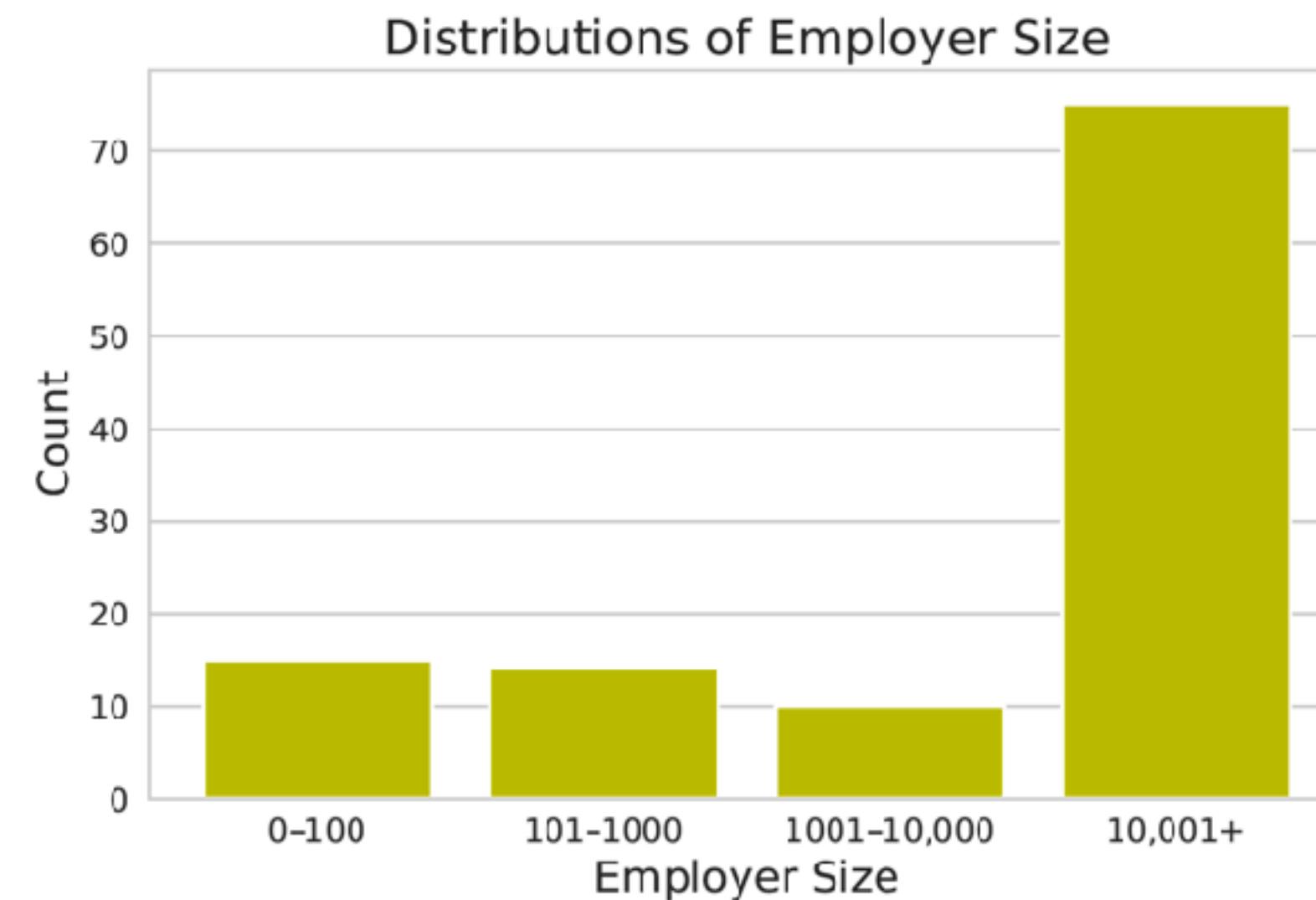
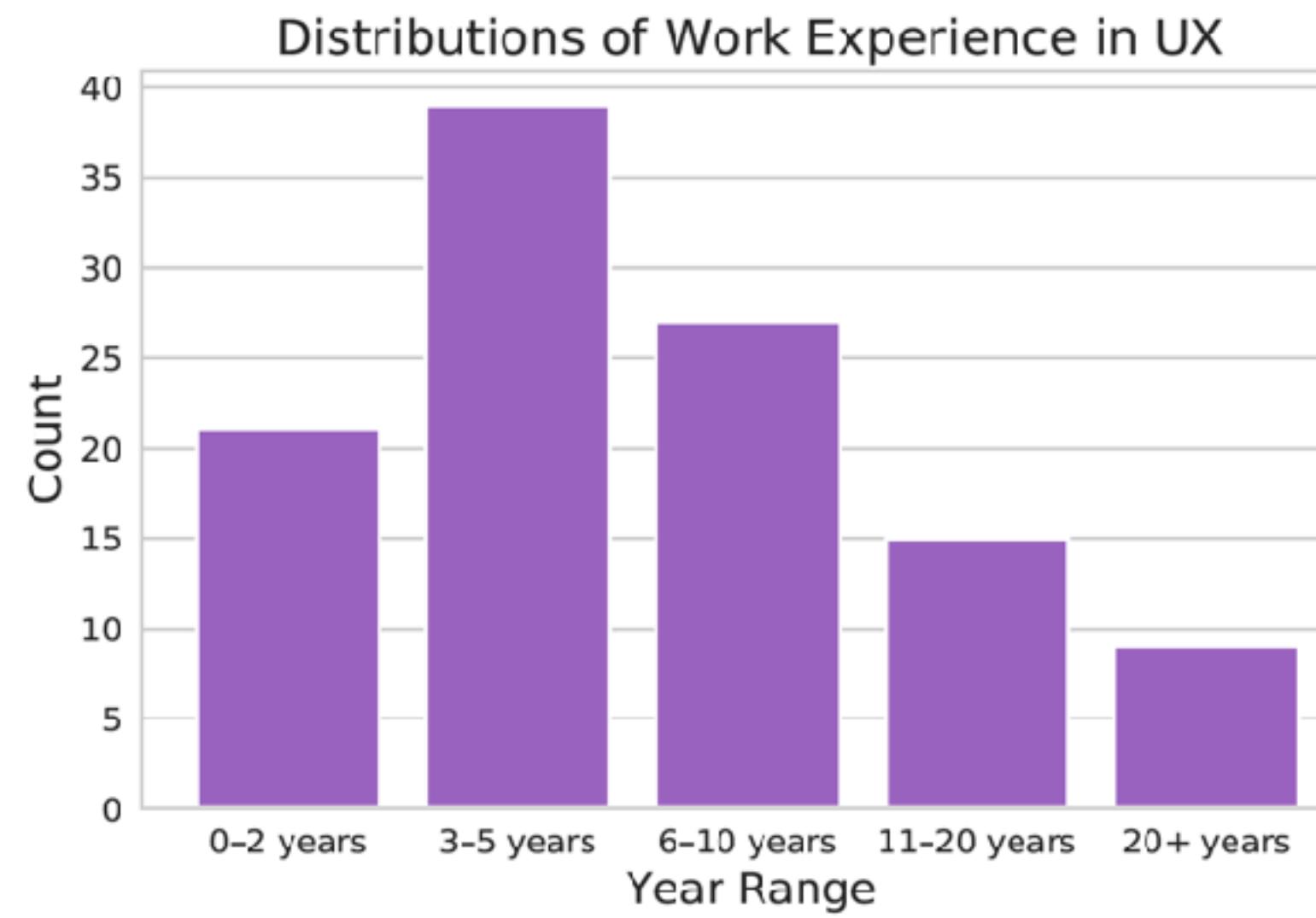
Survey study with 114 participants

59% female

39% male

1% non-binary

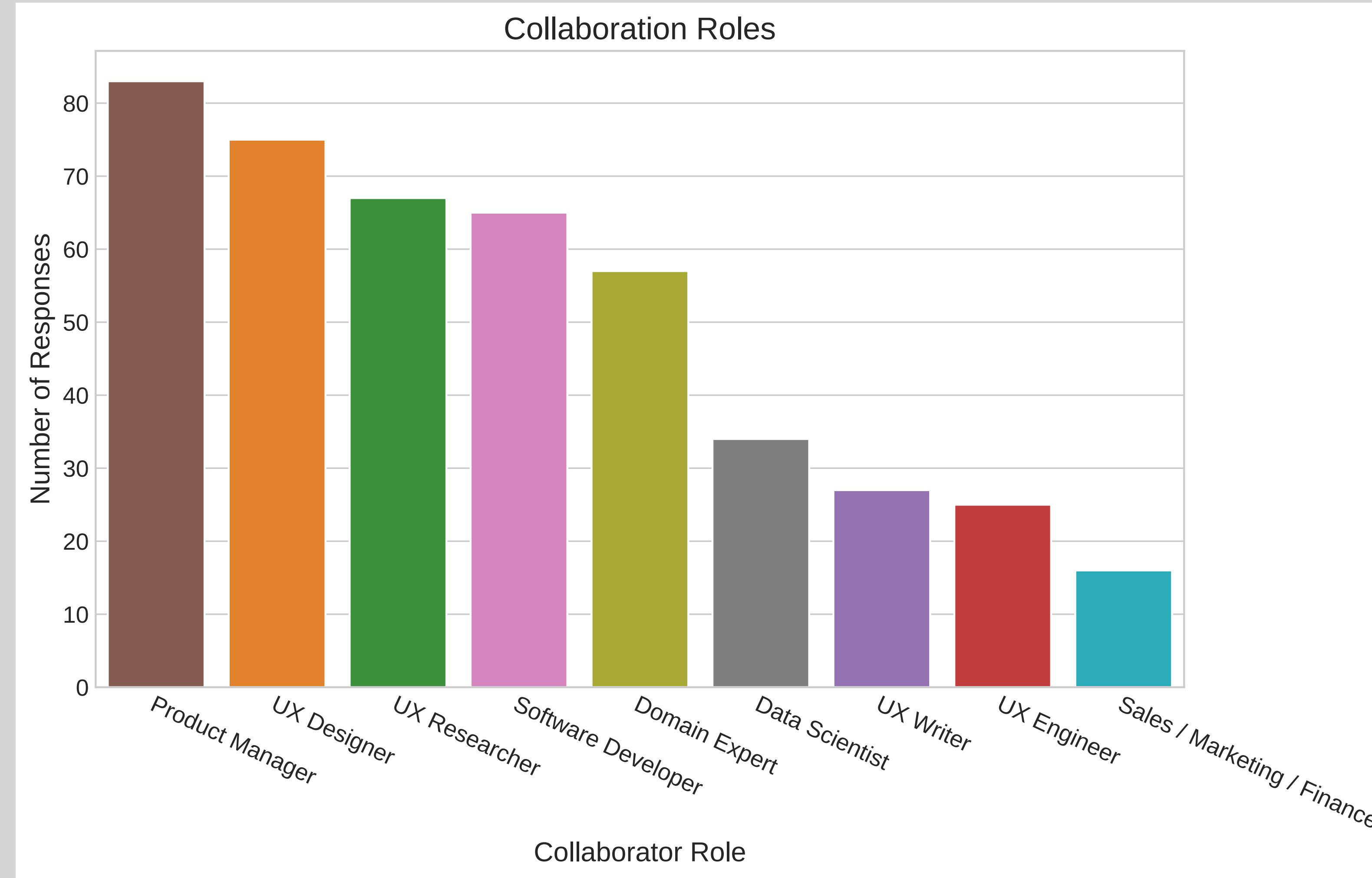
1% undisclosed



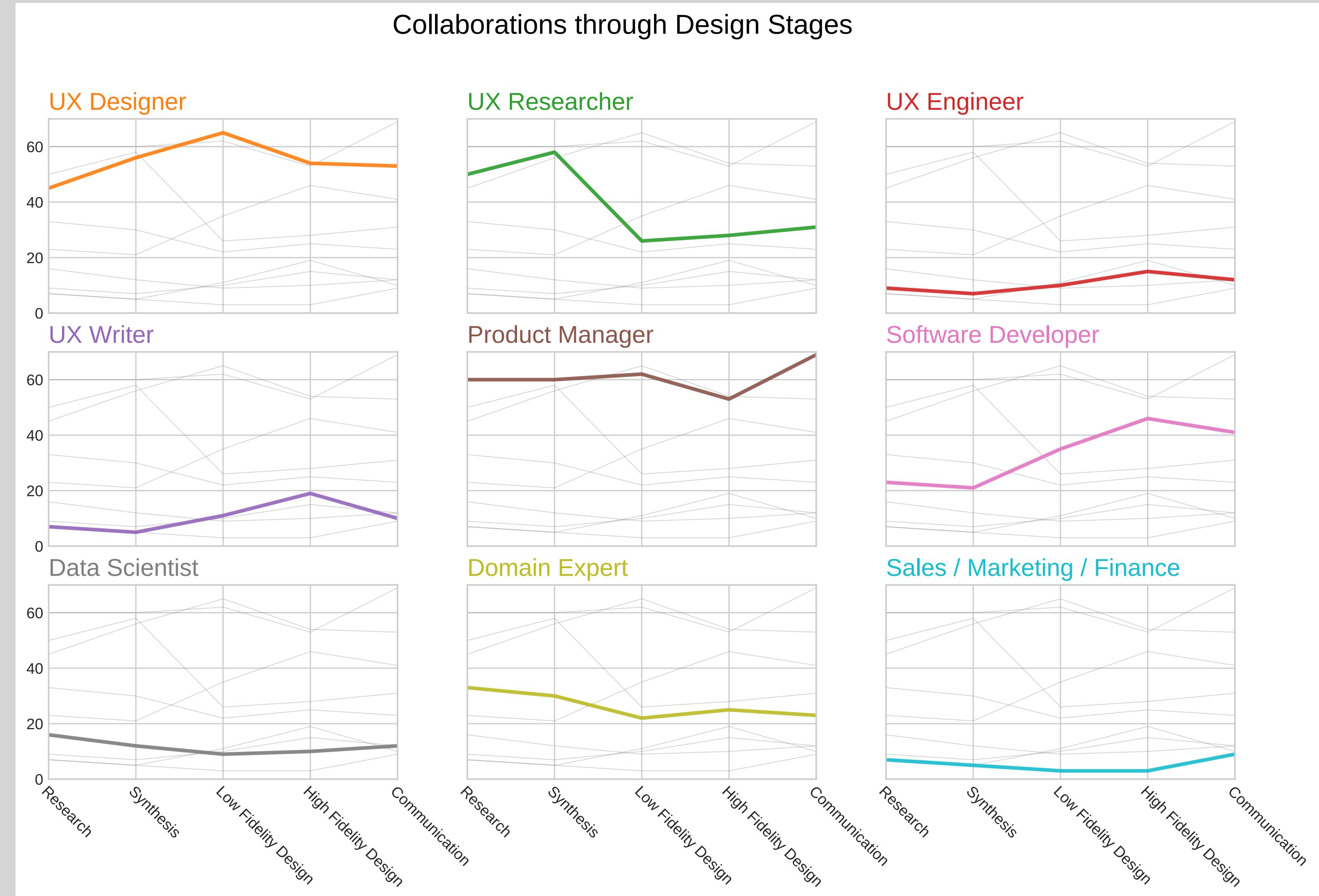
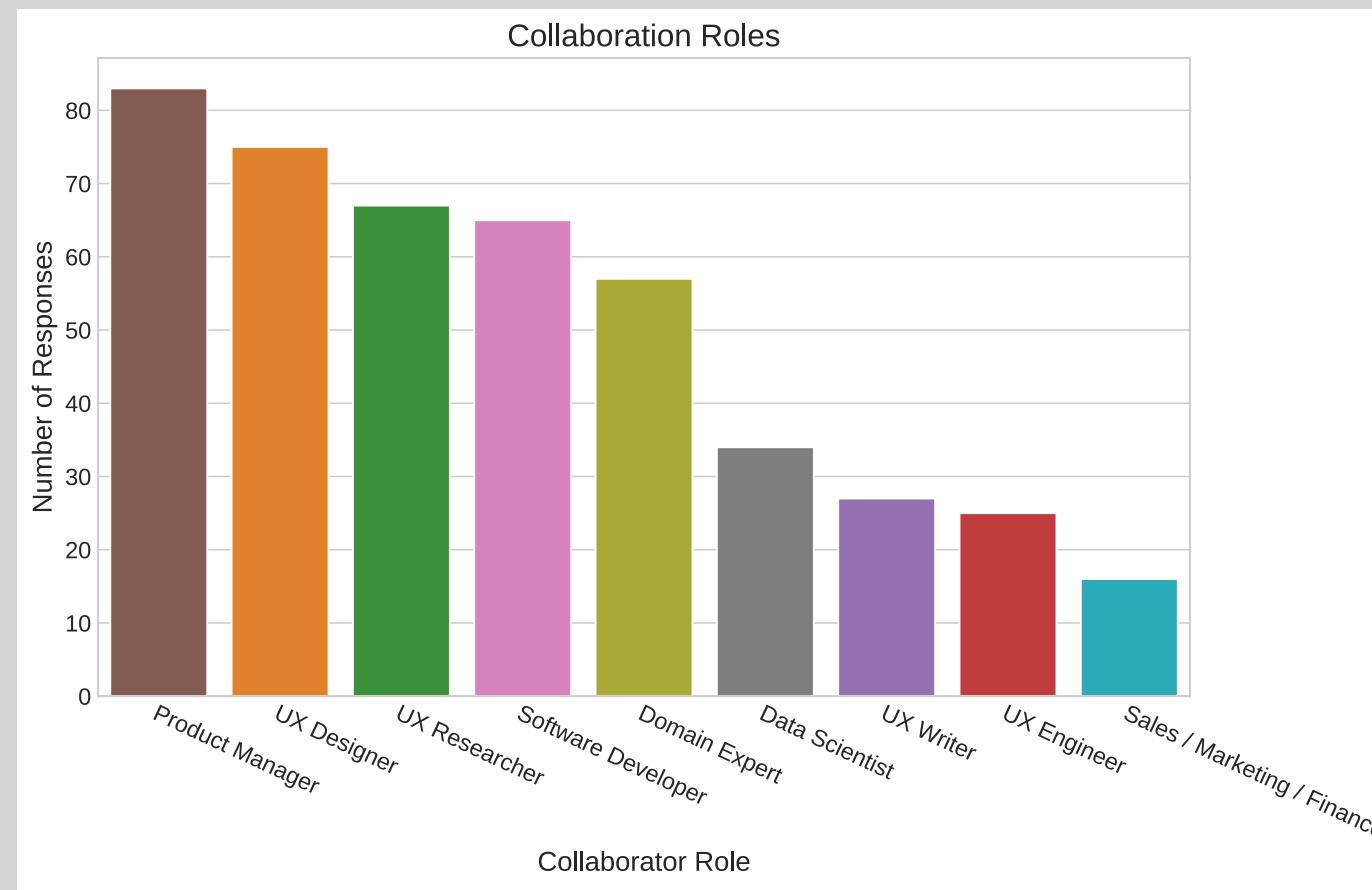
RQ1

Who do UXPs collaborate with at each stage of the design process?

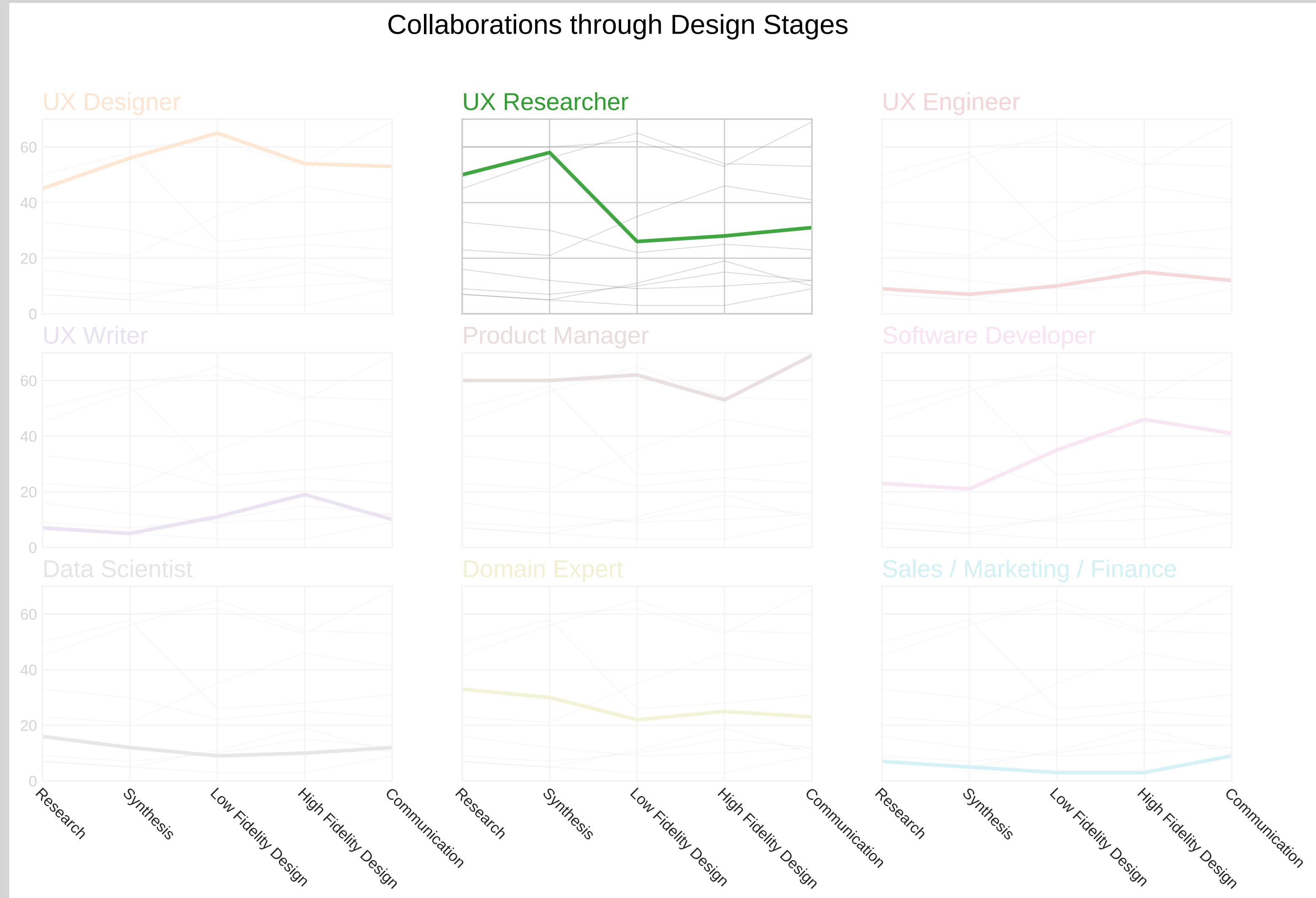
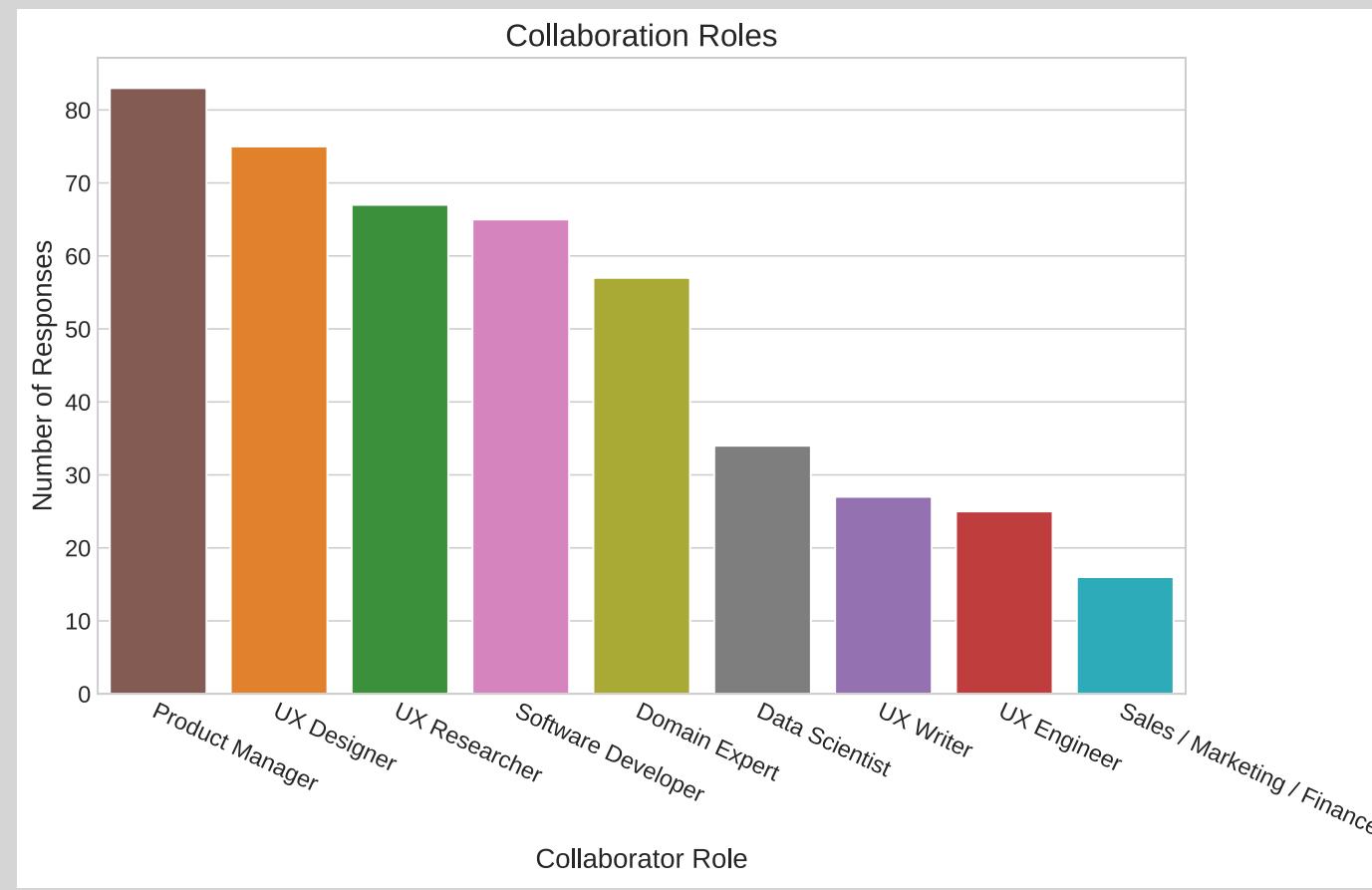
UXPs collaborated with a wide range of roles



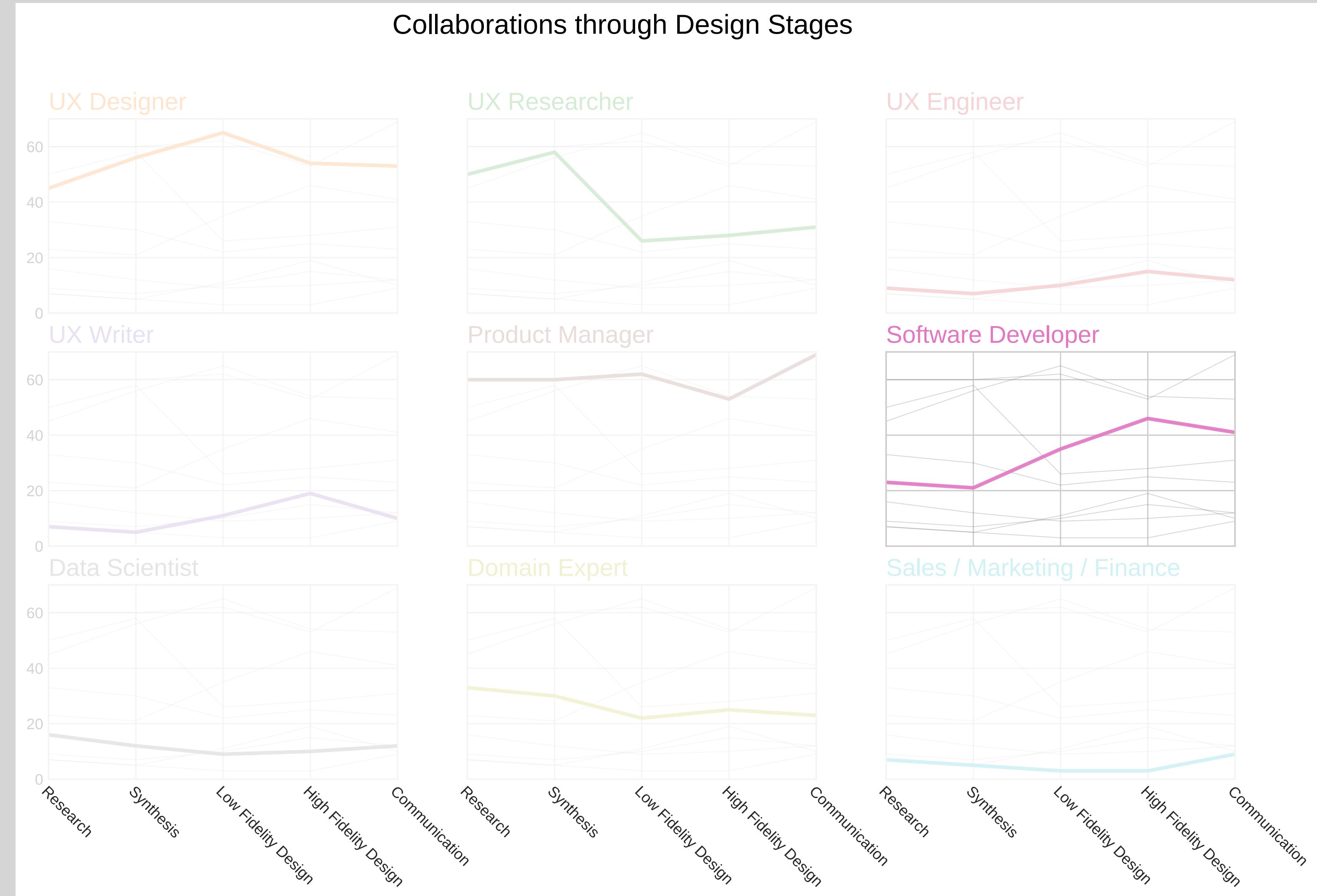
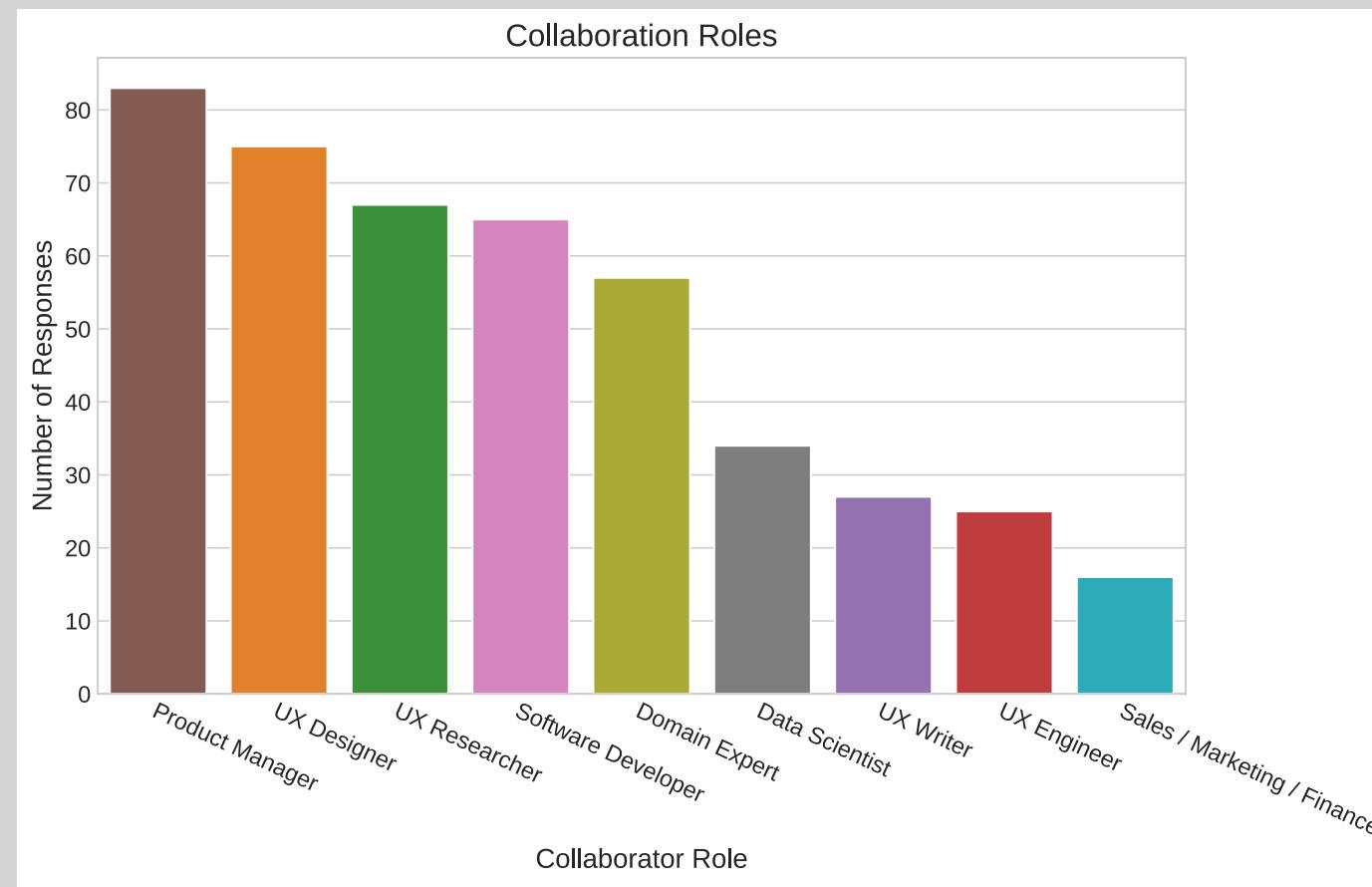
Collaboration broken down by role + design stage



Collaboration broken down by role + design stage



Collaboration broken down by role + design stage



How did collaborations with non-UXPs start?

63%

of collaborations initiated by UXPs (n=108)

28%

initiated by non-UXPs

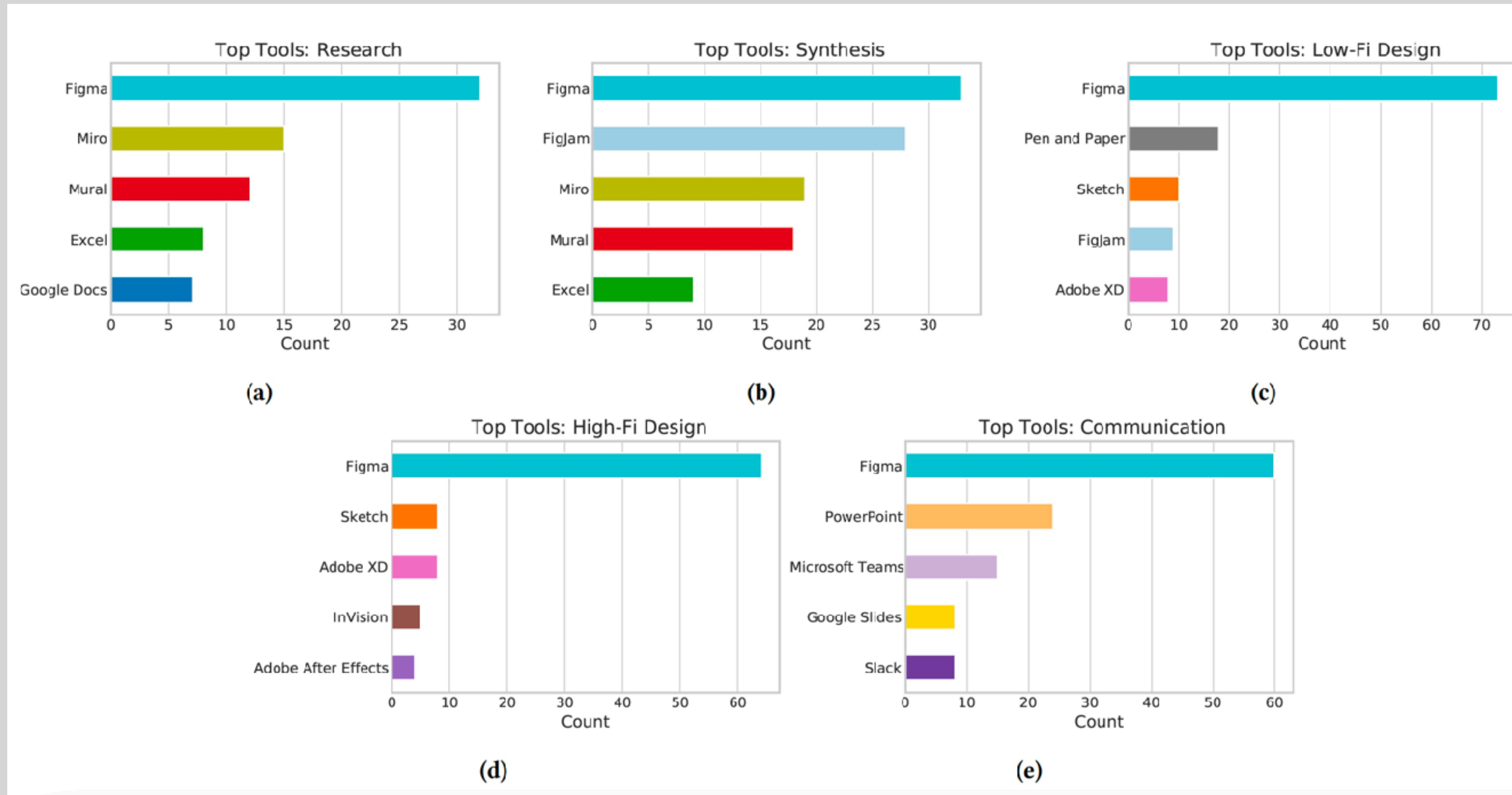
9%

combination of both

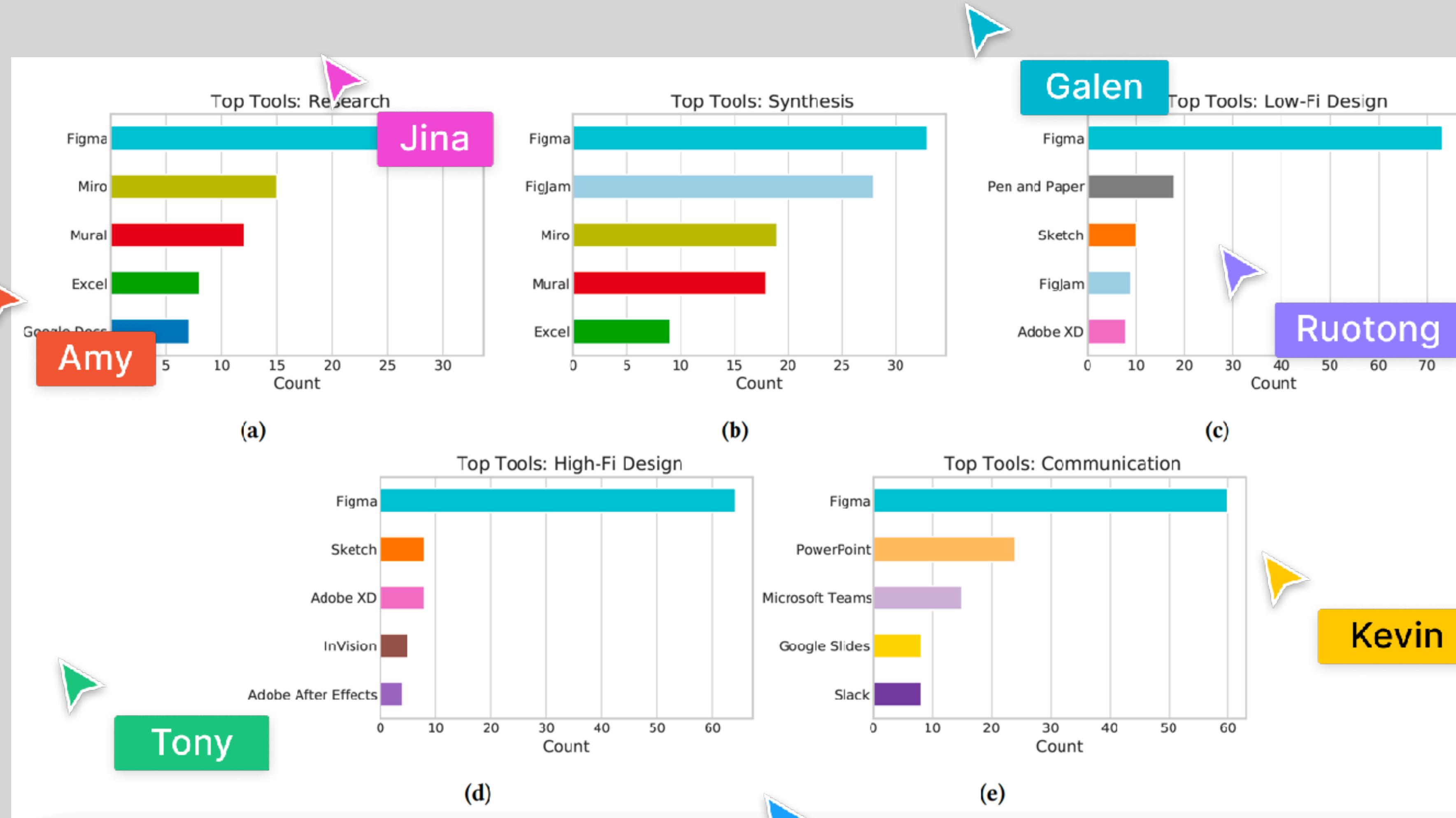
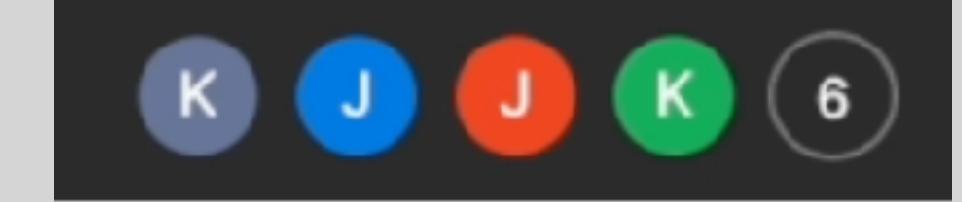
RQ2

What tools and tool-based collaboration strategies are UXPs using throughout their workflows?

Figma dominated as an all-in-one tool



Figma dominated as an all-in-one tool



Strategies varied within the same tool

Synchronous

Authors and Editors

“Usually one person generates the initial output, then others add on and/or comment on refinement.”

— Design Lead

Asynchronous

Comments, Annotations, History

“Comments are usually the method for others’ input and [they’re] helpful when working with others in different time zones.”

— UX designer

“I walk through the [version] history in my presentation”

— Lead Designer

Handoff

Process by which UXPs “hand off” their design work for code implementation.

RQ3

What practices and challenges arise when UXPs hand off their work to software and/or ML developers?

Information may easily be overshared

*“With Figma you can point someone to a specific frame but they can just **zoom out and access every other page or frame** in the entire file which often leads to **confusion and frustration.**”*

— UX Design Manager

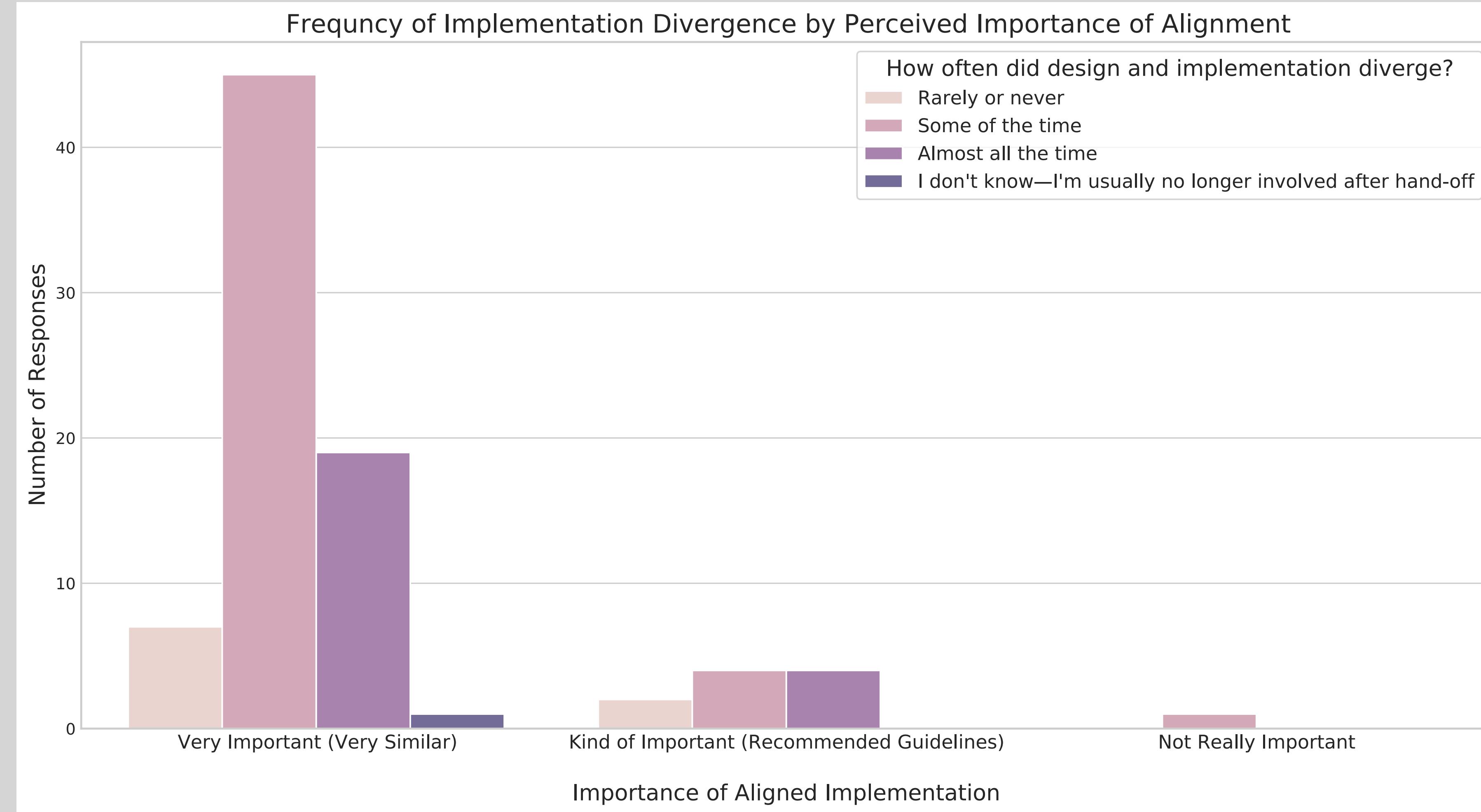
*“I will write comments in **hot pink** on the screen so it is obvious that it is not part of the UI. I do this because you have to **go to comment mode** in Figma to see comments, [which is] easy to miss.”*

— Lead UX Designer

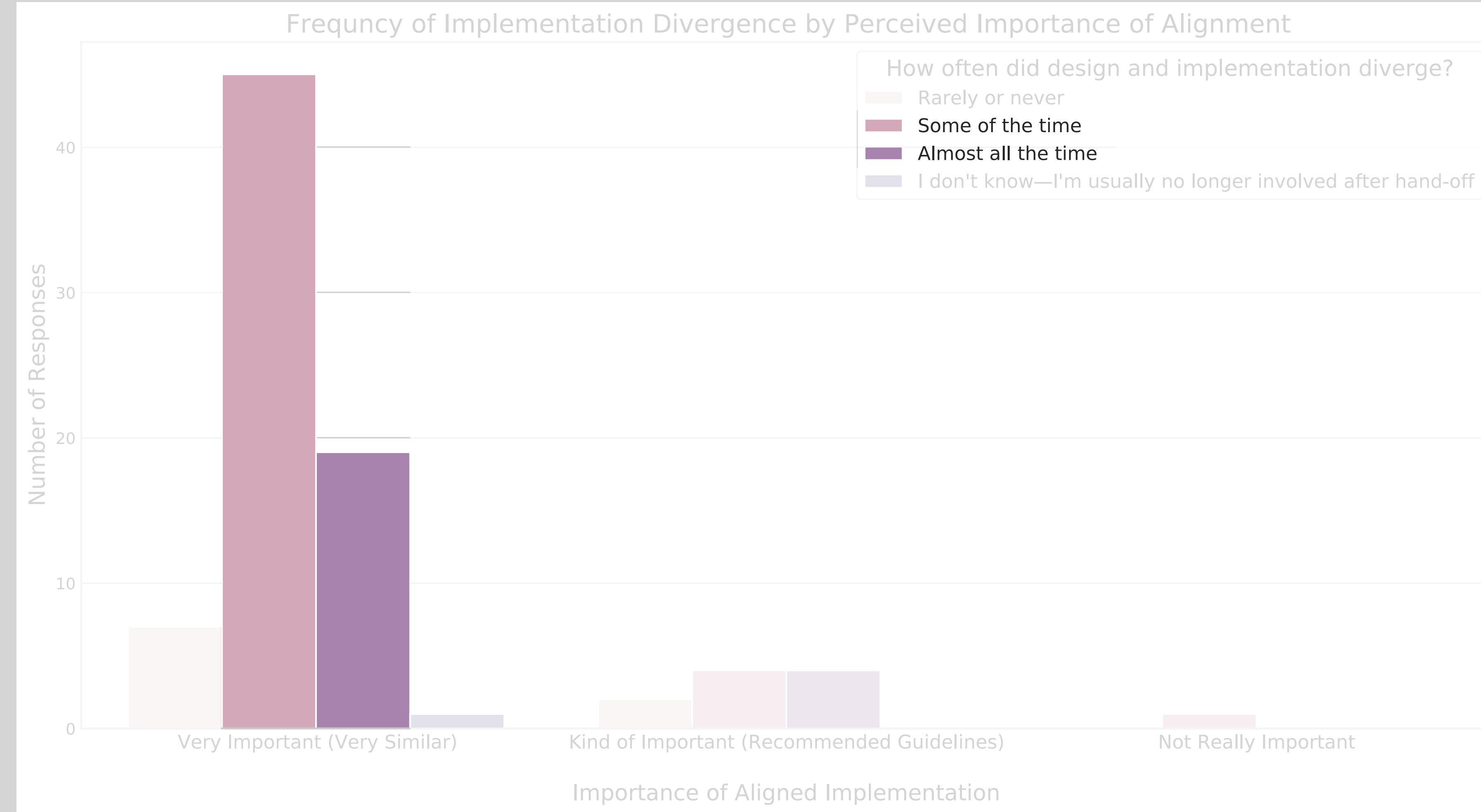
Design-development divergence

When the resulting implementation diverges
from the original designs

Divergence was common but undesired



Divergence was common but undesired



Divergence burdened UXPs

59%

of UXPs had to change designs to match implementation (n=87).

10%

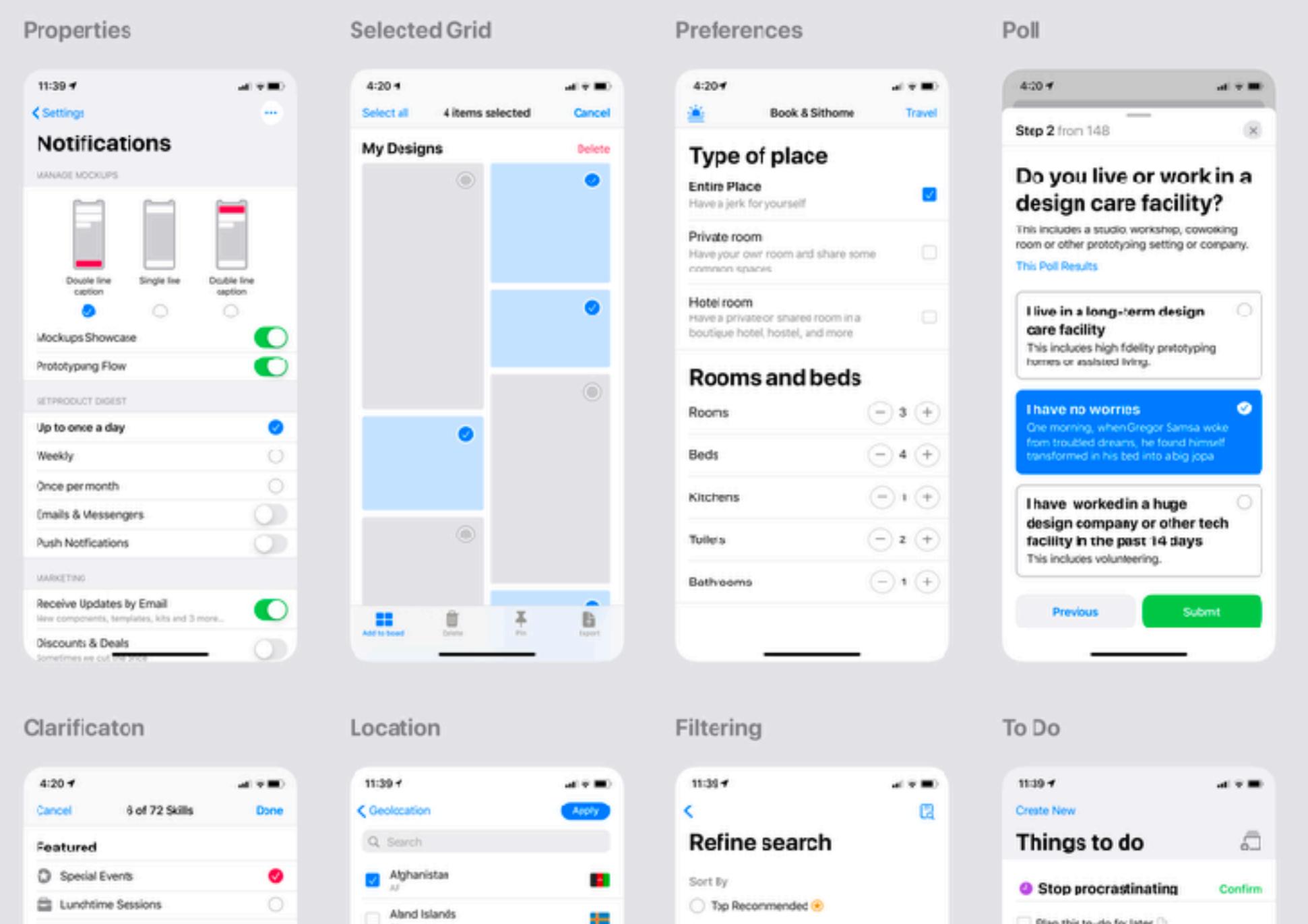
had to discard their designs entirely to start over using screenshots.

RQ4

What are UXPs' current expectations and practices around design systems and reuse in collaborative tools?

What are design systems?

Selection Patterns (Light)



Apple Human Interface Guidelines

Design Systems: A Community Case Study

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Abstract
Design Systems are an increasingly popular means for technology companies to improve development efficiency and design consistency across their products. In this case study, we present findings from a community-wide survey ($n=1,513$) and interviews at the Clarity 2019, a design systems conference. Our findings describe the community's evolving perception of what makes up a design system. We describe the members of the community who build and maintain these design systems. Our findings highlight i) the changing definition of design systems, ii) the practice of developing in-house design systems (in place of adopting an existing one), and iii) the role of Design Systems in promoting collaboration between the Design and Engineering functions of a company.

Author Keywords
Design Systems; User Interface; Interaction Design

Yew et al. CHI 2020 case study.

Reuse was both prevalent and expected

82%

Expected their work to be reused by others (n=95).

71%

Reported using designs from others in their organization.

Managing design systems collaboratively is tricky

Ambiguous ownership

*“We all use it if it's there, but since **nobody has ownership**, it may fail to have new assets or stylings.”*

— Product Designer

Easily outdated

*“We ended up using **3 different styles of sliders**—ones from the ‘old’ design system, ones from the ‘new’ design system, or custom made ones.”*

— Product Designer

Limited by rigidity

*“As we move through different, upgraded tools for designing, the design systems have to be **recreated or upgraded each time.**”*

— Senior UX Designer

Implications

Governance handbook for design systems

Governance handbook for design systems



Moderator
assignment for
component review



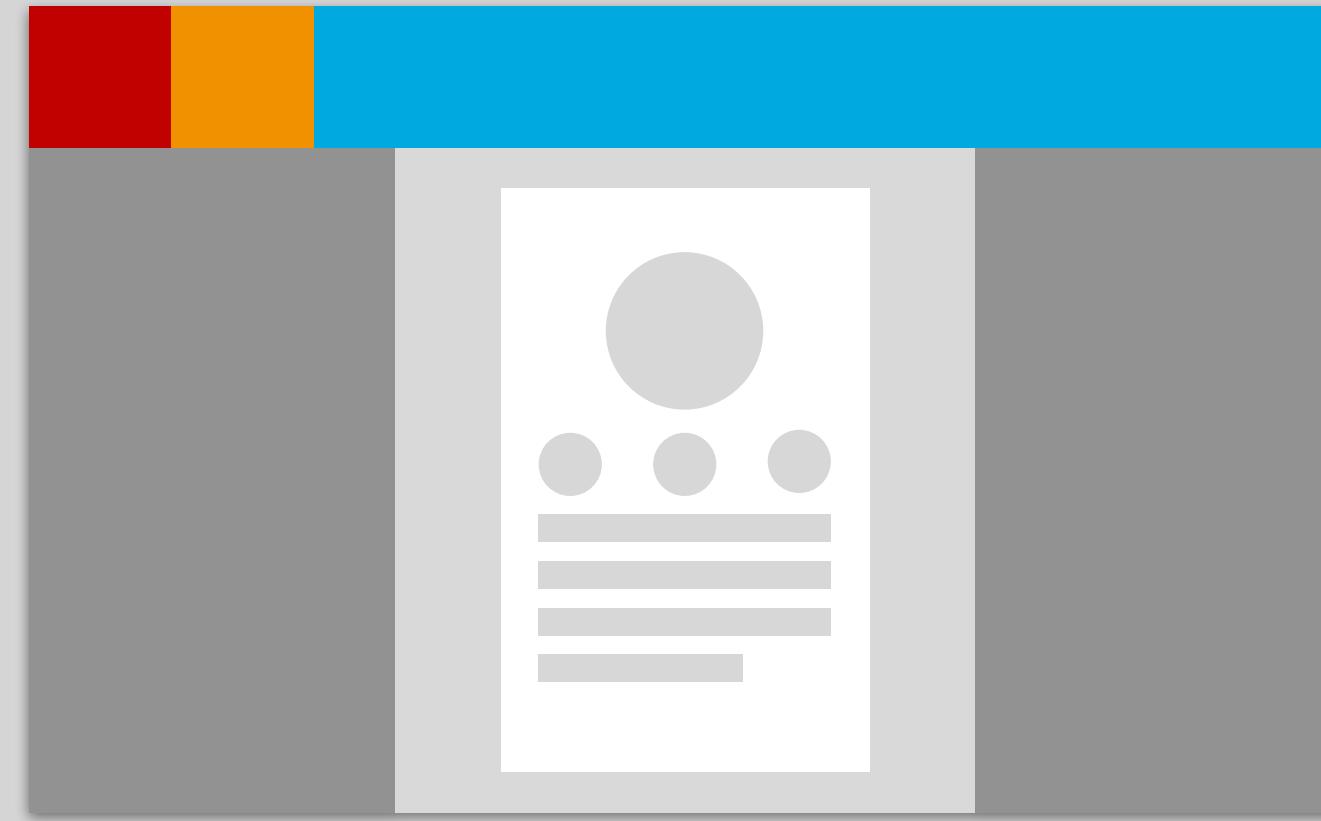
Guidelines to
resolve system
inconsistencies



Procedures for
adding new
components

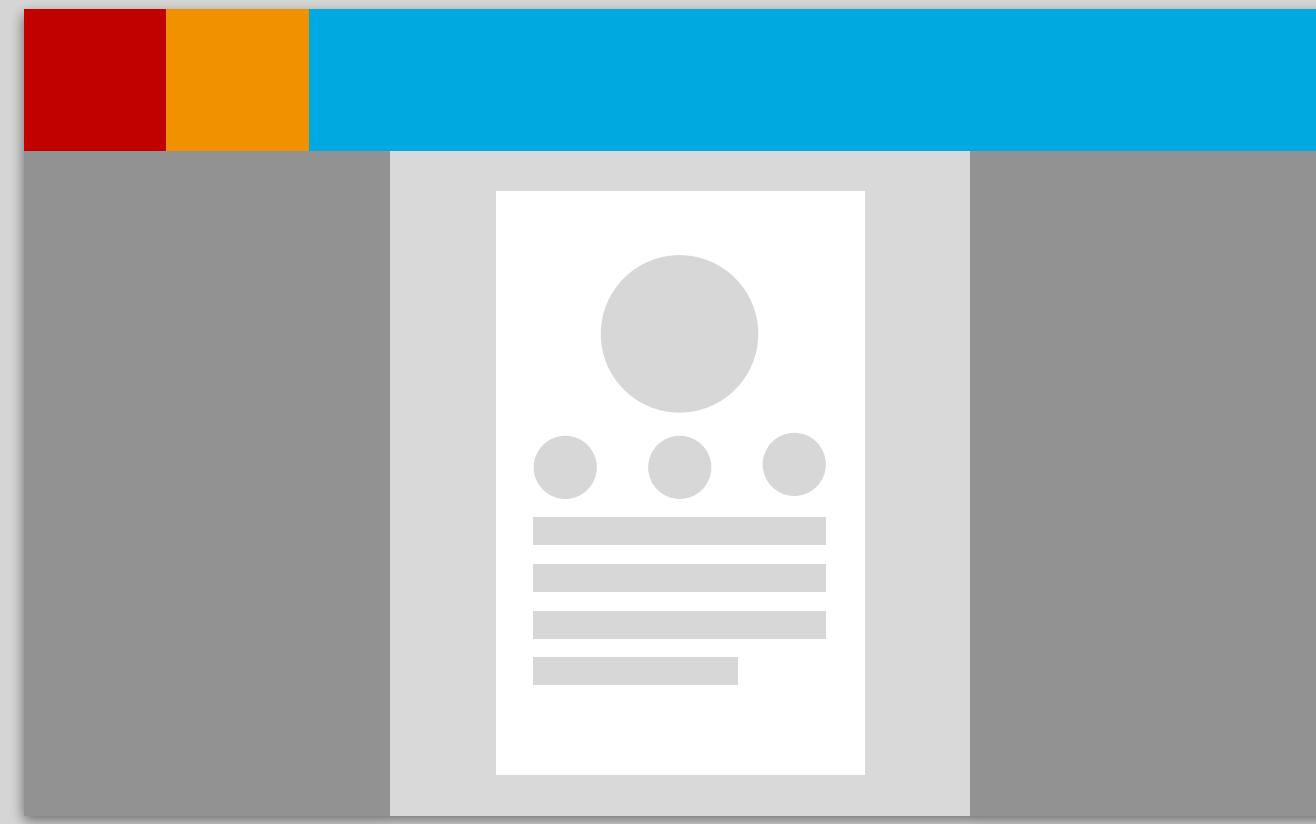
One tool, multiple collaboration modes

One tool, multiple collaboration modes



Default mode

One tool, multiple collaboration modes

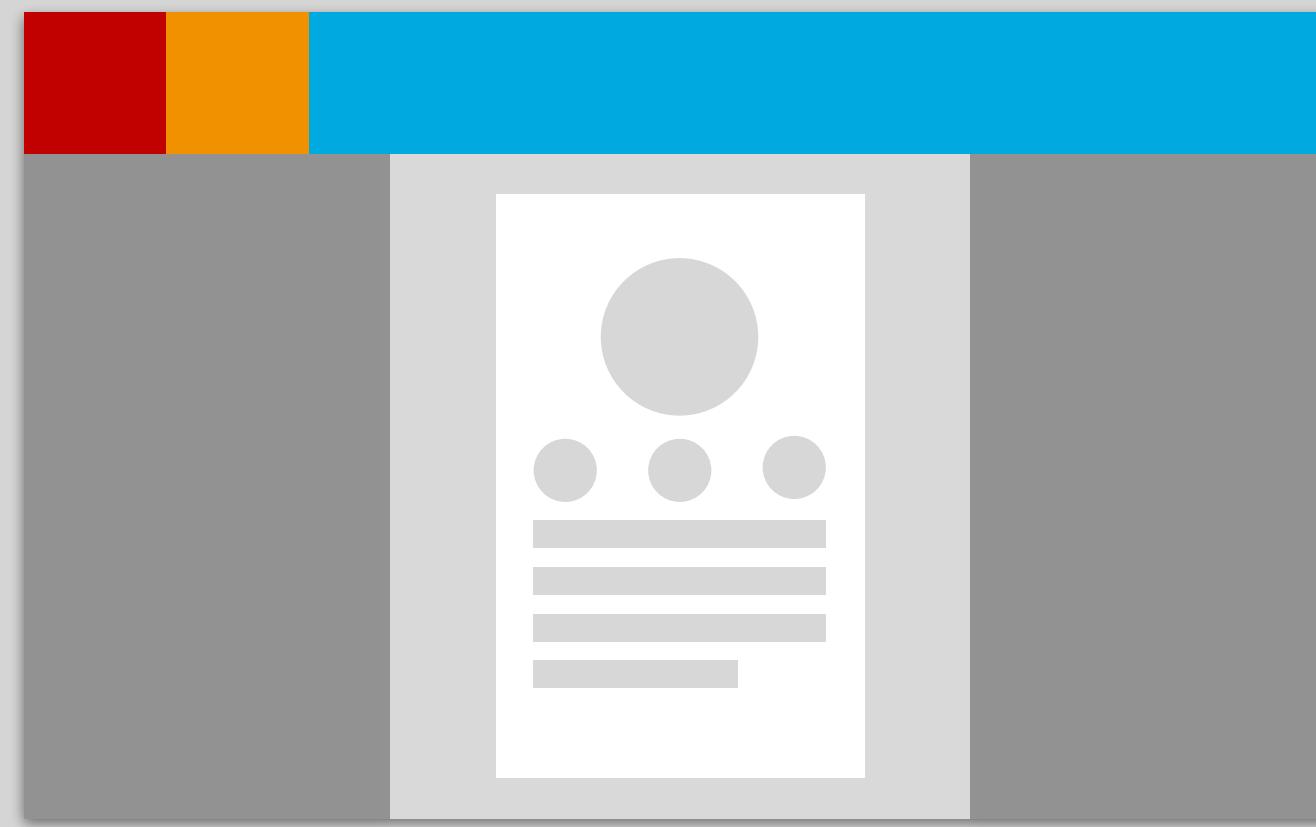


Default mode



Developer mode
with code inspector

One tool, multiple collaboration modes



Default mode



Developer mode
with code inspector



Writing mode
with word processing

Limitations and future work

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Only surveyed UXPs, have yet to hear from other collaborators.

For future work: conduct study with close collaborator(s) to hear perspectives from the other side.

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Only surveyed UXPs, have yet to hear from other collaborators.

For future work: conduct study with close collaborator(s) to hear perspectives from the other side.

Only focused on software organizations

For future work: investigate UX collaboration in non-profits or design agencies.

Thanks!

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- Collaboration is ubiquitous in UX.
- Brings about many benefits, but does not solve all problems and may even create new ones.
- Future tools and practices can aim to mitigate collaborative friction.

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