Designing User Experience Design:

Determining the Role of UX in Software Organizations

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Abstract

There are many academic and practitioner definitions of user experience (UX), but there is not presently a universally accepted definition of UX either theoretically or practically. The purpose of this study was to help software teams define and develop UX within their own organizations. Affinity clusters were used to analyze 41 UX job postings from 36 Utah-based software companies in order to develop an understanding of what was expected of UX employees, based on the skills, roles, and responsibilities that were listed in job postings. Thirty-nine UX professionals participated in bull's-eye-diagramming and buy-a-feature activities, which were utilized to compare and contrast the current and ideal practice of UX. The study culminated with the creation of a design-thinking workshop that might help UX managers, designers, and researchers apply design-thinking methods to effect positive changes in UX design practices and processes in their organization. Two UX designers and two UX managers participated in trial runs of the workshop. Throughout the collection and analysis of data, several patterns and themes emerged. UX teams considered research to be a very important part of UX design, yet results showed that the amount of time actually spent on research was far less than ideal. Collaboration and communication were among the most important skills and responsibilities. UX managers, designers, and researchers shared similar views regarding the primary responsibilities of UX; however, they held different views regarding the amount of time that should be allocated to various UX responsibilities.

Keywords: user experience, design, design thinking, software

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Designing User Experience Design:

Determining the Role of UX in Software Organizations

The demand for user experience (UX) design in the software industry has exploded over the past decade. In 2014, IBM announced that it would invest more than $100 million to expand its UX consultation practice throughout the world (Wilson, 2014). Though it is unclear what prompted such an abrupt and substantial investment, it is possible that IBM saw reports of success from other key players in the software industry. Amazon's Jeff Bezos invested 100 times more into customer experience than advertising during the first year of business. Airbnb's Mike Gebbia attributes the company's rapid growth to $10 billion to its commitment to UX. Intuit's co-founder, Tom Proulx, is an advocate of creating products that are easy to use; to this end, he is also a pioneer of usability testing (Kucheriavy, 2015).

Some tout that UX design is a new type of business strategy (Hekkert, Mostert, & Stompff, 2003; Kilgore, 2016). However, the concept of design as a business strategy is far from new given that the second president of IBM coined the phrase "good design is good business" in 1973 ("IBM100 - Good Design," 2012). Investments in UX design have undoubtedly been good for some businesses. Kucheriavy (2015) said "companies that invest in UX see a lower cost of customer acquisition, lower support cost, increased customer retention and increased market share" (para. 5). The top 10 corporations leading in experience design outperformed the S&P index with close to triple the returns when compared to their peers. On average, every dollar invested in UX yields a return of $100. Financial reports of the monetary impact of UX on business have compelled many companies to invest in UX even though they may not understand what that means for their organization (Maccarone & Doody, 2016).

Though it is difficult to pinpoint the cause of the phenomenal increase in UX investments, many credit Don Norman with coining the term and popularizing the concept of UX design (Kilgore, 2016; Lamprecht, 2017). Through his famous book, *The Design of Everyday Things*—first published under the title *The Psychology of Everyday Things* in 1988—Norman (2013) helped popularize the concepts of human-centered design and user-centered design. During the early to mid-‘90s, Norman claims to have invented the term “user experience” when he helped set up the “user experience architects” office at Apple (Nielsen Norman Group, 2016).

There has been some criticism that what is now called user experience design is merely a rebranding of human-computer interaction (HCI) or human-centered design (HCD). However, others argue that UX design is much more than just a change of terminology (Hassenzahl, 2008). They suggest that UX design transcends product utility by addressing human emotions, and they feel that due to this more holistic view of design, UX has gained ground as an approach to designing interactive systems (Kaasinen et al., 2015). Though HCI and HCD often touch upon the experiential aspect of design, it is rarely the primary objective of the design process (Kaasinen et al., 2015).

Regardless of whether UX is a reincarnation of HCD or an extension of HCI, the definition and role of user experience within an organization are nebulous at best; at worst, they are downright confusing (Palmer, 2016). The demand for UX designers, which is expected to increase (Palmer, 2016), has given rise to dozens of boot camps that offer UX certificates (Bloc, 2015). Some experienced practitioners suggest that these boot camps perpetuate the nebulous role of UX design by certifying incompetent students who struggle to apply the principles and methodologies of UX in the workplace (Maccarone & Doody, 2016).

It is not uncommon for clients and recruiters to advertise needs for UX design that range from a user interface reflective of their brand, to the organization and simplification of complex information systems and user workflows, to user research, to front-end software development. As a result, this study seeks to understand what software companies expect of UX design and to help define the role of UX in their organizations.

There are many academic definitions of UX in journal articles. There are even more practitioner definitions in blogs and forums, but there is not presently a universally accepted definition of UX. However, the present war of words and tumult of opinions regarding UX has a silver lining. With no universal definition, teams have the opportunity to define the role of UX and prove its value at a local level—within their organizations. However, the downside of not having a widely-accepted understanding of UX is that teams are often misaligned. A designer and manager may not see eye-to-eye on the responsibilities of a UX designer. Both designer and manager may feel that the UX team plays an under-capacity role within the organization. Schisms such as these can tear teams apart, slow down design and development process, reduce product quality, and result in higher employee turnover.

The purpose of this study is to help teams define and develop UX within their organizations by

1. understanding what is expected of UX employees based on the skills, roles, and responsibilities listed in job postings;
2. comparing and contrasting the current and desired practice of UX; and
3. prototyping workshops that help both UX managers and designers apply design-thinking methods to effect positive changes in UX design practices and processes in their organization.

Definition of Terms

Affinity Cluster: a design-thinking method for organizing data into logical groups; it is a way of revealing patterns and themes (Luma Institute, 2012).

Build Your Own: a design-thinking activity where participants build (using a provided kit of materials) an expression of an ideal solution and present it. The activity helps uncover latent and unmet needs (Luma Institute, 2012).

Bull's-eye Diagramming: a design-thinking method for ranking items in order of importance and limiting the number of items that can be placed in the primary, secondary, and tertiary circles of a target diagram (Luma Institute, 2012).

Buy a Feature: a design-thinking method used to help reveal what people value. Participants make and express tradeoff decisions as they use an allotted amount of artificial money to buy features from among a set that exceeds the budget that they have been given (Luma Institute, 2012).

Experience Diagram: a design-thinking method for summarizing a situation via a map of people's journeys through a set of tasks, processes, or circumstances (Luma Institute, 2012).

Media Inquiry (or popular media search): a design-thinking method for surveying and exploring recent or new media, seeking insightful and revealing developments and trends (Kumar, 2012).

Soft Skills: skills, abilities, and traits that pertain to personality, attitude, and behavior that can be grouped into two clusters: interaction and motivation. Interaction is characterized by the ability to interact with customers, co-workers, and supervisors. Motivation is characterized by enthusiasm, positive attitude, commitment, dependability, integrity, and willingness to learn (Moss & Tilly, 2001).

Statement Starters: a design-thinking approach to problem statements that invite broad and divergent thinking by using phrasing that encourages exploration such as "how might we…," "in what ways might we…," and "how to…" (Luma Institute, 2012).

Word Co-occurrence (or collocation): a linguistics and semantic network analysis technique that builds meaning related to how concepts are connected (Osgood, 1959).

What's on Your Radar: similar to the bull's-eye diagram, in this design-thinking activity participants plot items according to personal significance (Luma Institute, 2012). Items are plotted on a target diagram made up of three concentric circles sliced into 4-6 equal segments. Segments represent subcategories of the topic, and circles represent the level of significance with the innermost circle being the most significant.

Literature Review

Academic Definitions

Academics have been discussing UX design in research articles since the late '90s with the purpose of clarifying what UX is and is not. Don Norman and Jakob Nielsen (2017) described UX as encompassing "all aspects of the end-user's interaction with the company, its services, and its products" (para. 1). They further defined UX design by the following characteristics:

- meets the exact needs of the customer without inconvenience
- utilizes simplicity and elegance to create products that are a joy to own and experience
- does not just give users what they want
- does not provide a checklist of features
- is not just a user interface (UI) or just usability

- requires the seamless merging of the services of multiple disciplines

Norman and Nielsen are not alone in how they define UX; many other academics share similar views. Bevan (2008) explained that UX is "every aspect of the user's interaction with a product, service, or company that make up the user's perceptions of the whole" (p. 1). Kuniavsky (2010) agreed with the all-encompassing nature of UX design; he described it as "the totality of end users' perceptions as they interact with a product or service" (p. 15). He further defined perception as the following:

- Effectiveness = how good is the result?
- Efficiency = how fast or cheap is it?
- Emotional Satisfaction = how good does it feel?
- Relationship Quality = what expectations does it create for subsequent interactions?

Hassenzahl and Tractinsky (2006) stated that UX goes beyond preventing and fixing usability and interaction problems. They declared that the purpose of UX design is to contribute to the "quality of life by designing for pleasure rather than for absence of pain" (p. 96).

However, UX does not only benefit the end user. Hekkert et al. (2003) explained that it is a new strategy utilized by industrial designers and major corporations. As experience-driven design takes into account all of the subtleties of design (including appearance, functions, and operation), it increases not only customer satisfaction, but also customer retention. To this end, the goal of UX design should be to improve customer satisfaction and loyalty through the utility, ease of use, and pleasure provided in the interaction with a product over extended periods of time (Kujala, Roto, Väänänen-Vainio-Mattila, Karapanos, & Sinnelä, 2011). Ultimately, improved customer experiences result in decreased customer turnover, which leads to significant savings

for businesses that do not have to worry about the costs associated with losing and winning back customers.

Norman and Nielsen (2017) made it clear that UX design goes far beyond a single profession or department. User experience is a team effort that necessitates contributions from diverse disciplines including engineering, marketing, graphic design, industrial design, interface design, product owners, and more. Dan Saffer visualized this concept of UX as a multi-disciplinary practice (see Figure 1).

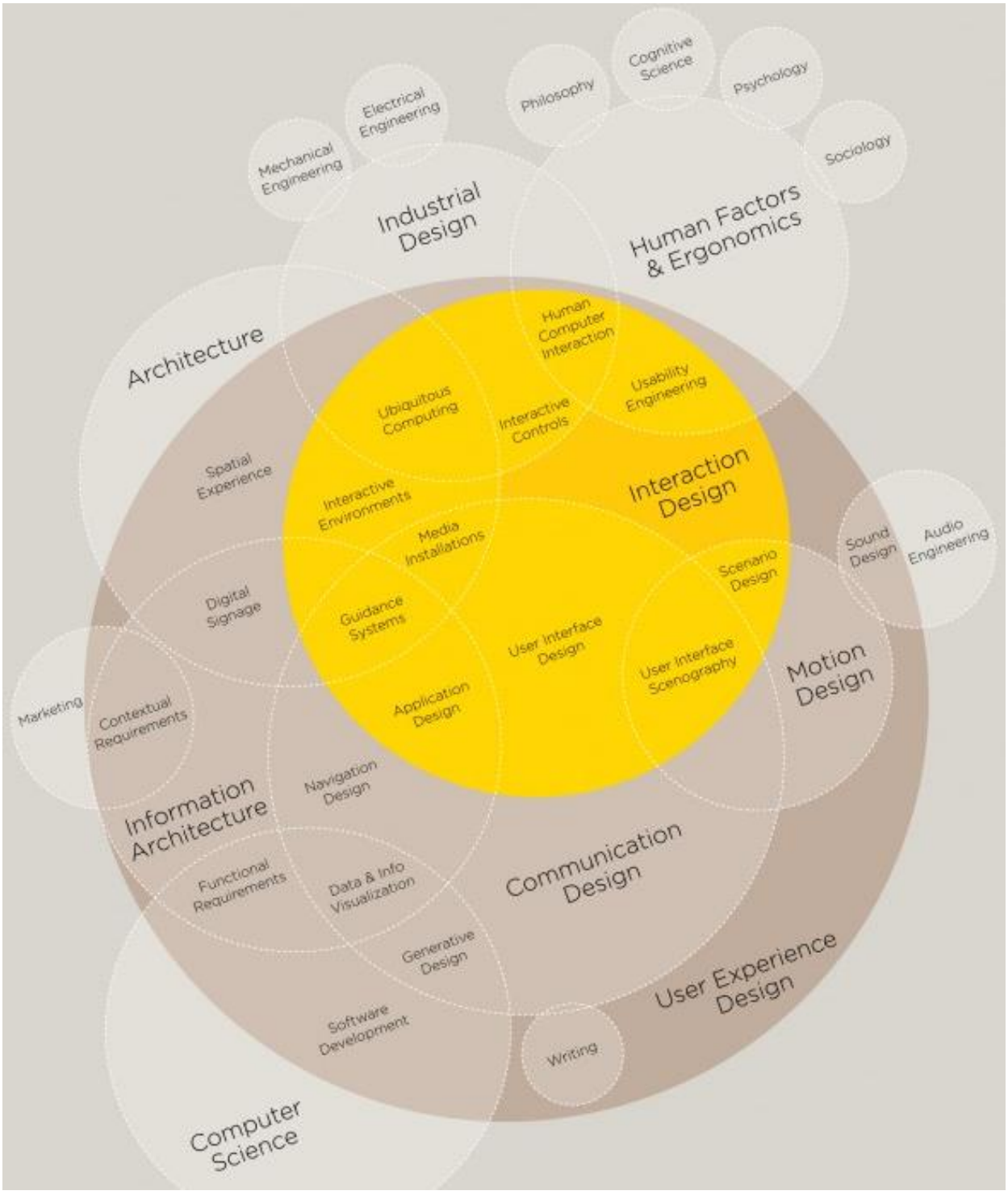


Figure 1. The disciplines of UX design. This infographic updates Dan Saffer's original diagram (Precisely, 2013; Saffer, 2008).

Practitioner Definitions

Maccarone and Doody (2016) suggested that if you ask five people what a UX designer does, you will get five distinct answers. It is difficult to explain or understand the value of UX design when definitions, interpretations, and practices drastically vary. One does not have to search very far to discover the plethora of definitions of UX that exist in blogs, personal websites, and industry websites and publications. On the industry website, *TheNextWeb*, Palmer (2016) provided a lengthy definition of UX:

> UX is about how something works, and not how it looks…user experience design is about finding the sweet spot where the human needs and goals of a business meet… the UX Designer's job is to start with the psychology of the user… when a designer is interviewing customers in the field, and crafting a journey for them – she's doing UX. (para. 6-17)

Lamprecht (2017) defined UX a little differently on the *CareerFoundry* website. His definition emphasizes developing quality interactions between the business and the user that satisfy business goals and processes:

> part marketer, part designer, part project manager; the UX role is complex, challenging and multi-faceted… ultimately the aim is to connect business goals to user's needs through a process of testing and refinement which satisfies both sides of the relationship… the process of development and improvement of quality interaction between a user and all facets of a company… responsible for being hands on with the process of research, testing, development, content, and prototyping to test for quality results… in

> theory a non-digital (cognitive science) practice, but used and defined predominantly by digital industries. (Lamprecht, 2017, para. 21-22)

What do UX designers do and what is their role? After reviewing a few examples of the responsibilities of UX designers outlined by industry practitioners, it might be easier to ask what a user experience designer does not do. Palmer (2016) stated, "The UX Designer's job is to start with the psychology of the user" (para. 16). Are UX designers trained and experienced in psychology? Lamprecht (2017) said, "If you're interested in sociology, in cognitive science, in people and in great products, User Experience is a good place to be" (para. 23). Are UX designers trained and experienced in sociology and cognitive science? Some practitioners argue that user interface design is but a minor part of UX design, while other software designers say that it plays a significant role. Because the visible interface is the most tangible sensory experience for users, it is not surprising that some users, designers, and managers perceive UX as little more than the interface itself and neglect other essential components of good UX design methods and practice (see Figure 2).

Figure 2. Designer vs. company views of UX. This side-by-side comparison of views provides evidence that some UX practitioners feel that their present and potential contributions are not fully realized (Flowers, 2012).

It is difficult to determine whether the discrepancy portrayed in Figure 2 is accurate due to the lack of research about how businesses view the role of UX design in their organizations. However, it is evident from this forum and others that at least some UX designers are not satisfied with the part that they play at their respective jobs.

Business Definitions

Opposite the plethora of practitioner definitions is the distinct dearth of business leader definitions of UX design. Even business leaders' commentary on UX and how it affects their products and services is hard to find. The overall sentiment voiced by software business leaders is that UX design is good for business. It is easy to find design managers who extol the virtues of UX and perhaps even glorify its impact on business. However, beyond the financial implications of UX design, there is a lack of information regarding how UX impacts software companies and their design and development processes.

The description of a Forrester Report suggests that perhaps the return on investment of UX design has not yet been justified:

> User experience (UX) has gone mainstream: Companies now invest millions to build design centers and hire UX teams. But many firms still expect proof of the Return on Investment of UX research, design, testing, and validation every step of the way — which customer experience (CX) professionals try but struggle to provide. This document outlines a six-step process that helps CX pros make that business case. (Hogan, Laufer, Truog, Willsea, & Birrell, 2016)

If the return on investment is unclear, then why are companies investing so heavily in UX design? What role do they envision it playing in their organizations?

All Definitions

It is important to note that the definitions of UX in this literature review only span 11 years. While UX competencies can be applied to almost any area of business and design, the fields of computer technology, product design, and process improvement are where most UX jobs are found today (Farrell & Nielsen, 2014). Thus, all definitions of UX in this study come from those fields. Despite stemming from a small gene pool over a short time, definitions of UX differ. However, one similar characteristic of all definitions is the length. Even when condensed and abbreviated, they are long. Wordy descriptions may result from an attempt to clarify a currently nebulous discipline.

Trying to define the role of a UX designer by comparing it to other related and overlapping disciplines does not add any clarity to the matter. Heated opinions abound in articles, blogs, and online forums about the relationship among user experience, user interface, and interaction design (Lamprecht, 2017). As if the definition of a UX designer is not already messy, the terminology is further muddied when looking at job titles that hide the fact that they are involved in designing user experiences (Farrell & Nielsen, 2014, p. 19).

In a recent survey of 500 managers and department heads working in UX design, Adobe asked what employers are looking for in UX designers. Figure 3 is a graph of the top competencies mentioned by the participants (Faller, 2017).

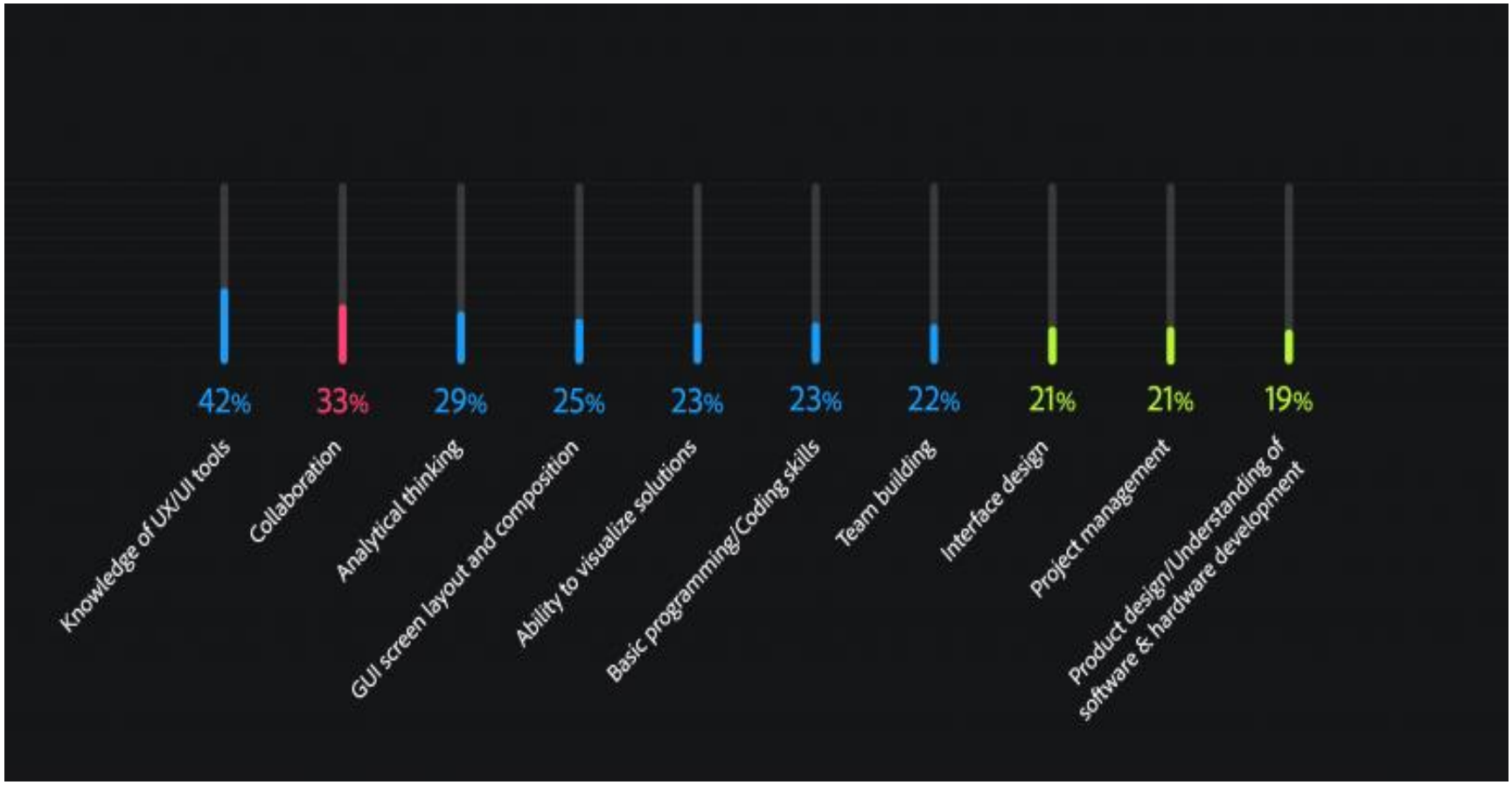


Figure 3. What employers look for in UX designers. This bar graph represents the percentage of 500 employers that say they are looking for each talent or skill listed in the figure (Faller, 2017b).

Though the survey provides a good overview of UX skillsets most frequently mentioned by 500 managers and department heads, it does not prioritize or define which are most important. Adobe's survey would benefit from triangulating its data with other sources to make it more robust and to support its findings. Though the study reports what hiring managers are looking for in UX designers, it does not compare its results against the skillsets currently used by the UX employees on their teams. The famous anthropologist, Margaret Mead, is often quoted as saying, "what people say, what people do, and what they say they do are entirely different things" (Ewing, McGowan, Speed, & Bernie, 2011). Thus, without further data, it is impossible to know whether the UX skills sought by hiring managers match those that are actually utilized by the organization.

However, the UX skill sets utilized by a software organization may not even match those listed in the job description or (even more importantly) those needed to meet the expectations of the company, and the UX skills required to reach expected business outcomes might not align with the academic definition of UX.

Why Define UX at an Organizational Level?

In a recent interview, a UX designer said he felt like a glorified graphic designer. The designer had nothing against graphic design; it was just not the profession that he had pursued. He anticipated job responsibilities outside of organizing and arranging visual elements of the user interface. When asked what his profession would be if not UX design, he responded, "maybe a high school counselor." During the interview, it became apparent that this designer pursued UX because he thought it was an opportunity to improve lives. Thus, it was not surprising that he was not satisfied with a job at which he spent most of his time in front of a computer arranging and rearranging elements of the software's interface. He "designed" user

experiences with very little interaction and feedback from customers, which made it impossible for him to tell if he was making any positive difference in the lives of end users.

During a conference, a regional religious leader explained that the most challenging part of his work is the lack of feedback. Without feedback, it was impossible for him to know if the service that he rendered made any difference. Leading at a regional level meant that he participated in many meetings and conferences. He primarily interacted with local leaders and spent more time training them and less time administering to members of the congregations. His responsibilities did not permit him to stay in any single area long enough to see whether his labors bore any fruit. Like this religious leader, the UX designer mentioned previously struggled with not knowing the effects of his work; he had expected to interact more with users so he could collect and implement feedback and witness the effects of design changes.

In a different interview, another UX designer said that in his dream job, he would use his background in sociology and illustration to create better health care experiences for children and their families. By most academic definitions of UX, he still wanted to be a UX designer. He wanted to develop a deeper understanding of problems and underlying issues through field studies and user research so he could design more meaningful solutions. He wanted to be able to tap into a broader range of his knowledge and skills. Ironically, it seems that many UX job postings include user research, field testing, and usability testing among their job descriptions, yet these were things that he was never able to do in his current position as a UX designer.

In the state of Utah, there appears to be a high turnover of UX designers at software companies. At one company, a UX team of three designers experienced a complete turnover in less than 2 years. Wondering if this rate of turnover was an anomaly or the norm, a small exploratory study of 10 UX designers working in Utah was conducted (see Appendix A). The

findings suggest that UX designers spend an average of under 2 years at any given job. Turnover can be costly in many ways. Hausknecht and Trevor (2011) explained that "collective turnover can lead to undesirable outcomes because it entails the loss of firm-specific human and social capital, disrupts operations and collective function, saddles remaining members with newcomer socialization and training, and increases recruitment and selection costs" (p. 360). If UX designers are only averaging 2 years at each job, software companies most likely experience significant turnover costs. There are many possible explanations for the short tenures of UX designers. Some designers may have worked for several small startups that did not end up going anywhere. Other designers may have received better job offers in a strong economy. However, it is also possible that other UX designers left positions because they were dissatisfied; perhaps their job was not as advertised, or maybe they had a completely different definition of UX and its role from that of the team or organization.

Noah Webster, the famous lexicographer who is well known for the dictionary that he developed, said, "There is one remarkable circumstance in our own history which seems to have escaped observation… the mischievous effect of the indefinite application of terms" (Zenderland, 1978, p. 59). Many businesses have undoubtedly experienced this "mischievous effect" when it comes to UX design. However, it could be mitigated (or perhaps even eliminated) through a more definite "application of terms." Since there is not a universally accepted definition of UX, it becomes imperative for software companies to define it and its role in their organizations. Otherwise, they risk team members pushing and pulling in different directions and wasting valuable time and resources. Noah Webster also stated, "It is obvious to my mind, that popular errors proceeding from a misunderstanding of words are among the efficient causes of our political disorders" (Zenderland, 1978, p. 59). Organizations that do not define the role of

UX also run the risk of team members leaving behind the chaotic roles, processes, and environments that are sure to ensue.

This research seeks to help teams define and develop UX within their organizations. The results of this research will show hiring managers in Utah whether the skills and responsibilities listed in UX job postings align with those performed by their employees, and it will provide suggestions for addressing any discrepancies that may exist. Findings will help unify UX teams around a shared definition of UX and will help managers better recruit UX employees who can help reach the goals of the UX team and software organization at large.

This study will also benefit UX designers in Utah who seek to redefine their roles. Findings will provide an overview of the UX skills and responsibilities that are most important to hiring managers. The workshops prototyped during this study may provide a framework that designers could use to share ideas, and generate actionable plans for aligning different theoretical and practical views of UX among their teams. Both current and future UX employees will also benefit from knowing whether the skills and responsibilities listed in job postings typically align with those performed on a daily basis. This knowledge could empower UX employees to ask questions during job interviews that help uncover the true nature of the position. Employees whose definitions of UX do not align with their current or future managers' descriptions will know that those discrepancies can be addressed in order to perform job responsibilities that better align with their personal paradigm of UX.

Methods

The purpose of this study is to help teams define and develop UX within their organizations by

1. understanding what is expected of UX employees based on the skills, roles, and responsibilities listed in job postings;
2. comparing and contrasting the current and desired practice of UX; and
3. prototyping workshops that help both UX managers and designers apply design-thinking methods to effect positive changes in UX design practices and processes in their organization.

A mixed-method research approach was used to determine how software companies define the role of user experience in their organizations. This study primarily utilized qualitative methodologies, including 10 design-thinking methods (Figure 4). Basic quantitative methodologies, such as frequency counts, were used to help analyze certain aspects of the qualitative data.

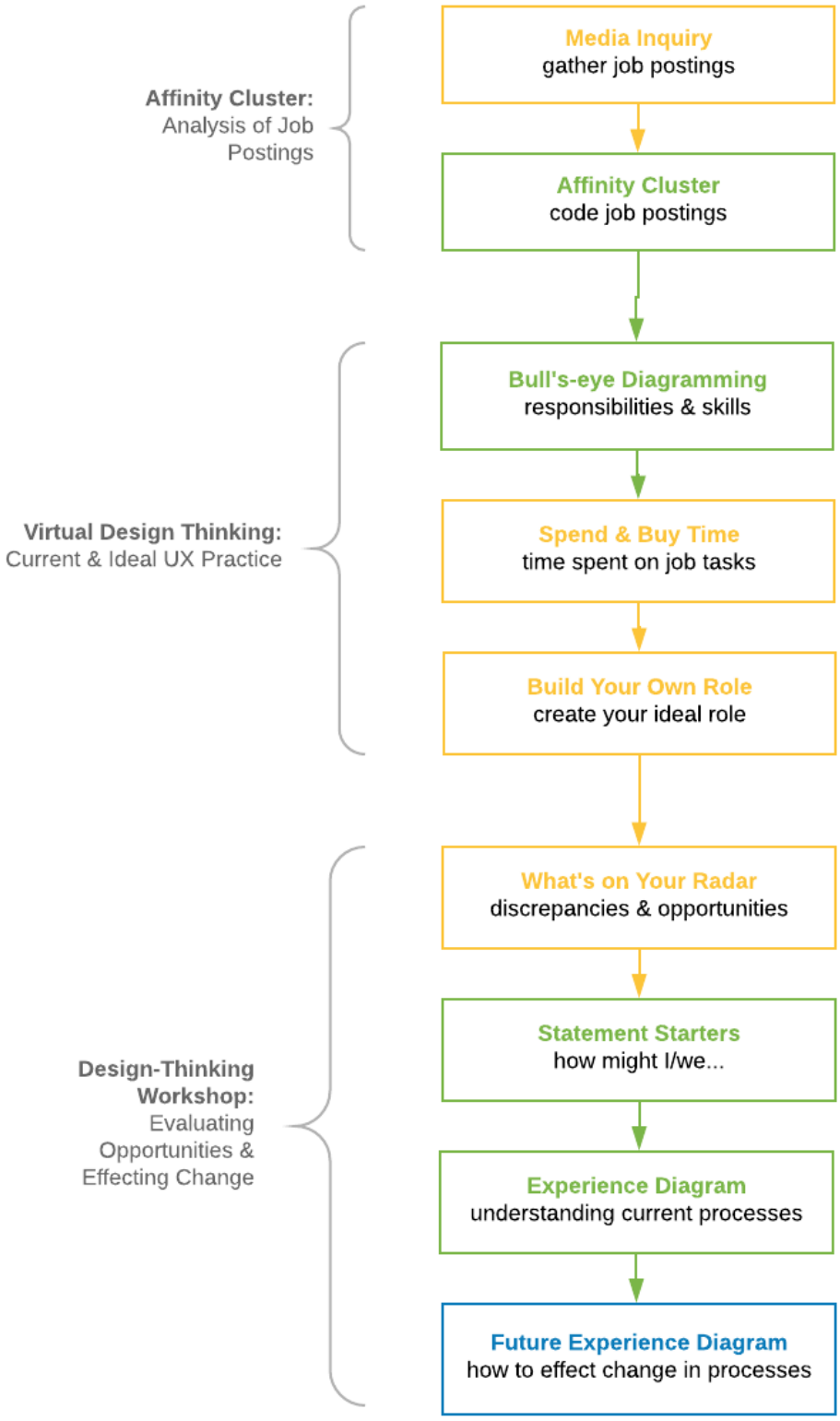


Figure 4. The sequence of design-thinking methods used in this study.

A non-random, purposive sample of job postings was used for the first phase of this study. A non-random, purposive sample of UX professionals was used during the second and third phases. All samples were gathered from Utah-based software companies. Over the past decade, Utah has experienced incredible growth in the software industry. Several large companies, such as Adobe, have established offices in the state. There are many successful software companies (e.g., Omniture, Novell, Xactware, Vivint, and Qualtrics) headquartered in Utah, and there are many other successful startups (e.g., Pluralsight, Domo, SirsiDynix, and Instructure) with Utah roots.

Affinity Cluster: Analysis of Job Postings

Sample. Job listings are not only a common way for professionals in the software industry to post and search employment opportunities, but they are also a great way to better understand what software organizations expect of UX design. Therefore, the first phase of this study consisted of a nonrandom, purposive sample of 41 UX jobs posted by or for Utah software companies. Kumar (2012) said popular media searches are a great way to find insightful and revealing developments by exploring the latest trends. Gathering and analyzing UX jobs posted on popular job boards helped reveal trends and summarized opinions regarding the role of UX in software organizations.

Listings were gathered from LinkedIn and Indeed job boards. Indeed gathers job postings from many websites. Employers can also post jobs directly to Indeed's platform. LinkedIn is a popular professional network platform. Many technology companies use LinkedIn's job board to post their employment opportunities. Since job descriptions typically require the approval of executives and hiring managers before being posted, an analysis of UX job listings provided useful insight into how software organizations think about and define the roles of UX. Samples

were gathered over the course of one week and capture a variety of software companies. Companies range from just over 1 year of experience to over 30 years of experience. Some companies have between 11 and 50 employees, while others have over 5,000 employees. Samples included product (i.e., creates and sells their own software), service (including agencies, firms, and consultancies), and non-profit organizations. Due to the numerous ways that people post jobs both on and offline (including local newspaper sites and company websites), it was not feasible to gather a complete census of UX job postings in Utah over the course of one week. Since Indeed and LinkedIn are recognized as two of the most popular job boards (The Best Job Sites for 2017, n.d.; Thomas, 2017), researchers purposefully gathered samples from their listings.

Instrumentation, procedure, and data collection. As discussed previously, user experience is nebulously defined, both in theory and in practice. Consequently, applying an existing model, definition, or theory of user experience would be an ineffective means of discovering how user experience is currently defined or understood by software organizations. The methods of this study needed to allow for flexibility in both conceptualization and definition, allowing for this understanding to emerge organically. To this end, an in-depth affinity cluster was used. An affinity cluster is a design-thinking strategy used to organize data into logical groups; it is a way of revealing patterns and themes (Luma Institute, 2012). The affinity cluster followed a grounded theory approach, wherein themes and patterns emerged via analysis, rather than by correlating data with an existing framework or theory (Glaser & Strauss, 1967).

The search criteria were jobs posted by software companies within the state of Utah that contained the words “user experience” or the letters “UX” within the job title or description.

Throughout the remainder of this paper, we will refer to postings that have met these search criteria as simply “job postings” or “postings.” Using Zotero, a reference management software, job postings were saved and organized. A threat to the validity of this research is the mortality rate of original samples. Since the lifespans of job postings are often less than a couple of months, it was imperative to the validity of this study that a local copy of each job posting was saved. Local copies were saved and referenced easily using the Zotero software. Postings were organized based on postdate range and title (e.g., UX/UI Designer, UX Designer, User Experience Researcher, Product Designer). Postings containing the words “user experience” or the letters “UX” in the job description were included in the study even if they did not use those same words or letters in the job title. Similarities and differences among the various jobs that support UX design yielded valuable insights into how companies define the role of user experience in their organizations.

Analysis. Postings were batched into Dedoose (SCRC, 2017)—a mixed-methods annotation and coding software—for analysis. Following our grounded theoretical approach, we initially used a series of code-based content analysis methods to help identify, cluster, validate, and expand emerging concepts and themes. Then we combined the code-based content analysis with descriptive statistics.

Grounded theory content analysis, as defined by Glaser (1978), prescribes three unique phases of coding: open, axial, and selective (Böhm, 2004). Open coding is an initial review with the purpose of identifying distinct words, concepts, or categories, called codes. Axial coding then uses these codes to (a) confirm that the codes accurately reflect the actual content and (b) explore how these codes may be related. Selective coding then reviews these codes and emerging connections or trends to discover overarching themes, patterns, or stories, which will form the

foundation for insights and conclusions. A major tenant of this approach is constant comparison: continuously reviewing collected data for newly coded concepts, categories, or themes as the sample grows and the analysis progresses (Glaser & Strauss, 1967). This repetitive and reflective approach helps to ensure that the coding framework and emerging themes accurately reflect the entire body of data, rather than the content of individual postings.

Our specific approach to content analysis largely followed this methodology. In Dedoose, each job posting was reviewed and coded at least three times. These three phases were also accompanied by descriptive quantitative and statistical analysis of codes, as defined below.

The first review—open code phase—was intended to gain an overall understanding of the job posting. The open code phase began by reviewing the posting against an initial "start list" of categories, concepts, or terms, which helped to establish some early consistency and direction in coding (Miles & Huberman, 1994). This start list was generated by the student researcher and consisted of specific attributes, such as the industry, and, where available, the maturity of the UX team and organization (see Appendix B).

The second phase—axial coding—focused on code validation and emerging relationships. Several techniques were applied during this phase to identify code relationships (Ryan & Bernard, 2003):

- Repetition: Identifying when terms were frequently repeated in a posting.
- In vivo coding (Strauss, 1987): Identifying specialized or localized terms used in specific industries, organization, cultures, geographies, etc.
- Linguistic connectors: Identifying relationships via connecting words or phrases, such as "and," "or," "but," "then," etc.

- Constant comparison: Identifying similarities or differences in how words or phrases were used, both within individual postings and across postings.
- Missing data: Identifying when there appeared to be missing information or situations in which one anticipated related words, concepts, or terms, but they did not appear.
- Word lists and Key-Word-In-Context (KWIC) technique: Identifying the number of times words appeared in a posting.
- Word co-occurrence or collocation: A linguistics and semantic network analysis technique that builds meaning related to how concepts are connected (Osgood, 1959).

To allow for the first and second coding phases to be completed for all collected data, the third phase—selective coding—began at the end of the data collection period. This phase began with a quantitative analysis of all open and axial code data. To provide a high-level view of code trends across the sample, analysis features in Dedoose presented descriptive statistics for all codes, such as frequencies, distributions, outliers, and averages, which helped to identify broad trends. A correlation matrix was then used to explore relationships between and among codes. These quantitative techniques not only provided direction, but also triangulated the results of selective coding. Selective coding, focusing now exclusively on developing themes across the sample, applied some of the techniques used in axial coding—such as KWIC and collocation—as well as organization techniques such as card sorting and mind mapping (Ryan & Bernard, 2003). Particular attention was given to outliers, extreme collocation correlations (positive or negative), and extremes in frequency to improve internal validity and decrease the possibility of confounding variables.

Virtual Design Thinking: Current & Ideal UX Practice

In order to encourage participation, increase the sample size, and eliminate any coercion effect (resulting from UX managers and employees who work for the same company), a virtual design-thinking session was designed to investigate, better understand, and compare the current and ideal practice of UX design and research. Codes that emerged from the analysis of the job postings during the previous phase of this study served as a starting point for three design-thinking activities in which UX professionals virtually participated. Responsibilities and soft-skills lists were generated from the codes. However, during the following activities, subjects were not limited to the items on the lists. Subjects were invited to add items that they felt were missing from the starter list.

Sample. This phase of the study was composed of a non-random, purposive sample of UX employees and managers from Utah software companies. Ninety-six people were invited to participate through email or LinkedIn. It was anticipated that approximately 10 UX managers and 30 UX designers or researchers would participate. In order to develop a more holistic understanding of how UX is practiced in software organizations, it was important that samples be gathered from a variety of companies ranging in years of experience and the types of business (i.e., product, services, or non-profit).

Instrumentation, procedure, and data collection. The virtual design-thinking activities were administered via Qualtrics, a software survey tool. After receiving an email or LinkedIn message with an invitation to participate in this study, subjects who were willing to participate clicked on a link (included in the invitation) that took them to the design-thinking activities. After reviewing the cover letter and agreeing to participate, subjects were asked some basic demographic questions including job title, years of experience, company size, team size, etc. (see Appendix D for the full list of questions and design-thinking activities).

UX managers, designers, and researchers participated in a bull's-eye diagramming activity. A bull's-eye diagram is a design-thinking strategy for ranking items in order of importance and limiting the number of items that can be placed in the primary, secondary, and tertiary circles of a target diagram in order to encourage prioritization (Luma Institute, 2012). The diagrams in the virtual design-thinking sessions had a slight departure from the traditional bull's-eye diagram. Instead of plotting primary, secondary, and tertiary items on a target of three concentric circles, participants placed items into primary, secondary, and tertiary containers and then prioritized items within each container (see Appendix C). Using the skills and responsibilities that emerged during the affinity cluster of job postings, subjects prioritized responsibilities on one diagram and soft skills on another. Subjects were limited to five primary responsibilities and 10 secondary responsibilities on the first diagram, and subjects were limited to three most-important soft skills and five second-most important soft skills on the second diagram. After prioritizing items on the two diagrams, subjects were asked to explain or justify their decisions.

To evaluate whether UX team members' allocation of time at work was reflective of the responsibilities that they thought were most important for delivering quality user experiences,

subjects participated in two activities called “spend an hour” and “buy an hour.” These two activities were adaptations of a design-thinking methodology called “buy a feature.” “Buy a feature” helps reveal what people value; participants make and express trade-off decisions as they use an allotted amount of artificial money to buy features from among a set that exceeds the budget that they have been given (Luma Institute, 2012). Instead of being given a limited sum of cash, participants were given a limited sum of time. They were restricted to the hours of a typical work week. In the spend-an-hour activity, designers and researchers were asked to describe their current time-spending practices by expressing how much time they spent on different job responsibilities throughout a typical work week. Similarly, managers were asked to express what percentage of time they thought that their UX team spent on different job responsibilities during an average work week.

Managers, designers, and researchers were then asked what percentage of time they thought their UX team should spend on different responsibilities during a typical work week in order to deliver top quality user experiences. Next, they allocated time to those responsibilities.

Designers and researchers then participated in one last virtual design-thinking activity where they were asked to build their own ideal schedule. Giving people an opportunity to create their own product, service, process, schedule, etc., is a design-thinking strategy (known as “build your own”) that allows participants to build an expression of an ideal solution, helping uncover latent and unmet needs (Luma Institute, 2012). Subjects were asked how many hours per week they would personally like to spend on the different job responsibilities under ideal circumstances.

Analysis. The primary, secondary, and tertiary responsibilities and soft skills plotted by each participant were tallied. Managers' responses were tallied separately from designers and researchers to see if prioritization between leadership and team members differed. Data from the bull's-eye diagram was visualized using bar graphs, and similarities and differences between managers' and team members' prioritization of responsibilities and soft skills were noted.

The hours spent by all designers and researchers on each responsibility during a typical work week were totaled and averaged. Next, the average time spent for each responsibility was converted into a percentage of a work week. Similarly, the percentage of time that all managers thought was spent by their UX teams on different responsibilities during a typical work week was totaled and averaged. Then the average time per week that designers and researchers reported that they spent on each responsibility was subtracted from the average time that managers thought was spent on each responsibility, and discrepancies between the two were noted.

The ideal practice of UX design was analyzed in the same way as the current practice. Average percentages of time that should ideally be allocated to each responsibility were calculated for managers and for team members. Then designer and researcher averages were subtracted from managers averages, and discrepancies between the two were noted.

Design-Thinking Workshop: Evaluating Opportunities & Effecting Change

The design-thinking workshop was the culmination of this research study. It was intended to help further validate results that emerged from the previous two phases of this study. It was also designed to test out a prototype of a workshop that could be used by software organizations to assess their current UX practices and processes and to discuss opportunities for improvement.

Sample. Since both top-down and bottom-up changes can take place within an organization, it was important that both UX managers and team members were sampled. Therefore, the second phase of this study consisted of a nonrandom, purposive sample of four UX professionals (two managers and two designers) who work for Utah software companies. A range of industry experience was drawn upon for this phase of the study since views and interpretations of UX design practices and processes may vary depending on experience.

Subjects were invited to participate via email and LinkedIn. One of the researchers is a UX designer in Utah. His industry contacts allowed him to recruit individuals to participate. Participants who completed the virtual design-thinking activity and who expressed interest in learning more about this study and its results were also recruited to participate in the workshops. All participants were over the age of 18.

Instrumentation, procedure, and data collection. The workshop began with a design-thinking activity called "what's on your radar," which allows participants to plot items according to personal significance (Luma Institute, 2012). Participants were asked to prioritize the UX skills and responsibilities that are important for delivering quality user experiences by writing them on sticky notes and plotting them on a target diagram made up of three concentric circles representing primary, secondary, and tertiary importance (see Appendix E). Participants were asked to draw a smiley face on the sticky notes if they felt the practice of that skill or responsibility at their work matched their view of how important it was. If there was a discrepancy between their views and the current practice, participants put a straight face or a frowny face on the sticky note depending on whether there was a moderate or significant discrepancy. Afterward, participants and the researcher clustered related skills and responsibilities into the 4-6 segments of the circles to see if there were any general themes.

Participants then diagrammed their current experience as a UX professional. An experience diagram is a design-thinking method for summarizing a situation via a map of a person's journey through a set of tasks, processes, or circumstances (Luma Institute, 2012). Participants were given a 23-inch by 20-inch poster board and sharpie pens and asked to map and discuss the current process of UX design at their work. The researcher asked clarifying questions while the participants created the diagram.

After their organization's UX design process was diagramed, the researcher asked participants to select one of the skills or responsibilities that had been assigned a straight or frowny face (if there were any) from the previous "what's on your radar" activity. Then the researcher asked, "Are there any roadblocks that prevent these skills and responsibilities from being better implemented in your organization's UX design process?" If there were any roadblocks, participants listed them out on the experience diagram or inserted them next to the parts of the process where they occurred.

The participants were then asked a couple of questions that began with statement starters. Statement starters are a design-thinking approach to problem statements that invite broad and divergent thinking by using phrasing that encourages exploration such as "how might we…," "in what ways might we…," and "how to…," (Luma Institute, 2012). The first question was, "How might your software organization better implement this important role and responsibility into your organization's UX practices and processes?" The second question was similar to the first but focused on the participant's role in effecting change rather than the organization's role: "How might you personally better implement this important role and responsibility into your organization's UX practices and processes?"

At the end of the workshop, the researcher asked participants whether they thought a team workshop similar to the one in which they participated could help their UX teams recognize and discuss opportunities for improvement and create and implement a plan to do so. They were asked to explain their answers and to provide feedback on how the workshop could be adjusted to be more effective in helping UX teams define and better fulfill its role in their organization.

Analysis. The "what's on your radar" and the experience diagrams from all four participants were compared for similarities and differences in priorities, processes, and roadblocks.

Results

The results from the three methods sections helped develop a better understanding of the current roles and practices of UX in software organizations and provided direction for how those roles and practices might be changed for the better.

Affinity Cluster: Analysis of Job Postings

The affinity cluster allowed for flexibility in both conceptualization and definition, allowing for an understanding of how software organizations currently define the role of UX to emerge organically. The analysis of job postings followed a grounded theory approach, wherein themes and patterns emerged via analysis, rather than by correlating data with an existing framework or theory (Glaser & Strauss, 1967).

Data collection. Forty-one job postings resulted from 36 Utah-based software companies. One company posted three distinct UX roles. Three companies posted two distinct UX roles, and the remaining 32 companies had one posting for a UX position. Of the 36 sampled, 29 were product companies, six were service companies, and one was a non-profit. Product companies create and distribute their own software. Service companies (including

agencies, firms, and consultancies) augment their clients' teams and capabilities with their services.

The sample covered various levels of experience: from new startups to well-established companies. Four companies had 0-5 years of experience and seven had 6-15 years of experience. Of the more seasoned companies, 17 were 16-30 years old, and the remaining 8 were more than 30 years old.

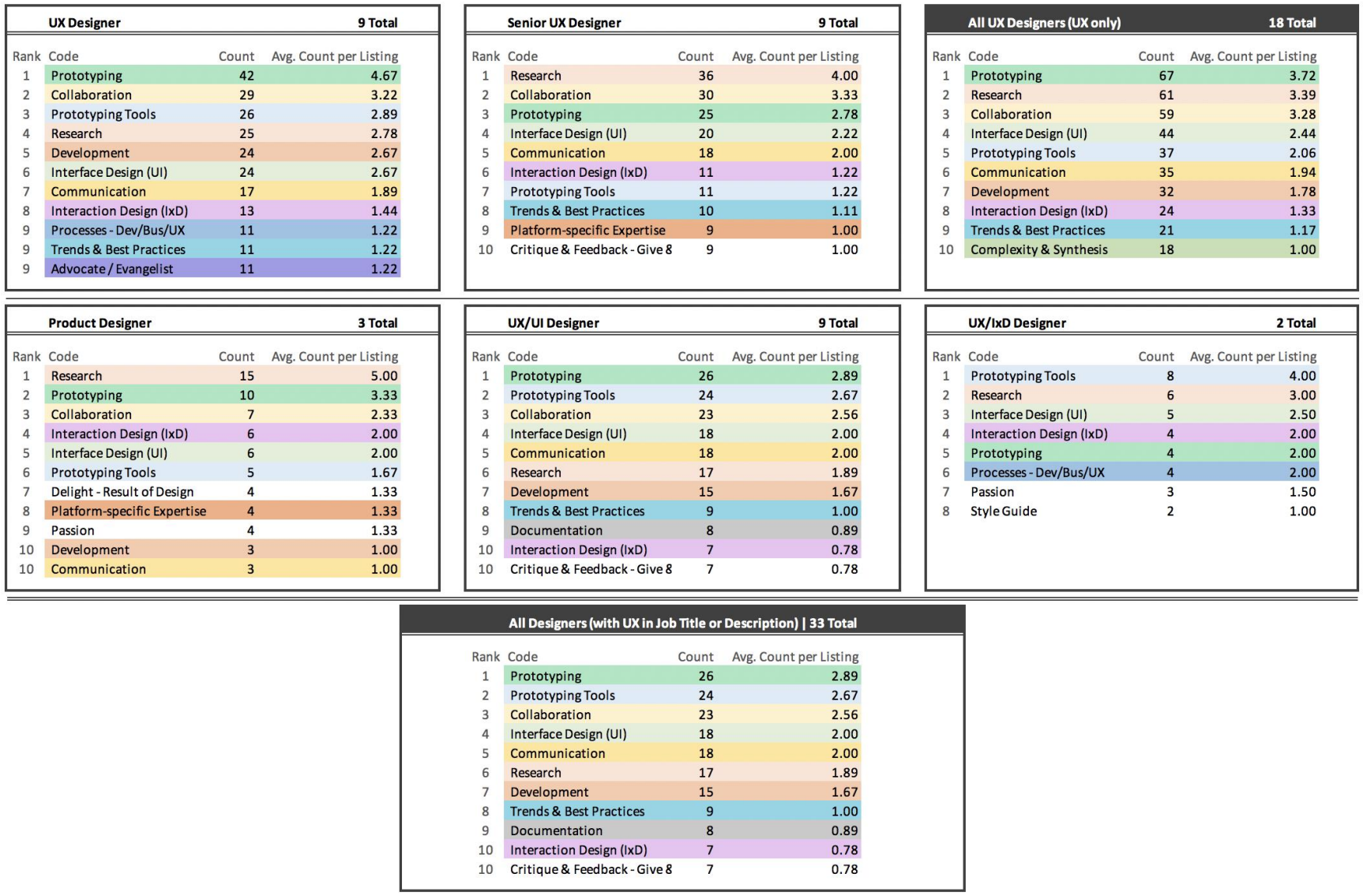
The sample also captured a diverse range of company sizes. Six companies had 11-50 employees, and another six companies had 51-200 employees. Four companies employed 201-500 people. Eleven companies employed 1,001-5,000 individuals, and the remaining five companies employed more than 5,000 people.

All job postings were sampled from LinkedIn and Indeed, the two most popular job boards used by software companies in Utah. All of the postings sampled in this study were found on LinkedIn. Most samples could also be found on Indeed since both platforms have a lot of overlap of postings by software companies in Utah.

Primary results. Thirty-three of the 41 UX postings were for designer positions and eight were for researcher positions. Of the 41 job postings, 25 specified education requirements, and of those 25, 21 required a bachelor's degree. Three (one designer and two researcher) postings required a master's degree. Thirty-five of the 41 postings specified minimum years of experience required for the position with a mean of 3.7 years. Seven years was the highest minimum specified in the postings. Twenty of the 35 that specified experience requirements, required 3 to 5 years of experience.

Seventy-four unique codes emerged from the analysis of job skills and responsibilities. Appendix E contains a complete list of codes within a matrix that helps visualize the distribution

and frequency of codes throughout the 41 UX postings. Figure 5 shows the topics that were most frequently mentioned in the job postings of designers. Each table in the figure represents a distinct designer title or the combination of multiple designer titles.



UX Designer — 9 Total

Rank	Code	Count	Avg. Count per Listing
1	Prototyping	42	4.67
2	Collaboration	29	3.22
3	Prototyping Tools	26	2.89
4	Research	25	2.78
5	Development	24	2.67
6	Interface Design (UI)	24	2.67
7	Communication	17	1.89
8	Interaction Design (IxD)	13	1.44
9	Processes - Dev/Bus/UX	11	1.22
9	Trends & Best Practices	11	1.22
9	Advocate / Evangelist	11	1.22

Senior UX Designer — 9 Total

Rank	Code	Count	Avg. Count per Listing
1	Research	36	4.00
2	Collaboration	30	3.33
3	Prototyping	25	2.78
4	Interface Design (UI)	20	2.22
5	Communication	18	2.00
6	Interaction Design (IxD)	11	1.22
7	Prototyping Tools	11	1.22
8	Trends & Best Practices	10	1.11
9	Platform-specific Expertise	9	1.00
10	Critique & Feedback - Give &	9	1.00

All UX Designers (UX only) — 18 Total

Rank	Code	Count	Avg. Count per Listing
1	Prototyping	67	3.72
2	Research	61	3.39
3	Collaboration	59	3.28
4	Interface Design (UI)	44	2.44
5	Prototyping Tools	37	2.06
6	Communication	35	1.94
7	Development	32	1.78
8	Interaction Design (IxD)	24	1.33
9	Trends & Best Practices	21	1.17
10	Complexity & Synthesis	18	1.00

Product Designer — 3 Total

Rank	Code	Count	Avg. Count per Listing
1	Research	15	5.00
2	Prototyping	10	3.33
3	Collaboration	7	2.33
4	Interaction Design (IxD)	6	2.00
5	Interface Design (UI)	6	2.00
6	Prototyping Tools	5	1.67
7	Delight - Result of Design	4	1.33
8	Platform-specific Expertise	4	1.33
9	Passion	4	1.33
10	Development	3	1.00
10	Communication	3	1.00

UX/UI Designer — 9 Total

Rank	Code	Count	Avg. Count per Listing
1	Prototyping	26	2.89
2	Prototyping Tools	24	2.67
3	Collaboration	23	2.56
4	Interface Design (UI)	18	2.00
5	Communication	18	2.00
6	Research	17	1.89
7	Development	15	1.67
8	Trends & Best Practices	9	1.00
9	Documentation	8	0.89
10	Interaction Design (IxD)	7	0.78
10	Critique & Feedback - Give &	7	0.78

UX/IxD Designer — 2 Total

Rank	Code	Count	Avg. Count per Listing
1	Prototyping Tools	8	4.00
2	Research	6	3.00
3	Interface Design (UI)	5	2.50
4	Interaction Design (IxD)	4	2.00
5	Prototyping	4	2.00
6	Processes - Dev/Bus/UX	4	2.00
7	Passion	3	1.50
8	Style Guide	2	1.00

All Designers (with UX in Job Title or Description) | 33 Total

Rank	Code	Count	Avg. Count per Listing
1	Prototyping	26	2.89
2	Prototyping Tools	24	2.67
3	Collaboration	23	2.56
4	Interface Design (UI)	18	2.00
5	Communication	18	2.00
6	Research	17	1.89
7	Development	15	1.67
8	Trends & Best Practices	9	1.00
9	Documentation	8	0.89
10	Interaction Design (IxD)	7	0.78
10	Critique & Feedback - Give &	7	0.78

Figure 5. Ranking of most frequently posted skills and responsibilities for UX designer jobs. The upper right table combines the UX Designers and Senior UX Designers tables. The bottom table shows all positions with "user experience" or "UX" in the job description/title.

Though it is interesting to note the slight differences in how often certain skills and responsibilities are mentioned in postings for designers with different titles, similar themes emerge for all designer positions regardless of title. Software organizations want UX designers who know how to prototype. There are many different types of prototypes mentioned in the sample of 41 job postings: high fidelity, interactive, paper, static mockups, and wireframing. However, the most frequently mentioned prototype (aside from unspecified types of prototyping) is wireframes with a total count of 35 and an average count per listing of 0.85. Prototyping tools were also frequently mentioned with prototyping methods. Rather than requiring in-depth knowledge of specific tools, most listings expected familiarity with different types of tools. The most frequently mentioned tools were Adobe CC products (particularly Illustrator and Photoshop) and Sketch. Interface design (including visual design and other related terminology) was the fourth most mentioned responsibility for designers.

There were frequent requests for designers with certain soft skills. Soft skills are "skills, abilities, and traits that pertain to personality, attitude, and behavior rather than formal or technical knowledge" (Moss & Tilly, 2001, p. 44). They can be grouped into two clusters: interaction and motivation. Interaction is characterized by the ability to interact with customers, co-workers, and supervisors. Motivation is characterized by enthusiasm, positive attitude, commitment, dependability, integrity, and willingness to learn (Moss & Tilly, 2001). Collaboration, communication, and critique/feedback were respectively the third, fifth, and tenth most mentioned skills for UX designers.

Research, development, knowledge of trends and best practices, documentation, and interaction design also made the top 10 frequency list for postings for designers. Research (including particular research methods) was mentioned 1.89 times per listing. The most popular

types of research referenced in postings were preliminary user research (including card sorting, tree testing, surveys, interviews, focus groups, personas, and journey maps) and product testing (including quality assurance, validation, user acceptance testing, and usability testing).

A separate code accounted for postings that asked for designers who were familiar with software development languages. Therefore, the "development" code was only applied to postings that asked for specific (mostly front-end) software development skills.

Figure 6 shows the top 10 frequency counts and average count per listing of skills and responsibilities listed for UX researchers. There are a couple of key differences between UX researchers and designers. Researchers seem to be more specialized, having much more emphasis on research. This is even more true for senior UX researchers. Based on the results shown in Figure 5 and Figure 6, the skills and responsibilities of a regular UX researcher fall somewhere between a senior researcher and a designer.

UX Researcher — **5 Total**

Rank	Code	Count	Avg. Count per Listing
1	Research	35	7.00
2	Communication	16	3.20
3	Complexity & Synthesis	12	2.40
4	Collaboration	9	1.80
5	Documentation	5	1.00
6	Prototyping	5	1.00
7	Processes - Dev/Bus/UX	5	1.00
8	Interface Design (UI)	4	0.80
9	Trends & Best Practices	4	0.80

Senior UX Researcher — **3 Total**

Rank	Code	Count	Avg. Count per Listing
1	Research	25	8.33
2	Collaboration	10	3.33
3	Communication	10	3.33
4	Mentorship & Leadership	10	3.33
5	Complexity & Synthesis	8	2.67
6	Plan	7	2.33
7	Platform-specific Expertise	6	2.00
8	Advocate / Evangelist	5	1.67
9	Trends & Best Practices	4	1.33

All UX Researchers — **8 Total**

Rank	Code	Count	Avg. Count per Listing
1	Research	60	7.50
2	Communication	26	3.25
3	Complexity & Synthesis	20	2.50
4	Collaboration	19	2.38
5	Mentorship & Leadership	13	1.63
6	Plan	10	1.25
7	Trends & Best Practices	8	1.00
8	Processes - Dev/Bus/UX	7	0.88
9	Documentation	6	0.75
10	Platform-specific Expertise	6	0.75
10	Advocate / Evangelist	6	0.75
10	Organized	6	0.75

Figure 6. Ranking of most frequently posted skills and responsibilities for UX researcher jobs. The right table is a combination of the "UX Researcher" and "Senior UX Researcher" tables.

Another key difference is that postings for researchers often ask for the abilities to deal with complexity and to synthesize data into actionable insights. The ability to plan is also a skill frequently mentioned by software organizations at a rate of 1.25 times per listing. Like designer postings, the frequent request for collaboration and communication skills ranked high for researcher postings. However, the order of those two rankings are reversed: Communication is mentioned more frequently in postings for UX researchers.

Table 1 compares the frequency of skills and responsibilities most frequently mentioned among all UX job postings. When analyzing codes across all postings, research rises to the top of the list, followed by prototyping.

Table 1

Skills Listed Most Frequently Among All UX Job Postings

Skills & Responsibilities	Count	Avg. Count per Listing
Research	160	3.56
Prototyping	115	2.56
Collaboration	111	2.47
Communication	84	1.87
Interface Design (UI)	80	1.78
Prototyping Tools	79	1.76
Development	52	1.16
Complexity & Synthesis	47	1.04
Interaction Design (IxD)	42	0.93
Trends & Best Practices	41	0.91

The results found in Table 1 provide a basic understanding of the UX skills and responsibilities that are most frequently mentioned in job postings by hiring managers at software companies.

A few word co-occurrences resulted from the affinity cluster. Word co-occurrence (or collocation) is a linguistic and semantic network analysis technique that builds meaning related to how concepts are connected (Osgood, 1959). Jobs that talked about interaction and interface design also talked about information architecture. There was a strong code co-occurrence between communication and the ability to deal with complexity and to synthesize information. User, work, and task flows had a strong co-occurrence with interaction design, interface design, and prototyping (more particularly with wireframing). Interaction design and interface design frequently co-occurred with prototyping and prototyping tools.

Secondary results. Even though they did not make it to the top 10 list of responsibilities and skills most frequently used in postings, 25 other codes averaged more than 0.5 counts per listing, three of which were delight (the concept of creating products that delight the customer), mentorship and leadership, and advocate/evangelist (the idea of advocating UX design and practices throughout the software organization).

Virtual Design Thinking: Current & Ideal UX Practice

The virtual design-thinking activities helped develop a better understanding of what managers, designers, and researchers consider to be the most important responsibilities of UX design. Current and ideal practices of UX design were compared and contrasted so that opportunities for improvement in UX practice could be noted for further exploration.

Participants. Invitations to participate in the virtual design-thinking activities were sent to 96 UX professionals working in Utah. They were purposely distributed to 18 managers and 78

designers and researchers from diverse software companies with varying years of operation. Eleven managers, 27 designers, and one researcher participated in the study resulting in a total of 39 participants and an overall response rate of 41%. Subjects hailed from companies ranging from 1 to 91 years of operation, six to 44,000 employees, and one to 20 UX teams. Managers had 3 to 13 years of experience and averaged 6.82 years of experience per manager. Managers led teams with three to 18 employees, and the average team size was 6.64 employees. The 28 UX team members ranged from less than 1 year of experience to 17 years of experience and averaged 4.55 years of experience per employee.

Recruitment. All subjects were invited to participate either by an email or by a LinkedIn message. The email or message included a link to the virtual design-thinking activities. All subjects were over the age of 18. No compensation was offered for participation. Before participating, all subjects were given the opportunity to review a cover letter that further described the study and encouraged them to contact either of the researchers if they had questions or concerns or wished to withdraw from the study. Subjects agreed to participate in the study by advancing past the cover letter. If they did not wish to participate, they were asked to leave the virtual design-thinking session by closing the browser tab or window.

Data collection. The virtual design-thinking activities were administered via Qualtrics, a software survey tool. Thus, all data for this phase of the study was gathered through Qualtrics software.

Primary results. Figure 7 shows the top five primary responsibilities selected by the eleven managers who participated in the bull's-eye diagramming activity. For a full count of primary, secondary, and tertiary skills selected by managers, see Appendix G. The responsibilities in Figure 7 are right in line with the skills that were listed most frequently among

UX job postings (see Table 1) during the first phase of research. In fact, the only top responsibility in Figure 7 that is not also represented in Table 1 is architecture, which was not mentioned very frequently among job postings, yet rose to the top of the list of managers' prioritizations of UX responsibilities.

The top five primary responsibilities listed by 28 UX designers and researchers aligns with the top five responsibilities listed by the managers (compare Figure 7 with Figure 8) with only a couple of small differences in ranking. (For a full count of primary, secondary, and tertiary skills listed by designers and researchers, see Appendix H.) For both managers and team members, interface design placed second and interaction design placed fifth. However, managers ranked user research higher than their team members. Though they were in slightly different order, managers and team members were in sync on the importance of collaborating with interdisciplinary teams and communicating design solutions.

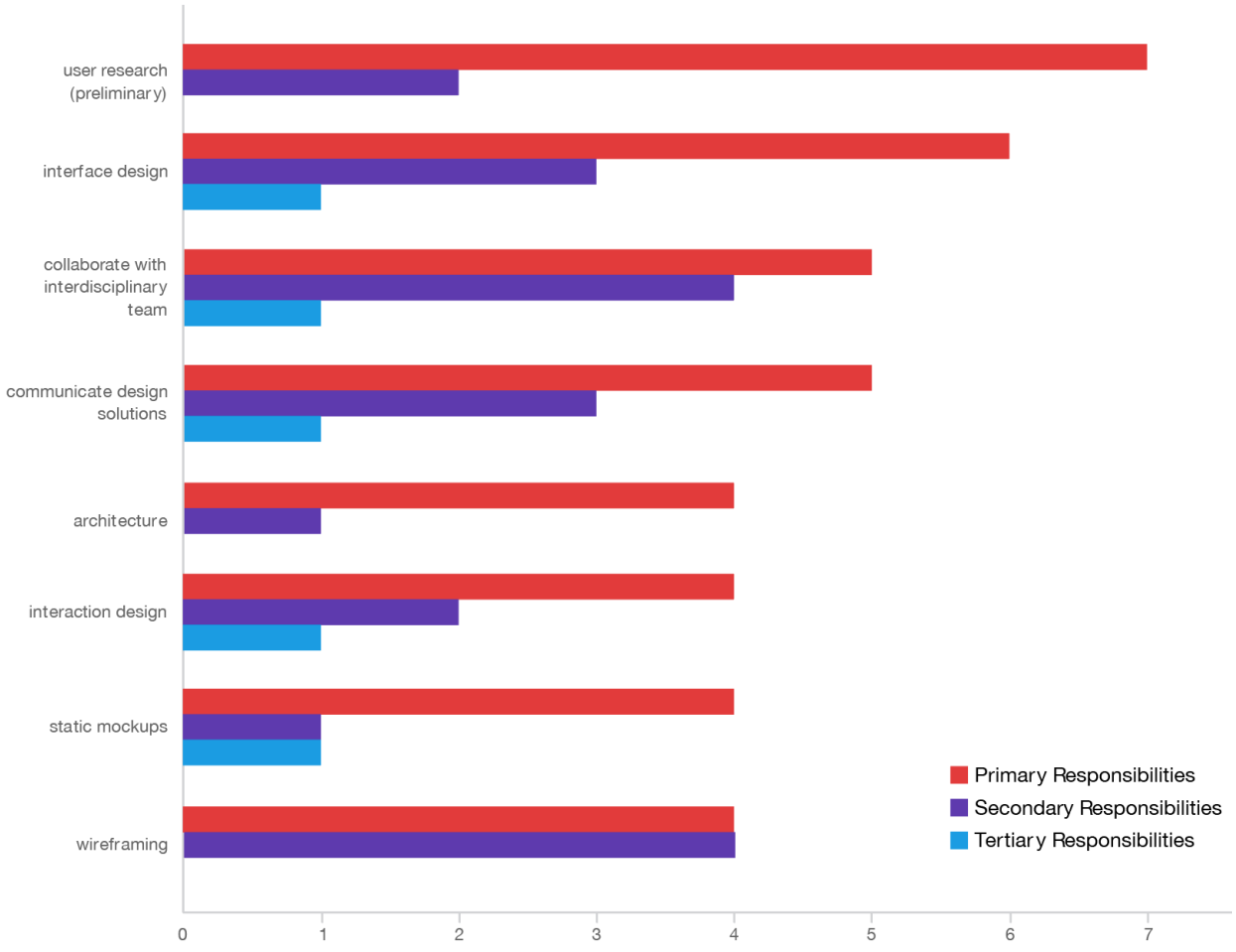


Figure 7. Top five primary UX responsibilities selected by 11 UX managers.

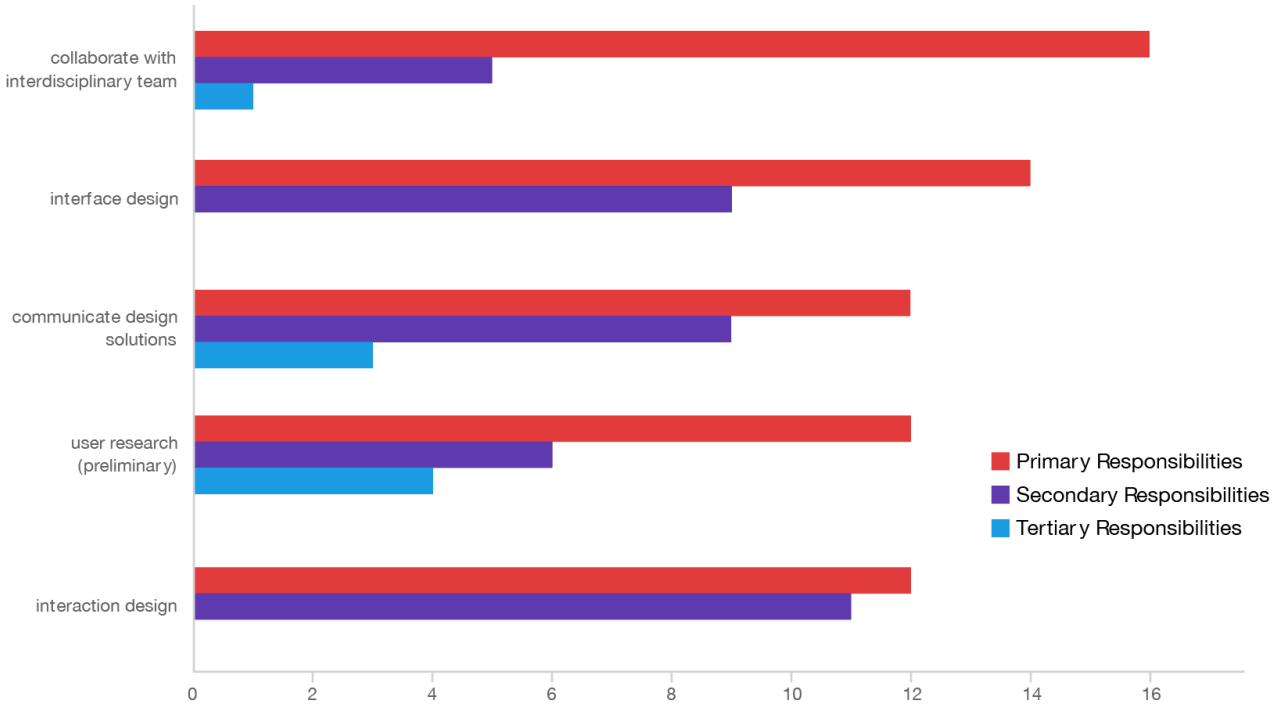


Figure 8. Top five primary UX responsibilities selected by 28 UX designers and researchers.

Regarding the prioritization of soft skills, UX managers and team members were overall aligned with only a few notable differences (see Appendix I). Managers placed a higher importance on sense of responsibility and ownership. Managers also valued discernment and good judgement more than designers and researchers. Designers and researchers placed a higher importance on being a great collaborator, and some considered fitting company culture to be of primary importance, whereas managers considered it to be a secondary or tertiary soft skill.

When comparing the current and ideal percentages of time spent on UX responsibilities during a typical work week, there were many discrepancies (Table 2). Managers thought that more time was spent on advocation, documentation, interface design, and prototyping (including static mockups and wireframes) than was ideal. Managers also thought that less time was spent on journey maps, product testing, and preliminary user research than was ideal. Interface design, documentation, and user research were the responsibilities with the largest discrepancies between managers' perceptions of the time currently being spent and the time that they thought should ideally be spent on UX responsibilities.

Designers and researchers reported that more time was spent on asset creation, development (including CSS, HTML, and JavaScript), and interface design than was ideal, and they reported that less time was spent on journey maps, learning and implementing industry best practices, and preliminary user researcher than was ideal. Results from both UX managers and UX team members show that both parties think that the biggest discrepancies between current and ideal UX practices were in the time that was typically spent on interface design and user research: Too much time was being spent on interface designs and too little time was being spent on user research.

Table 2

Comparison of Current and Ideal Percentages of Time Spent on UX Responsibilities During a Typical Work Week

	Manager			Designer/Researcher			Manager minus Designer/Researcher	
Responsibility	**Current**	**Ideal**	**Current minus Ideal**	**Current**	**Ideal**	**Current minus Ideal**	**Current**	**Ideal**
advocate UX throughout the organization	4.00	1.82	2.18	1.78	3.55	-1.77	2.22	-1.73
architecture	1.82	2.27	-0.45	0.28	1.32	-1.04	1.54	0.95
asset creation	3.82	1.82	2.00	4.95	2.79	2.16	-1.13	-0.97
brand style guide	2.45	2.73	-0.28	0.66	1.68	-1.02	1.79	1.05
collaborate with UX team	4.27	5.91	-1.64	6.53	6.32	0.21	-2.26	-0.41
collaborate with interdisciplinary team	8.64	8.64	0.00	6.17	7.73	-1.56	2.47	0.91
communicate design solutions	5.91	6.82	-0.91	5.99	4.41	1.58	-0.08	2.41
content strategy	0.91	1.36	-0.45	1.55	1.52	0.03	-0.64	-0.16
critique design solutions	4.09	2.73	1.36	2.54	3.79	-1.25	1.55	-1.06
development (CSS, HTML, JavaScript, etc.)	0.45	0.91	-0.46	3.63	1.14	2.49	-3.18	-0.23
documentation	6.82	1.82	5.00	3.81	2.50	1.31	3.01	-0.68
information architecture	1.82	1.64	0.18	4.80	4.89	-0.09	-2.98	-3.25
information systems	0.00	0.00	0.00	0.00	0.54	-0.54	0.00	-0.54
interaction design	6.82	6.36	0.46	5.54	6.79	-1.25	1.28	-0.43
interactive prototypes	5.73	6.36	-0.63	7.44	6.04	1.40	-1.71	0.32
interface design	13.18	7.27	5.91	17.04	9.86	7.18	-3.86	-2.59
journey maps	1.18	3.18	-2.00	0.84	3.21	-2.37	0.34	-0.03
learn & implement industry best practices	0.18	1.36	-1.18	0.66	2.86	-2.20	-0.48	-1.50
market research	0.00	0.91	-0.91	1.40	1.55	-0.15	-1.40	-0.64
navigation	1.36	0.45	0.91	0.53	0.98	-0.45	0.83	-0.53
product style guide	2.00	1.82	0.18	1.27	1.38	-0.11	0.73	0.44
paper sketches	0.45	0.00	0.45	1.96	1.88	0.08	-1.51	-1.88
personas	0.27	0.00	0.27	0.18	0.66	-0.48	0.09	-0.66
product testing	3.18	6.36	-3.18	3.71	4.38	-0.67	-0.53	1.98

static mockups	5.45	3.18	2.27	3.71	2.39	1.32	1.74	0.79
storyboarding	0.00	0.45	-0.45	0.46	0.48	-0.02	-0.46	-0.03
study & report industry trends	0.45	0.64	-0.19	0.58	1.11	-0.53	-0.13	-0.47
user research (preliminary)	6.73	15.45	-8.72	6.05	9.30	-3.25	0.68	6.15
wireframing	8.00	7.73	0.27	1.80	3.68	-1.88	6.20	4.05
other	0.00	0.00	0.00	4.14	1.29	2.85	-4.14	-1.29
Total %	**100**	**100**	**0**	**100**	**100**	**0**	**0**	**0**

Note. The values in the "Current minus Ideal" columns for the manager and the Designer/Researcher categories represent more time than ideal being spent on a responsibility (if positive) or less time than ideal being spent on a responsibility (if negative) according the to the opinions of each respective group. The values in the "Current" column of the "Manager minus Designer/Researcher" category represent managers' overestimation (if positive) or underestimation (if negative) of time that they thought was being spent (based on UX designers and researchers reports of time spent). The values in the "Ideal" column of the "Manager minus Designer/Researcher" category represent discrepancies in the ideal practice of UX design where managers thought more time should be spent (if positive) or less time should be spent (if negative) on each responsibility when compared to their team members.

Table 3 provides a closer look at the top 10 discrepancies presented in the “Manager minus Designer/Researcher” category in Table 2. The values in the “Current (%)” column of Table 3 represent the managers’ overestimation (if positive) or underestimation (if negative) of the percentage of time that they thought was being spent during a typical work week (based on UX designers’ and researchers’ reports of time spent). The values in the “Ideal (%)” column represent discrepancies in the ideal practice of UX design where managers either thought more time should be spent (if positive) or less time should be spent (if negative) on each responsibility when compared to the views of UX team members.

Table 3

Top Ten Discrepancies Between Manager and Designer/Researcher Views of UX Practices (represented in percentages of time during typical work week)

Current Practices: Manager Estimates minus Designer/Researcher Reports			**Ideal Practices: Manager Ideals minus Designer/Researcher Ideals**	
Responsibility/Skill	Current (%)		Responsibility/Skill	Ideal (%)
interface design	-3.86		information architecture	-3.25
development (CSS, HTML, JavaScript, etc.)	-3.18		interface design	-2.59
information architecture	-2.98		paper sketches	-1.88
collaborate with UX team	-2.26		advocate UX throughout the organization	-1.73
interactive prototypes	-1.71		learn & implement industry best practices	-1.50
brand style guide	1.79		brand style guide	1.05
advocate UX throughout the organization	2.22		product testing	1.98
collaborate with interdisciplinary team	2.47		communicate design solutions	2.41
documentation	3.01		wireframing	4.05
wireframing	6.20		user research (preliminary)	6.15
Total Percentage of Work Week	**29.68**		**Total Percentage of Work Week**	**26.59**

Note. The values in the "Current (%)" column represent the managers' overestimation (if positive) or underestimation (if negative) of the percentage of time that they thought was being spent during a typical work week (based on UX designers' and researchers' reports of time spent). The values in the "Ideal (%)" column represent discrepancies in the ideal practice of UX design where managers either thought more time should be spent (if positive) or less time should be spent (if negative) on each responsibility when compared to the views of UX team members.

Regardless of whether the top ten discrepancies of the current or ideal practice of UX is being analyzed, there is almost a total of 30% discrepancy between managers' and team members' estimates and views. Even though managers thought that too much time was being spent on interface design, even more time than they had estimated was being spent on it according to designers and researchers, and even though team members thought that UX processes should include more user research, managers thought that it should be given 6.15% more time, meaning that they felt that it should be given approximately 2.5 more hours of time per week per team member.

Secondary Results. It is important to note, though it has not been at the top of any lists, graphs, and tables thus far in this study, the responsibility of advocating UX is a theme that keeps recurring throughout the data. In Table 3, we note that it shows up again as a top discrepancy in both current and ideal practices.

Design-thinking Workshop: Evaluating Opportunities & Effecting Change

The design-thinking workshop helped validate results from the previous two phases of this study and was a means to test out a prototype of a workshop that could be used by software organizations to assess their current UX design practices and processes and to discuss opportunities for improvement. Execution of the prototype resulted in ideas from UX managers and team members regarding how UX might be improved in software organizations and what steps might be taken to effect change.

Participants. Four UX professionals participated in the design-thinking workshop, including two managers and two designers. The two managers had 2 and 3 years of leadership experience and 5 and 7 years of industry experience. The two designers had 2 and 6 years of experience as UX designers.

Recruitment. Participants were recruited via email and LinkedIn. Participants were asked if they would be interested in reviewing a couple of initial findings from the previous two phases of this research and discussing if the results were reflective of their experiences. They were also asked if they would be willing to participate in a workshop where they would discuss and map out their UX practices and processes at work. Presenting and reviewing results from the previous two phases had two purposes: (1) increase interest in participating in the workshop and (2) discuss and perhaps gain further insights on the results from the previous phases of this study.

Primary results. Participants were shown a table ranking the top 10 skills and responsibilities most frequently mentioned in UX job postings (see Table 2 in the results section of the Affinity Cluster). The researcher explained to each participant that "frequency" does not necessarily mean "most important." Then each participant was asked, "However, if frequency were equated to importance, is this table reflective of the UX skills and responsibilities that are presently most important to your software organization?" There were some common patterns among the responses of each participant from the four workshops. Though software organizations consider research important and would ideally like to include more of it in their design processes, when push comes to shove, research is often left by the wayside or it is done quickly and haphazardly in an effort to gather at least some information or validation. One participant pointed out that organizations might also have varying definitions of research. For example, leadership at some organizations might consider an internal meeting (where employee assumptions, opinions, and experiences with their product or service are gathered) as a form of research, and they might consider it sufficient "research" for their needs. Regardless of the interpretation of research, all participants in the workshop thought that it was, in theory, a very

important part of designing user experiences. However, in practice, very little research actually occurs in subjects' design processes.

Participants also generally disagreed with the idea of "development" as one of the top 10 UX skills and responsibilities. With the exception of one of the participant's team members, neither the participants nor their UX teams actually did any software development. Participants agreed that it is important to understand the constraints of the development languages being used by the organization, but actual coding responsibilities were usually left to software developers.

With some adjustments to the rankings, participants thought that the remaining eight skills and responsibilities in the table were among those that were presently most important to their organizations.

After discussing some of the preliminary results from the first two phases of the study, subjects participated in the "what's on your radar" activity (see Appendix L for completed diagrams), and prioritized responsibilities on the diagram according to what they thought were important for consistently delivering quality user experiences. During this activity, subjects were not given a start list of responsibilities, so they had to come up with the responsibilities on their own. Common themes among the four diagrams included research, collaboration, design processes, visuals (or UI), and interactions. Each participant touched upon each of these themes. However, UX managers and designers with more experience tended to plot more items that dealt with developing and establishing design processes. Designers tended to plot more items that dealt with visual and interactive design.

The experience maps created be each participant shared very similar design and development processes (see Appendix M). One of the organizations did a better job at implementing research and user feedback testing than the other organizations. However, even the

organization that performed more research tended to only do so on very large or very complex initiatives. Two of the organizations collaborated throughout the UX design process with multiple stakeholders outside of the design team. At the other organizations, UX team members tended to do most of their collaboration with a single product owner or product manager. When discussing how organizations might implement positive improvements to their design processes, a common roadblock that was mentioned was time. However, when asked more questions about time constraints, two of the participants conceded that it might be more of an issue of priority than time. Another major roadblock to making changes in design process is leadership. Making changes is hard enough with support from upper management, but it can become extremely difficult without it. Another roadblock mentioned by a couple of participants is that it is often not clear whose job it is to perform certain responsibilities. For example, one designer felt like the product manager was taking over part of his job when the product manager met with and interviewed users without him.

One of the managers suggested that there can be a catch-22 with UX teams at software organizations. If the UX team tries to establish themselves as the department that “owns” UX, then other departments are less likely to collaborate or to look for opportunities to improve the experience of clients and users because they think that is somebody else’s job. However, territorial UX team members can feel like other people and departments are stepping on their toes or taking over the “fun” parts of UX if the responsibility of great user experiences is shared throughout the organization. That same manager believed that user experience design is much bigger than one department and that UX methodologies and practices should be taught throughout the organization so that everyone can do their part to improve customer experiences at every touch point.

Secondary results. Business-to-business software companies tend to design first for their clients and second for their clients' customers. Since the software company is focused on pleasing their clients, this can end up roadblocking UX teams from being able to research how the product can be improved for the end user, because UX teams are constantly responding to feature requests by clients who think that they already know what their customers want.

Discussion

Throughout the three phases of this study, multiple methodologies were used to collect and analyze data regarding the role of UX and UX employees at software organizations, which resulted in the emergence of several patterns and themes. These general themes, along with other results from this study, help define the current practice of UX in software companies and help identify opportunities for improvement.

General Themes

The three phases of this study (1. Affinity Cluster: Analysis of Job Postings, 2. Virtual Design Thinking: Current and Ideal Practice of UX, and 3. Design-thinking Workshop: Evaluating Opportunities and Effecting Change) were designed to create a better understanding of the current practice of UX and to help teams define and develop UX within their organizations. Data was collected and analyzed using several research and design-thinking methods, which helped increase the validity of the general themes that emerged throughout all three phases of this study.

Research is very important—in theory. The affinity cluster, bull's-eye diagrams, current and ideal time calculations, and "what's on your radar" diagrams all supported the fact that research is considered an important part of the UX design process. Yet analysis of many of these same data sources showed that research is used very little throughout the design process

when compared to other top responsibilities such as interface design and prototyping. According to Norman and Nielsen (2017), UX is not just a user interface or usability. However, when much less time is spent on responsibilities such as user research than on interface design, it makes one wonder if there are very many software organizations that truly practice UX design.

Though time was mentioned as a potential roadblock to implementing applied research, it was also suggested that priorities might be a factor. As one participant put it, “In theory, ideally, we would do more research, but it just doesn’t happen.” Another summed up her UX role as follows: “I currently do primary UI design with occasional UX research” (see Appendix J). One of the participants explained why research does not happen:

> In the ideal world we do market research, implement the research, design based on the research and code and build off of the design. In start-ups it’s a little different. My assignments are presented like this: Management: “Hey we need a functioning Landing Page for (insert latest project that came into someone’s mind) and we need it by tomorrow.” Me: “We really don’t have a brand guide yet, I think it might be best to work out some branding, then move to designing and finish by coding the project.” Management: “We really don’t have time for that and it needs to go up immediately. Can you just start coding it and just design it as you code it” Me: “No... but I understand the problem. I’ll do my best to simultaneously design and code this project while having no direction on branding, personas, users, etc.” When working with people who don’t understand the process, everything is a scramble and based off of viable working models. There’s really no time to iterate, build mock-ups, or test samples. It’s not ideal, but it’ll get better in time. (Appendix J)

The fact that research (including various research methods) was mentioned so frequently in UX job postings and was the top primary responsibility listed by managers during the bull's-eye diagram suggests that it is a software business need that, for one reason or another, is not being met. Yes, time could be an issue. There were many job postings that asked for designers or researchers who could work in a fast-paced environment. Though software companies might want more research to be implemented into their design processes, they might be creating an environment so "fast-paced" that it is nigh impossible to make any changes to their processes, let alone introduce new applied research methods. However, time might not be the only issue. Of the 41 UX job postings sampled for this study, eight were for researchers and 33 were for designers. With a ratio of approximately one researcher position to every four designer positions, many UX teams probably do not have a dedicated UX researcher. Though job postings for designers mentioned research 1.89 times per listing, it might be possible that those who are hired for UX designer positions lack the training, and skills (and maybe even the desire) to plan, organize, and execute applied research methods. Due to an increased demand for UX designers (Palmer, 2016), it might be difficult for software organizations to hire talent that has competencies in visual design, interactive design, and research, so they may just settle for someone who can help design their interfaces.

One participant suggested that another roadblock to research is management. Upper management at his work had a very narrow view of research. Thinking that research was limited to focus groups, upper management considered research to be a waste of time.

However, whatever the cause, the fact remains the same: The amount of time and effort that is put into research throughout the design process is not reflective of how important UX professionals say it is. It will require software organizations that are willing to take the time to

evaluate, understand, and adjust their UX design practices if there is any hope of research getting more playing time in UX design processes. One participant suggested that if her team designed its processes so that it better aligned with development and business processes that less time might be wasted, which could open up the door for more research activities to be implemented into UX design processes.

Soft skills. Collaboration and communication were among the top five most frequently listed skills and responsibilities in UX job postings. The importance of these two soft skills was further validated by the results from the bull's-eye and "what's on your radar" diagramming activities. One of the participants of the virtual design-thinking session described the role of UX as follows: "We are kind of the glue that holds the product teams together. We interact a lot with product managers, developers, and business analysts for research, development, testing and all sorts of other design and validation efforts" (Appendix J). As one of the participants from the workshops suggested, the work done by the UX team has no effect without the support of other roles. Thus, it behooves UX teams to make collaboration a top priority. Another participant from the design-thinking workshops described one of her coworkers as brilliant, but held back by the inability to collaborate and communicate well.

Since designers are tasked with visualizing solutions, they are, by nature, visual communicators. However, they must be good verbal communicators as well. Many job postings mention that both designers and researchers will have to present solutions and findings to team members and stakeholders.

Advocate and evangelize. Advocating or evangelizing UX throughout the software organization was a responsibility that was mentioned a surprising number of times in UX job postings. One manager said, "First and foremost we are responsible for advocating for UX in the

company" (Appendix J). Though managers did not rank it as a top primary responsibility on their bull's-eye diagrams, they did list it as a top secondary responsibility. It also received quite a few votes for primary, secondary, and tertiary responsibility from designers and researchers.

The responsibility to advocate UX design throughout the organization seems to suggest that parts of the organization do not know what UX is, that they do not understand its value, or that they do not care about UX design. Neither job postings nor participant comments in the virtual design-thinking activities explain what advocating UX entails. However, it seems that some departments could be put off by a UX department that goes around telling people that UX is important.

Participant 2 from the design-thinking workshop plotted "teaching others roles to implement UX techniques or methods" in the tertiary ring (see Appendix L). Participant 2 seemed to have a great solution for how one could go about "advocating" UX. Rather than trying to convince other departments and roles within the company of its importance, one could equip them with UX techniques and methods necessary for them to make improvements to user experiences within their sphere of work. Participant 2 pointed out that if other roles began using UX techniques and methods, that it might free up some time for the UX team to strengthen weaker parts of its current design process.

Alignment. The results from the bull's-eye and "what's on your radar" diagramming activities show that UX managers and team members are mostly aligned on their prioritization of primary UX responsibilities and skills. In fact, UX managers and team members were of the same mind on the top five primary responsibilities and skills.

The responsibilities that managers ranked as most important in the bull's-eye diagram also aligned with those that were most frequently mentioned in job postings, suggesting that

frequency was indeed an indicator of how much hiring managers valued a given skill or responsibility.

However, even though the general views of managers and team members regarding UX were similar, managers and team members differed on the particulars of how much time they thought should be ideally allocated to various responsibilities (see Table 2 and Table 3). Though some of the differences may seem small, the top 10 differences of opinion between managers and team members regarding how much time should ideally be spent on UX responsibilities results in a 27% misalignment of time and effort, which is equivalent to 11 hours of work per week per UX employee. The loss of 11 hours per week is equivalent to the loss of $27,000 over the course of a year for an employee receiving $100,000 in salary and benefits per year.

There is most likely not a single best set of UX processes for all companies. However, there is a best set of practices for each organization. Like the UX design process itself, UX teams can prototype UX practices (including ideal amounts of time spent on different responsibilities) and test them. Then they can document results, iterate, and improve. There is a lot of time (and consequently money) to be saved by a company that has a UX team that works towards establishing ideal practices and is aligned on how much time is spent on different UX responsibilities.

One of participants from the design-thinking workshop explained that there are also opportunities to align processes across departments. The participant explained that there is a lot of wasted time and effort when UX processes do not fit with development team processes, because time is spent designing solutions that are never implemented.

Contributions to Current Knowledge

In 2017, Adobe surveyed 500 employees to better understand what talents and skills they were seeking in UX designers (Faller, 2017b). Some of results from the Adobe study were similar to those from this study. Both studies show that familiarity with tools, collaboration, discernment, critical thinking, interface design, and basic development skills are among the top-most important responsibilities and skills of UX designers. However, it was strange to find that research skills were nowhere to be found among the top 10 talents and skills listed by Adobe, especially since it was the most frequently mentioned responsibility in the sample of job postings in the first phase of this study. Research was also the top primary responsibility selected by managers in the bull's-eye diagrams in the second phase of this study.

It was interesting to note that Adobe's top UX talents and skills included project management, especially when the closest equivalent skills listed in the 41 job postings sampled in this study were being organized and being able to handle multiple projects. It is possible that these differences are the result of geography, because this study was limited to software organizations in Utah, whereas the Adobe study sampled employers across the nation.

Maccarone and Doody (2016) suggested that if you ask five people what a UX designer does, you will get five distinct answers. The results from this study validate their claim. After reviewing the laundry list of responsibilities that resulted from the analysis of UX job postings, it is not surprising that practitioners would have distinct views on which responsibilities were most important or which set of responsibilities were the very definition of a true UX designer. Participant comments throughout the study showed that many practitioners differed on what skills and qualities were most important to UX design. While some participants said that they mostly designed user interfaces, others said that advocating UX was their most important

responsibility. Yet others suggested that if you don't have empathy for the user, that no amount of interface design, interaction design, or research skills will be enough to create top-notch user experiences.

Norman and Nielsen (2017) made it clear that UX goes far beyond a single profession or department. Several of the job postings in this study mentioned UX professionals and teams "owning" the user experience. Many postings also talked about improving the experience of users at every customer touchpoint. For any organization but the smallest, it is impossible for a single profession or department to manage, monitor, and improve customer experiences at every user touchpoint. A participant in the design-thinking workshop suggested that everyone has a role to play in the design of user experiences. With the plethora of UX responsibilities outlined in 41 job postings, this study supports the fact that companies might want to consider UX design as an aptitude of the company (and all of its employees) rather than the responsibility of a single team or department.

However, if companies want their employees to help improve the experiences of their customers, they need to be clearer about the role of UX in their organization, and they need to have a better understanding of the UX skills and aptitudes that their employees need to have or develop in order to help fill the role and meet the goal of UX. Noah Webster suggested that the indefinite application of terms has mischievous effects and is an efficient cause of political disorder (Zenderland, 1978, p. 59). With UX design being so broadly defined and practiced, a company can experience significant costs in time and effort due to the misalignment of responsibilities and priorities. This study's current and ideal time calculations demonstrated that UX teams could be experiencing nearly 30% loss in time, money, and efficacy due to the misalignment of UX practices and ideals.

With little knowledge of any of the details of the situation, one of the researchers observed a company that rapidly built and, subsequently, quickly displaced a UX team. They likely experienced some of the mischievous effects referred to by Webster of the indefinite application of this new role in their organization. This research study suggests that there is a lot of time, money, and efficiency to be gained by companies who make sure their teams are aligned on UX processes and goals. The design-thinking workshop prototyped in this study might help organizations better align their UX design efforts.

The frequent mention of advocating and evangelizing UX among the responsibilities listed in job postings was an unexpected finding. However, it supports Norman's and Nielsen's (2017) views that UX goes far beyond a single profession or department. With UX often being thought of as every aspect of a person's interaction with a product, service, or company, it makes sense that UX skills and competencies should be advocated throughout the entire organization because the sum of all interactions influences customer perceptions of the company as a whole (Bevan, 2008). However, as one participant in the workshop suggested, "advocating" should be less about trying to convince other employees and departments that they need UX design, and more about showing them how UX design can help them in their own roles by teaching them the methods and providing them with the tools to do so.

Though this study did not add any clarity to the definition of UX, it did support the fact that UX design is a very broadly defined practice. A couple of well-known academics in the design world, Don Norman and Jakob Nielsen, defined UX design by the following characteristics (2017):

- meets the exact needs of the customer without inconvenience

- utilizes simplicity and elegance to create products that are a joy to own and experience
- does not just give users what they want
- does not provide a checklist of features
- is not just a user interface (UI) or just usability
- requires the seamless merging of the services of multiple disciplines

It was clear from the comments and results of this study that most practitioners agreed with Norman's and Nielsen's definition of UX design. However, results from this study also made it clear that even though ideal and theoretical views of academics and practitioners were similar in many regards, the actual practice of UX is still far from ideal. This study suggests that teams should consider being strategic about how they practice UX. After all, UX is a new strategy (Hekkert et al., 2003).

Implications for Practice

Design UX design. Since there is neither a universal definition of UX nor a single magic bullet process for delivering quality user experiences, organizations should expect to experiment, test, and refine their UX design processes. One of the participants in the virtual design-thinking session reported that "UX is new to the company and many of the people within the company are not sure how to work with UX designers" (Appendix J). Organizations that assemble their very first UX team most likely do not know exactly what to expect from their new team. UX professionals should see such a circumstance as an opportunity to help design the UX practices and processes of their organization.

Even in companies with well-established UX teams, there are opportunities to redefine how UX is practiced in the organization. Teams can run their own design-thinking workshops to

gain a better understanding of the different perspectives of UX design throughout their organization and to discuss how they might implement new or underutilized methods and tools in their processes. Companies that do not align their UX efforts run the risk of wasting significant time and money on directionless and unproven processes.

There is room for research. With so much importance being placed on research, yet so little time and effort being allocated towards it, it seems like there might be a competitive advantage to be gained by organizations who figure out how to utilize applied research methodologies throughout their design and development processes.

Raise a new generation of UX professionals. With some of the desired practices of UX being unmet, there is an opportunity for universities and boot camps to adjust their curriculum to help fill unmet needs. Both managers and designers alike thought too much time was being spent on high-fidelity mockups and interface design. Can a new generation of UX professional be taught how to better implement other UX design and research methodologies into their personal processes so that they are able to bring more value to the companies for which they work? For companies with designers who might be lacking in certain skill sets, would it be worth the investment to get them some additional training?

Programs that train future UX designers should consider how they might prepare their students for highly collaborative environments where their graduates will be required to clearly communicate ideas and solutions. Maccarone and Doody (2016) claimed that many students entering the UX workforce are ill-prepared to implement the principles and methodologies of UX. A couple of participants in this study suggested collaboration and communication are just as important as any other responsibility of UX, because the implementation of UX design is dependent on other roles in the organization, such as customer service, development, and product

management. Since collaboration and communication were among the most important responsibilities and skills of UX professionals, it is not enough for programs to just teach their students hard skills like prototyping and interface design. Programs should consider how they might help their students develop soft skills (such as collaboration and communication) so their graduates can have a greater impact in their future roles as UX professionals.

Limitations

This study was limited to samples gathered from Utah-based software companies (including job postings and UX professionals). Though Utah has become a hub for software companies over the past decade, the generalizability of the results from this study may vary depending on the maturity and breadth of UX practice in other locations.

Forty-one UX job postings were collected over the period of 1 week. Due to the numerous ways that people post jobs both on and offline (including local newspaper sites and company websites), it was not feasible to gather a complete census of UX job postings in Utah over the course of 1 week. Though 41 is a sizeable sample, it is possible that a larger sample size could yield different results.

Ninety-six UX professionals were invited to participate in a virtual design-thinking session. Thirty-nine subjects participated with an overall response rate of 41%. The sample size and the response rate are limitations to this phase of the study since a larger sample or a higher response rate could potentially yield different results. Of the 39 participants, 11 were managers, 28 were designers, and one was a researcher. Though this ratio of participants may be reflective of the proportion of different UX jobs at software companies, the participation of just one researcher is another limitation of this study.

Recommendations for Future Research

Validation with broader populations. Because this study assessed UX positions within the limited scope of a defined geographic area over a few months, the generalizability of the findings may vary depending on the maturity and breadth of UX practice in other locations. Replicating this study with more mature or populous UX communities—such as those in San Francisco, Chicago, or New York—would refine, counter, and validate the findings of this study and yield insights for UX practice applicable to more software organizations and practitioners. Another opportunity for validating the results of this study and improving the generalizability of its findings would be to sample other UX communities in a broader longitudinal study. This would account for fluctuations in hiring due to seasonality or events such as major employer relocations or mass layoffs.

Validation with other methodologies. Another opportunity for validation lies in applying different collection and analysis methodologies to the study of job postings and real versus actual UX practice. For example, having UX professionals journal the amount of time that they spend on different responsibilities throughout a week would provide data that could refine, counter, and validate the findings from the self-reported amount of time spent on job responsibilities.

Design-based research workshop study. Another potentially valuable line of inquiry would be to examine the efficacy of a workshop program to improve UX practice in organizations. A design-based research study would provide the opportunity to examine, iterate, and refine such a workshop in real time. Pioneered by Brown and Collins, the design-based research method uses learning interventions as a vehicle for studying both the effectiveness and ecological validity of the intervention's methods and principles within cycles of iterative

improvement (Brown, 1992; Collins, 1992). A multi-phase study that applies, iterates, and evaluates the UX workshop discussed previously would provide a unique perspective on workshop outcomes and practical improvements to the workshop itself.

Conclusion

Amidst the debate about what is and is not UX design, there is an opportunity. There is an opportunity for teams and organizations to explore their current and ideal UX practices and to redefine how they deliver quality user experiences to their customers. A famous quote that is often attributed to Albert Einstein states, “Insanity is doing the same thing over and over again and expecting different results.” It would be insane to think that something is going to magically improve how UX is practiced at an organization when one is not willing to make some changes.

If UX teams want to change and improve their practice of UX, then they need to do things differently. A great way to evaluate opportunities for improvement and to kickstart change within an organization is to run a design-thinking workshop (like the one prototyped in this study). Organizations need to make sure to involve not only UX team members, but also other departments and co-workers, and make sure that everybody’s opinions, thoughts, and ideas are heard.

References

Böhm, A. (2004). Theoretical coding: Text analysis in grounded theory. In U. Hick, E. Kardoff, & L. Steinke (Eds.), *A companion to qualitative research* (pp. 270-275). London: Sage Publications.

Bevan, N. (2008, April 5). *UX, usability and ISO standards*. Paper presented at CHI 2008: The ACM CHI Conference on Human Factors in Computing Systems. Florence, Italy. Retrieved from http://www.cs.tut.fi/ihte/CHI08_workshop/papers/Bevan_UXEM_CHI08_06April08.pdf

Bloc. (2015, March 11). Job trends report: The job market for UX/UI designers [Blog post]. Retrieved from https://blog.bloc.io/job-market-for-ux-ui-designers/

Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The Journal of the Learning Sciences*, *2*(2), 141-178. https://doi.org/10.1207/s15327809jls0202_2

Collins, A. (1992). Toward a design science of education. In E. Scanlon & T. O'Shea (Eds.), *New directions in educational technology* (pp. 15-22). New York, NY: Springer-Verlag.

Ewing, S., McGowan, J. M., Speed, C., & Bernie, V. C. (Eds). (2011). *Architecture and field/work*. New York, NY: Routledge.

Faller, P. (2017, February 3). Hiring trends in UX design: The 6 things you need to know about tech's fastest growing field [Blog post]. Retrieved from https://blogs.adobe.com/creativecloud/hiring-trends-in-ux-design-the-6-things-you-need-to-know-about-techs-fastest-growing-field/

Faller, P. (2017, February 3). How different companies define the role of UX when hiring [Blog post]. Retrieved from https://theblog.adobe.com/how-different-companies-define-the-role-of-ux-when-hiring/

Farrell, S., & Nielsen, J. (2014). *User experience careers: How to become a UX pro, and how to hire one* [White paper]. Retrieved February 1, 2017, from http://media.nngroup.com.s3.amazonaws.com/media/reports/free/User_Experience_Careers.pdf

Flowers, E. (2012, December 15). UX is not UI. Retrieved October 30, 2017, from https://ux.stackexchange.com/questions/69720/what-is-the-difference-between-human-factors-and-ux-design

Glaser, B. G. (1978). *Theoretical sensitivity*. Mill Valley, CA: The Sociology Press.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, IL: Aldine.

Grant, A. M. (2016). *Originals: How non-conformists move the world*. New York, NY: Viking.

Hassenzahl, M. (2008). User experience (UX): Towards an experiential perspective on product quality. In *Proceedings of the 20th Conference on l'Interaction Homme-Machine* (pp. 11–15). New York, NY: ACM. Retrieved from http://dl.acm.org/citation.cfm?id=1512717

Hassenzahl, M., & Tractinsky, N. (2006). User experience - a research agenda. *Behaviour & Information Technology*, *25*(2), 91-97. https://doi.org/10.1080/01449290500330331

Hausknecht, J. P., & Trevor, C. O. (2011). Collective turnover at the group, unit, and organizational levels: Evidence, issues, and implications. *Journal of Management*, *37*(1), 352-388.

Hekkert, P., Mostert, M., & Stompff, G. (2003). Dancing with a machine: A case of experience-driven design. In *Proceedings of the 2003 International Conference on Designing Pleasurable Products and Interfaces* (pp. 114–119). New York, NY: ACM. Retrieved from http://dl.acm.org/citation.cfm?id=782925

Hogan, A., Laufer, D., Truog, D., Willsea, W., & Birrell, R. (2016). *The six steps for justifying better UX* [White paper]. Retrieved October 3, 2017, from https://www.forrester.com/report/The+Six+Steps+For+Justifying+Better+UX/-/E-RES117708

IBM100 - Good Design Is Good Business. (2012). [CTB14]. Retrieved November 8, 2017, from http://www-03.ibm.com/ibm/history/ibm100/us/en/icons/gooddesign/

Kaasinen, E., Roto, V., Hakulinen, J., Heimonen, T., Jokinen, J. P. P., Karvonen, H., … Turunen, M. (2015). Defining user experience goals to guide the design of industrial systems. *Behaviour & Information Technology*, *34*(10), 976-991. https://doi.org/10.1080/0144929X.2015.1035335

Kilgore, W. (2016, June 20). UX to LX: The rise of learner experience design. Retrieved February 1, 2017, from https://www.edsurge.com/news/2016-06-20-ux-to-lx-the-rise-of-learner-experience-design

Kucheriavy, A. (2015, November 9). Good UX is good business: How to reap its benefits [Blog post]. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2015/11/19/good-ux-is-good-business-how-to-reap-its-benefits/#7ca934324e51

Kujala, S., Roto, V., Väänänen-Vainio-Mattila, K., Karapanos, E., & Sinnelä, A. (2011). UX curve: A method for evaluating long-term user experience. *Interacting with Computers*, *23*(5), 473-483.

Kumar, V. (2012). *101 design methods: A structured approach for driving innovation in your organization*. Hoboken, NJ: John Wiley & Sons, Inc.

Kuniavsky, M. (2010). *Smart things: Ubiquitous computing user experience design.* Amsterdam; Boston: Morgan Kaufmann Publisher.

Lamprecht, E. (2017, January 13). The difference between UX and UI design: A layman's guide [Blog post]. Retrieved February 1, 2017, from https://careerfoundry.com/en/blog/ux-design/the-difference-between-ux-and-ui-design-a-laymans-guide/

LUMA Institute (2012). *Innovating for people: Handbook of human-centered design methods*. Pittsburgh, PA: LUMA Institute, LLC.

Maccarone, D., & Doody, S. (2016, May 16). The UX of learning UX is broken [Blog post]. Retrieved March 26, 2017, from https://medium.com/@danmaccarone/the-ux-of-learning-ux-is-broken-f972b27d3273

McMaster University. (2017). TAPoR: Text analysis portal for research [Web software]. Retrieved February 1, 2017, from http://taporware.ualberta.ca/~taporware/textTools/.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

Moss, P., & Tilly, C. (2001). *Stories employers tell: Race, skill, and hiring in America*. New York, NY: Russell Sage Foundation.

Nielsen Norman Group. (2016, July 2). Don Norman: The term "UX" [Video]. Retrieved February 1, 2017, from https://www.youtube.com/watch?time_continue=60&v=9BdtGjoIN4E

Norman, D. A. (2013). *The design of everyday things* (2nd ed.). New York, NY: Basic Books.

Norman, D., & Nielsen, J. (2017). *The definition of user experience (UX)* [White paper]. Retrieved February 1, 2017, from https://www.nngroup.com/articles/definition-user-experience/

Osgood, C. E. (1959). The representational model and relevant research methods. In I. Pool (Ed.), *Trends in content analysis* (pp. 33-88). Champaign, IL: University of Illinois Press.

Palmer, A. (2016, August 11). Seriously though, what is UX design really? [Blog post]. Retrieved March 26, 2017, from https://thenextweb.com/dd/2016/08/11/what-the-hell-is-ux-design/

Precisely, E. (2013, January 26). The disciplines of user experience design [Infographic]. Retrieved September 29, 2017, from https://visual.ly/community/infographic/computers/disciplines-user-experience-design

Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, *15*(1), 85-109. https://doi.org/10.1177/1525822X02239569

Saffer, D. (2008, December 4). The disciplines of user experience [Blog post]. Retrieved from http://www.kickerstudio.com/2008/12/the-disciplines-of-user-experience/.

SCRC SocioCultural Research Consultants, LLC. (2017). Dedoose [Web software]. Retrieved February 1, 2017, from http://www.dedoose.com

Strauss, A. (1987). *Qualitative analysis for social scientists*. Cambridge, UK: Cambridge University Press.

The Best Job Sites for 2017. (2017, January 25). Retrieved April 17, 2017, from http://www.reviews.com/job-sites/

Thomas, S. (2017, February 5). 2017 Best career apps & websites to land your next job. Retrieved February 1, 2017, from http://www.huffingtonpost.com/sherri-thomas/2017-best-career-apps-web_b_14626898.html

Tsukamoto, S. (2016). KWIC Concordance (5.3) [Software]. Retrieved February 1, 2017, from http://www.chs.nihon-u.ac.jp/eng_dpt/tukamoto/kwic_e.html

Wilson, M. (2014, March 27). IBM invests $100 million to expand design business. *Fast Co*. Retrieved February 1, 2017, from https://www.fastcodesign.com/3028271/ibm-invests-100-million-to-expand-design-business

Zenderland, L. (2015). *Recycling the past: Popular uses of American history*. Philadelphia, PA: University of Pennsylvania Press.

Appendix A

UX Designer Tenure

Participant	Job#	Job Tite	Company	Start	Stop	Yrs.	Mths.	Total (Mths)	Avg. (Mths)	
A	1	Interaction Designer	Remedy MD	Apr 2007	May 2008	1	2	14		
A	2	UX Designer	Cook Medical	Jul 1905	Jul 1905	1	0	12		
A	3	UX Manager	Adobe Analytics	May 2010	Sep 2013	3	5	41		
A	4	Director of User Experience	Remedy Informatics	Sep 2013	May 2014	0	9	9	19.00	19.00
A	5	Director of User Experience	Lucid Software Inc.	Jun 2014	Present	3	8	44	24.00	
B	1	Web & Graphic Designer	Overstock.com	Apr 2008	Apr 2012	4	1	49		
B	2	UX Graphic Designer	Alliance Health Networks	May 2012	Aug 2013	1	4	16		
B	3	Senior Web Designer	Clearlink	Oct 2013	Nov 2014	1	2	14	26.33	26.33
B	4	UX Designer	Experticity	Nov 2014	Present	3	3	39	29.50	
C	1	UX Designer	The Church of Jesus Christ of Latter-day Saints	Sep 2013	Oct 2015	2	2	26	26.00	26.00
C	2	UX Designer	FranklinCovey	Oct 2015	Present	2	4	28	27.00	
D	1	Lead Product Designer	The Church of Jesus Christ of Latter-day Saints	Jul 2007	Sep 2012	5	3	63		
D	2	Design Manager	The Church of Jesus Christ of Latter-day Saints	Oct 2012	Oct 2013	1	1	13		
D	3	Director of User Experience	Workfront	Oct 2015	Jun 2015	1	9	21		
D	4	Product Designer	Ghostery	Jun 2015	Feb 2017	1	9	21		
D	5	Director, Product Design	Evidon	Feb 2017	Jan 2018	1	0	12	26.00	26.00

D	6	Director, User Experience	Nav	Jan 2018	Present	0	1	1	21.83	
E	1	User Experience Designer	AtTask	Dec 2012	Apr 2014	1	5	17		
E	2	Sr. UX Designer	inContact	Apr 2014	Feb 2017	2	11	35	26.00	26.00
E	3	Director of User Experience	RizePoint	Mar 2017	Present	0	11	11	21.00	
F	1	Interactive Designer	Datamark	Mar 2006	May 2007	1	3	15		
F	2	Interactive Designer	Red Olive Design	May 2006	Dec 2008	2	8	32		
F	3	Interactive Designer	Humaniz Interactive	Jan 2009	Sep 2009	0	9	9		
F	4	UI Engineer -> Senior UX Designer	Experticity	Jun 2010	Jun 2015	5	0	60		
F	5	Mobile Product Design Lead	Instructure	Jun 2015	Dec 2015	0	7	7		
F	6	Principal Product Designer -> Director, Product Design	Needle	Jan 2016	Apr 2017	1	4	16	23.17	23.17
F	7	Director, Product Design	Jane.com	Apr 2017	Present	0	10	10	21.29	
G	1	Web Designer	StoresOnline	Apr 2001	Dec 2004	3	9	45		
G	2	Web Designer / Front End Developer	MarketPartner	Feb 2008	Aug 2008	0	7	7		
G	3	Front End Developer / Web Designer	Rivetal	Sep 2008	Aug 2011	3	0	36		
G	4	User Interface Designer - mobile -> UX Interaction Designer - mobile	Overstock.com	Oct 2011	Jul 2015	3	10	46	33.50	33.50
G	5	UX Designer	MasteryConnect	Jul 2015	Present	2	7	31	33.00	
H	1	User Experience & User Interface Designer	SirsiDynix	Aug 2012	Feb 2014	1	7	19		

H	2	Sr. UX Designer	HealthEquity	Feb 2014	Oct 2014	0	9	9		
H	3	Sr. UX Designer	Sling TV	Oct 2014	Sep 2015	1	0	12		
H	4	Sr. UX Designer	HireVue	Sep 2015	Feb 2017	1	6	18	14.50	14.50
H	5	Product & User Experience Manager	GoReact	Feb 2017	Present	1	0	12	14.00	
I	1	UX Developer	Degreed	Oct 2013	Feb 2014	0	5	5		
I	2	User Experience Designer	BambooHR	Feb 2014	Jan 2015	1	0	12		
I	3	User Experience Designer -> Product Team Lead	Canopy, Inc.	Jan 2015	Mar 2017	2	3	27	14.67	14.67
I	4	Product Manager	Pluralsight	Mar 2017	Present	0	11	11	13.75	
J	1	Senior UI Developer/Senior Graphic Designer	SolutionsStream	May 2007	Mar 2008	0	11	11		
J	2	Lead UI Developer	Riser Media	May 2008	Apr 2009	1	0	12		
J	3	Senior UX Designer / UI Developer	Orange Soda	Mar 2009	Aug 2013	4	6	54		
J	4	UX Designer	SolutionReach	Aug 2013	May 2016	2	10	34		
J	5	Senior UX Designer	MaritzCX	May 2016	Mar 2017	0	11	11	24.40	24.40
J	6	Senior UX Designer	Collective Medical Technologies, Inc	Mar 2017	Present	0	11	11	22.17	
							Avg. Mths		23.36	

Appendix B

Open Coding Start List

- **Company attributes**
    - Industry
    - Company size
    - Company maturity/age
- **Role attributes**
    - Title
    - Specialization
    - Direct reports:
        - Upline (supervisor)
        - Downline
    - Maturity of product or UX team
    - Skills
        - Required
        - Preferred
    - Experience
        - Required
            - Number of years
        - Preferred
            - Number of years
    - Education or credentials
        - Required
        - Preferred
    - Responsibilities
            - Architecture
            - Information architecture
            - Content strategy
            - Navigation
            - Information Systems
        - Design
            - Personas or journey maps (no research)
            - Interface (UI) design
            - Interaction (IxD) design
            - Prototyping
                - Paper sketches
                - Wireframing
                    - Tools: Axure, Balsamiq, Visio
                - Static mockups

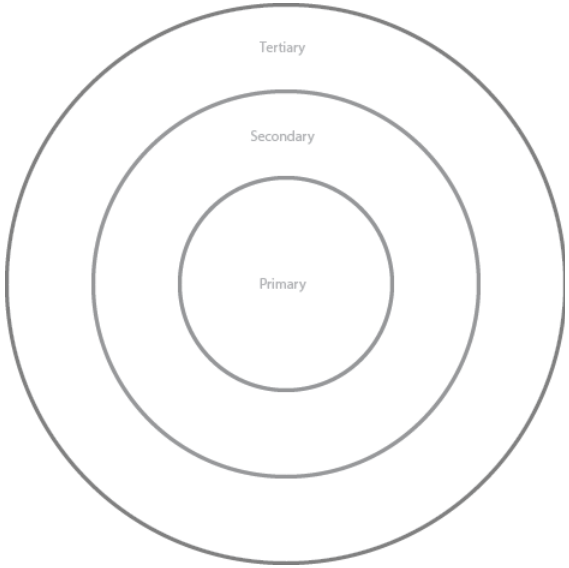
        - Tools: Adobe Illustrator/Photoshop, Sketch3, etc.
    - Interactive prototypes
        - Tools: InVision, Adobe XD, UX Pin, etc.
- Style Guide
- Documentation
    - JIRA
    - Confluence

- Development
    - HTML
    - CSS
    - JavaScript: Angular, Ember, React
- Management
    - Management level
    - Team type:
        - Design, development, interdisciplinary
- Research
    - User research (preliminary)
        - Card sorting, tree testing, surveys, interviews, focus groups
        - Personas or journey maps (research required)
    - Market research
        - Competitive, business intelligence, customer
    - Product testing
        - Quality Assurance (QA), validation, user acceptance testing (UAT), usability testing

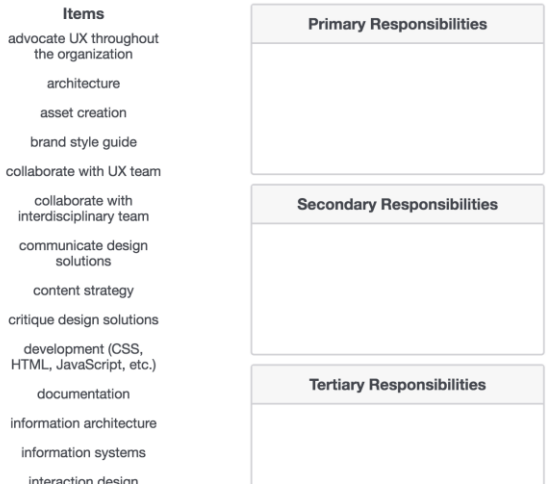
Appendix C

Bull's-Eye Diagram

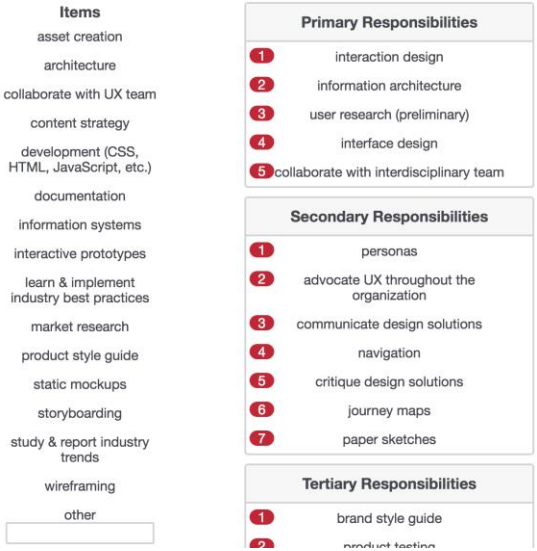
Traditional Bull's-Eye Diagram



Virtual Adaptation of Bull's-Eye Diagram



Virtual Adaptation of Bull's-Eye Diagram (completed):



Appendix D

Qualtrics Survey

Designing UX

Start of Block: Cover Letter & Consent

Q50 You are invited to participate in a research survey, entitled "Designing User Experience Design: Determining the Role of UX in Software Organizations." The study is being conducted by Seth Christensen and Dr. Joan Dickinson of the Design Department of Radford University (Box 6967, Radford, VA 24142 / Phone: 540-831-5386 / jidickins@radford.edu). The purpose of this study is to examine the current and desired practice of user experience (UX) design at software companies. Your participation in the survey will contribute to a better understanding of how teams view and practice UX design. We estimate that it will take about 10-15 minutes of your time to complete the questionnaire. You are free to contact the investigator at the above address and phone number to discuss the survey. Risks to participants are considered minimal. There will be no costs for participating, nor will you directly benefit from participating. Personal identifiers and IP addresses **will not** be collected during this study. Only the two researchers mentioned above will have access to the data during data collection. Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty. If you have any questions, would like to withdraw from the study, wish to update your email address, or would like a hard copy of the survey, please contact Seth Christensen (schristensen1@radford.edu) or Joan Dickinson (jidickins@radford.edu / 540-831-6164). This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Laura J. Jacobsen, Interim Dean, College of Graduate Studies and Research, Radford University, ljacobsen@radford.edu, 540-831-5470. If you agree to participate, **please press the arrow button at the bottom right of the screen.** Otherwise, close the internet browser tab or window to disconnect.

Thank you.

End of Block: Cover Letter & Consent

Start of Block: Manager or UX Employee?

1 Which of the following best describes you?

- ○ I manage and/or hire employees for a UX team. (e.g. Director, Manager, VP, etc.) (1)
- ○ I am a contributing member of a UX team. (e.g. UI Designer, IxD Designer, UX designer, Product Designer, UX Researcher, Usability Researcher, etc.) (2)

End of Block: Manager or UX Employee?

Start of Block: Manager - Demographics

MD1 What is your job title?

- ○ Design Manager (1)
- ○ UX Manager (2)
- ○ VP of Design (3)
- ○ Other (4) _____

MD2 How many years of experience do you have in software UX design?

_____

MD3 How many years of experience do you have managing software UX teams?

_____

MD4 In what year was the company for which you currently work founded?

_____

MD5 Approximately how many employees are at the company for which you currently work?

_____

MD6 For which type of company do you work?

- ○ Product (creates and sells own product) (1)
- ○ Services (agency, consulting company, etc.) (2)
- ○ Nonprofit (3)
- ○ Other (4) _____

MD7 What are the job titles of members of your UX team?

Note: Please select all that apply. If members of your UX team hold job titles that are not listed below, please add them to the list and select them.

- ☐ UI Designer (1)
- ☐ IxD Designer (2)
- ☐ UX Designer (3)
- ☐ Product Designer (4)
- ☐ UX Researcher (5)
- ☐ Usability Researcher (6)
- ☐ Other (7) _____
- ☐ Other (8) _____
- ☐ Other (9) _____
- ☐ Other (10) _____
- ☐ Other (11) _____

MD8 How many employees are on your UX team?

_____

MD9 Are there other UX teams at your company?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Are there other UX teams at your company? = Yes

MD10 How many UX teams are there at your company?

_____

End of Block: Manager - Demographics

Start of Block: Manager - Responsibilities

MR1 What are the primary, secondary, and tertiary responsibilities of your UX team? Please limit primary responsibilities to **five** items and secondary responsibilities to **ten** items.

Note: Drag and drop responsibilities into the appropriate containers. Within each container prioritize each responsibility by clicking and dragging it up or down. If an item in the list does not reflect a responsibility of your team, do not use it. If your team has responsibilities not reflected in the list, please add and prioritize them.

Primary Responsibilities	Secondary Responsibilities	Tertiary Responsibilities
_____ advocate UX throughout the organization (1)	_____ advocate UX throughout the organization (1)	_____ advocate UX throughout the organization (1)
_____ architecture (2)	_____ architecture (2)	_____ architecture (2)
_____ asset creation (3)	_____ asset creation (3)	_____ asset creation (3)
_____ brand style guide (4)	_____ brand style guide (4)	_____ brand style guide (4)
_____ collaborate with UX team (5)	_____ collaborate with UX team (5)	_____ collaborate with UX team (5)
_____ collaborate with interdisciplinary team (6)	_____ collaborate with interdisciplinary team (6)	_____ collaborate with interdisciplinary team (6)
_____ communicate design solutions (7)	_____ communicate design solutions (7)	_____ communicate design solutions (7)
_____ content strategy (8)	_____ content strategy (8)	_____ content strategy (8)
_____ critique design solutions (9)	_____ critique design solutions (9)	_____ critique design solutions (9)
_____ development (CSS, HTML, JavaScript, etc.) (10)	_____ development (CSS, HTML, JavaScript, etc.) (10)	_____ development (CSS, HTML, JavaScript, etc.) (10)
_____ documentation (11)	_____ documentation (11)	_____ documentation (11)
_____ information architecture (12)	_____ information architecture (12)	_____ information architecture (12)
_____ information systems (13)	_____ information systems (13)	_____ information systems (13)
_____ interaction design (14)	_____ interaction design (14)	_____ interaction design (14)
_____ interactive prototypes (15)	_____ interactive prototypes (15)	_____ interactive prototypes (15)
_____ interface design (16)	_____ interface design (16)	_____ interface design (16)
_____ journey maps (17)	_____ journey maps (17)	_____ journey maps (17)
_____ learn & implement industry best practices (18)	_____ learn & implement industry best practices (18)	_____ learn & implement industry best practices (18)
_____ market research (19)	_____ market research (19)	_____ market research (19)

_____ navigation (20)	_____ navigation (20)	_____ navigation (20)
_____ product style guide (21)	_____ product style guide (21)	_____ product style guide (21)
_____ paper sketches (22)	_____ paper sketches (22)	_____ paper sketches (22)
_____ personas (23)	_____ personas (23)	_____ personas (23)
_____ product testing (24)	_____ product testing (24)	_____ product testing (24)
_____ static mockups (25)	_____ static mockups (25)	_____ static mockups (25)
_____ storyboarding (26)	_____ storyboarding (26)	_____ storyboarding (26)
_____ study & report industry trends (27)	_____ study & report industry trends (27)	_____ study & report industry trends (27)
_____ user research (preliminary) (28)	_____ user research (preliminary) (28)	_____ user research (preliminary) (28)
_____ wireframing (29)	_____ wireframing (29)	_____ wireframing (29)
_____ other (30)	_____ other (30)	_____ other (30)
_____ other (31)	_____ other (31)	_____ other (31)
_____ other (32)	_____ other (32)	_____ other (32)
_____ other (33)	_____ other (33)	_____ other (33)
_____ other (34)	_____ other (34)	_____ other (34)
_____ other (35)	_____ other (35)	_____ other (35)

MR2 Please explain/justify why you selected and arranged the primary responsibilities the way that you did.

_____

_____

_____

_____

_____

End of Block: Manager - Responsibilities

Start of Block: Manager - Soft Skills

MS1 What are the most, second most, and third most important soft skills for your UX team? Please limit the most important to **three** soft skills and the second most important to **five** soft skills.
Note: Drag and drop soft skills into the appropriate containers. Within each container prioritize each soft skill by clicking and dragging it up or down. If an item in the list does not reflect a soft skill that is important to your team, do not use it. If there are soft skills that are important to your team but are not reflected in the list, please add and prioritize them.

Most Important Soft Skills	Second Most Important Soft Skills	Third Most Important Soft Skills
_____ detail oriented (1)	_____ detail oriented (1)	_____ detail oriented (1)
_____ discerning / good judgement (2)	_____ discerning / good judgement (2)	_____ discerning / good judgement (2)
_____ empathetic (3)	_____ empathetic (3)	_____ empathetic (3)
_____ familiar with business processes (4)	_____ familiar with business processes (4)	_____ familiar with business processes (4)
_____ familiar with design processes (5)	_____ familiar with design processes (5)	_____ familiar with design processes (5)
_____ familiar with development processes (6)	_____ familiar with development processes (6)	_____ familiar with development processes (6)
_____ fits company culture (7)	_____ fits company culture (7)	_____ fits company culture (7)
_____ great collaborator (8)	_____ great collaborator (8)	_____ great collaborator (8)
_____ great communicator (9)	_____ great communicator (9)	_____ great communicator (9)
_____ industry-specific experience/knowledge (10)	_____ industry-specific experience/knowledge (10)	_____ industry-specific experience/knowledge (10)
_____ organization (11)	_____ organization (11)	_____ organization (11)
_____ passionate about UX (12)	_____ passionate about UX (12)	_____ passionate about UX (12)
_____ reliability (13)	_____ reliability (13)	_____ reliability (13)
_____ sense of responsibility/ownership (14)	_____ sense of responsibility/ownership (14)	_____ sense of responsibility/ownership (14)
_____ shows initiative (15)	_____ shows initiative (15)	_____ shows initiative (15)
_____ works well independently (16)	_____ works well independently (16)	_____ works well independently (16)
_____ other (17)	_____ other (17)	_____ other (17)
_____ other (18)	_____ other (18)	_____ other (18)
_____ other (19)	_____ other (19)	_____ other (19)
_____ other (20)	_____ other (20)	_____ other (20)
_____ other (21)	_____ other (21)	_____ other (21)

Q15 Please explain/justify why you selected and arranged the most important soft skills the way that you did.

_____

_____

_____

_____

_____

End of Block: Manager - Soft Skills

Start of Block: Manager - Tools 1

MT1 Does it matter to you and/or the company which tools your team uses to execute its work?
Note: Tools encompass any instrument used by an employee to complete their work. They might include software such as Adobe CC, Sketch, Invision, Microsoft Office, Google Suite, Slack, and they might include analog items such as whiteboards, sticky notes, etc.

- ○ No, we don't care what tools are used so long as the job gets done. (1)
- ○ Yes, we prefer certain tools that work better with our design, development, and business processes. (2)

Display This Question:

If Does it matter to you and/or the company which tools your team uses to execute its work? Note: To... = Yes, we prefer certain tools that work better with our design, development, and business processes.

MT2 Are prospective employees required to know how to use certain tools?

- ○ No. They can learn on the job. (1)
- ○ No. As long as they have used something similar before, they can learn on the job. (2)
- ○ Yes, they must have prior experience with some of the same tools used by the department and/or company. (3)

Display This Question:

If Are prospective employees required to know how to use certain tools? = Yes, they must have prior experience with some of the same tools used by the department and/or company.

MT3 Which tools are prospective employees required to know how to use to be considered for employment?

_____

_____

_____

_____

_____

End of Block: Manager - Tools 1

Start of Block: Manager - Tools 2

MT4 What are the primary, secondary, and tertiary tools used by your UX team? Please limit primary tools to **four** items and secondary tools to **eight** items.
Note: Drag and drop tools into the appropriate containers. Within each container prioritize each tool by clicking and dragging it up or down. If an item in the list does not reflect a tool that is important to your team, do not use it. If your team uses tools not reflected in the list, please add and prioritize them.

Primary Tools	Secondary Tools	Tertiary Tools
_____ Adobe Illustrator (1)	_____ Adobe Illustrator (1)	_____ Adobe Illustrator (1)
_____ Adobe Photoshop (2)	_____ Adobe Photoshop (2)	_____ Adobe Photoshop (2)
_____ Adobe Indesign (3)	_____ Adobe Indesign (3)	_____ Adobe Indesign (3)
_____ Adobe XD (4)	_____ Adobe XD (4)	_____ Adobe XD (4)
_____ Axure (5)	_____ Axure (5)	_____ Axure (5)
_____ Balsamiq (6)	_____ Balsamiq (6)	_____ Balsamiq (6)
_____ Google Suite (7)	_____ Google Suite (7)	_____ Google Suite (7)
_____ InVision (8)	_____ InVision (8)	_____ InVision (8)
_____ Microsoft Office (9)	_____ Microsoft Office (9)	_____ Microsoft Office (9)
_____ Paper (10)	_____ Paper (10)	_____ Paper (10)
_____ Sketch3 (11)	_____ Sketch3 (11)	_____ Sketch3 (11)
_____ Slack (12)	_____ Slack (12)	_____ Slack (12)
_____ Sticky Notes (13)	_____ Sticky Notes (13)	_____ Sticky Notes (13)
_____ UX Pin (14)	_____ UX Pin (14)	_____ UX Pin (14)
_____ Visio (15)	_____ Visio (15)	_____ Visio (15)
_____ WebEx (16)	_____ WebEx (16)	_____ WebEx (16)
_____ Whiteboard (17)	_____ Whiteboard (17)	_____ Whiteboard (17)
_____ Zoom (18)	_____ Zoom (18)	_____ Zoom (18)
_____ Other (19)	_____ Other (19)	_____ Other (19)
_____ Other (20)	_____ Other (20)	_____ Other (20)
_____ Other (21)	_____ Other (21)	_____ Other (21)
_____ Other (22)	_____ Other (22)	_____ Other (22)
_____ Other (23)	_____ Other (23)	_____ Other (23)

MT5 Please explain/justify why you selected and arranged the primary tools the way that you did.

_____

_____

_____

_____

_____

End of Block: Manager - Tools 2

Start of Block: Manager - Current Time

MCT **Currently...** What percentage of time does your UX team spend on the following activities during a typical work week? *Note: Please assign percentages to each item. If your team spends time on activities not reflected in the list, please add them to the list and assign percentages to them.*

advocate UX throughout the organization : _____ (1)
architecture : _____ (2)
asset creation : _____ (3)
brand style guide : _____ (4)
collaborate with UX team : _____ (5)
collaborate with interdisciplinary team : _____ (6)
communicate design solutions : _____ (7)
content strategy : _____ (8)
critique design solutions : _____ (9)
development (CSS, HTML, JavaScript, etc.) : _____ (10)
documentation : _____ (11)
information architecture : _____ (12)
information systems : _____ (13)
interaction design : _____ (14)
interactive prototypes : _____ (15)
interface design : _____ (16)
journey maps : _____ (17)
learn & implement industry best practices : _____ (18)
market research : _____ (19)
navigation : _____ (20)
product style guide : _____ (21)
paper sketches : _____ (22)
personas : _____ (23)
product testing : _____ (24)
static mockups : _____ (25)
storyboarding : _____ (26)
study & report industry trends : _____ (27)
user research (preliminary) : _____ (28)
wireframing : _____ (29)
other : _____ (30)
other : _____ (31)
other : _____ (32)
other : _____ (33)
other : _____ (34)
other : _____ (35)
Total : _____

End of Block: Manager - Current Time

Start of Block: Manager - Ideal Time

MIT **In a perfect world...** What percentage of time do you think your UX team should spend on the following activities during a typical work week to deliver great user experiences? *Note: Please assign percentages to each item. If your team should spend time on activities not reflected in the list, please add them to the list and assign percentages to them.*

advocate UX throughout the organization : _____ (1)
architecture : _____ (2)
asset creation : _____ (3)
brand style guide : _____ (4)
collaborate with UX team : _____ (5)
collaborate with interdisciplinary team : _____ (6)
communicate design solutions : _____ (7)
content strategy : _____ (8)
critique design solutions : _____ (9)
development (CSS, HTML, JavaScript, etc.) : _____ (10)
documentation : _____ (11)
information architecture : _____ (12)
information systems : _____ (13)
interaction design : _____ (14)
interactive prototypes : _____ (15)
interface design : _____ (16)
journey maps : _____ (17)
learn & implement industry best practices : _____ (18)
market research : _____ (19)
navigation : _____ (20)
product style guide : _____ (21)
paper sketches : _____ (22)
personas : _____ (23)
product testing : _____ (24)
static mockups : _____ (25)
storyboarding : _____ (26)
study & report industry trends : _____ (27)
user research (preliminary) : _____ (28)
wireframing : _____ (29)
other : _____ (30)
other : _____ (31)
other : _____ (32)
other : _____ (33)
other : _____ (34)
other : _____ (35)
Total : _____

End of Block: Manager - Ideal Time

Start of Block: Employee - Demographics

Q28 What is your job title?

- UI Designer (1)
- IxD Designer (2)
- UX Designer (3)
- Product Designer (4)
- UX Researcher (5)
- Usability Researcher (6)
- Other (7) _____

Q29 How many years of experience do you have in software UX design?

_____

Q31 In what year was the company for which you currently work founded?

_____

Q32 Approximately how many employees are at the company for which you currently work?

_____

Q33 For which type of company do you work?

- Product (creates and sells own product) (1)
- Services (agency, consulting company, etc.) (2)
- Nonprofit (3)
- Other (4) _____

Q35 How many employees are on your UX team?

_____

Q36 Are there other UX teams at your company?

- Yes (1)
- No (2)

Display This Question:
If Are there other UX teams at your company? = Yes

Q37 How many UX teams are there at your company?

_____

End of Block: Employee - Demographics

Start of Block: Employee - Responsibilities

Q38 What are the primary, secondary, and tertiary responsibilities of your UX team? Please limit primary responsibilities to **five** items and secondary responsibilities to **ten** items.

Note: Drag and drop responsibilities into the appropriate containers. Within each container prioritize each responsibility by clicking and dragging it up or down. If an item in the list does not reflect a responsibility of your team, do not use it. If your team has responsibilities not reflected in the list, please add and prioritize them.

Primary Responsibilities	Secondary Responsibilities	Tertiary Responsibilities
_____ advocate UX throughout the organization (1)	_____ advocate UX throughout the organization (1)	_____ advocate UX throughout the organization (1)
_____ architecture (2)	_____ architecture (2)	_____ architecture (2)
_____ asset creation (3)	_____ asset creation (3)	_____ asset creation (3)
_____ brand style guide (4)	_____ brand style guide (4)	_____ brand style guide (4)
_____ collaborate with UX team (5)	_____ collaborate with UX team (5)	_____ collaborate with UX team (5)
_____ collaborate with interdisciplinary team (6)	_____ collaborate with interdisciplinary team (6)	_____ collaborate with interdisciplinary team (6)
_____ communicate design solutions (7)	_____ communicate design solutions (7)	_____ communicate design solutions (7)
_____ content strategy (8)	_____ content strategy (8)	_____ content strategy (8)
_____ critique design solutions (9)	_____ critique design solutions (9)	_____ critique design solutions (9)
_____ development (CSS, HTML, JavaScript, etc.) (10)	_____ development (CSS, HTML, JavaScript, etc.) (10)	_____ development (CSS, HTML, JavaScript, etc.) (10)
_____ documentation (11)	_____ documentation (11)	_____ documentation (11)
_____ information architecture (12)	_____ information architecture (12)	_____ information architecture (12)
_____ information systems (13)	_____ information systems (13)	_____ information systems (13)
_____ interaction design (14)	_____ interaction design (14)	_____ interaction design (14)
_____ interactive prototypes (15)	_____ interactive prototypes (15)	_____ interactive prototypes (15)
_____ interface design (16)	_____ interface design (16)	_____ interface design (16)
_____ journey maps (17)	_____ journey maps (17)	_____ journey maps (17)
_____ learn & implement industry best practices (18)	_____ learn & implement industry best practices (18)	_____ learn & implement industry best practices (18)

_____ market research (19)	_____ market research (19)	_____ market research (19)
_____ navigation (20)	_____ navigation (20)	_____ navigation (20)
_____ product style guide (21)	_____ product style guide (21)	_____ product style guide (21)
_____ paper sketches (22)	_____ paper sketches (22)	_____ paper sketches (22)
_____ personas (23)	_____ personas (23)	_____ personas (23)
_____ product testing (24)	_____ product testing (24)	_____ product testing (24)
_____ static mockups (25)	_____ static mockups (25)	_____ static mockups (25)
_____ storyboarding (26)	_____ storyboarding (26)	_____ storyboarding (26)
_____ study & report industry trends (27)	_____ study & report industry trends (27)	_____ study & report industry trends (27)
_____ user research (preliminary) (28)	_____ user research (preliminary) (28)	_____ user research (preliminary) (28)
_____ wireframing (29)	_____ wireframing (29)	_____ wireframing (29)
_____ other (30)	_____ other (30)	_____ other (30)
_____ other (31)	_____ other (31)	_____ other (31)
_____ other (32)	_____ other (32)	_____ other (32)
_____ other (33)	_____ other (33)	_____ other (33)
_____ other (34)	_____ other (34)	_____ other (34)
_____ other (35)	_____ other (35)	_____ other (35)

Q39 Please explain/justify why you selected and arranged the primary responsibilities the way that you did.

_____

_____

_____

_____

_____

End of Block: Employee - Responsibilities

Start of Block: Employee - Soft Skills

Q40 What are the most, second most, and third most important soft skills for your UX team? Please limit the most important to **three** soft skills and the second most important to **five** soft skills.

Note: Drag and drop soft skills into the appropriate containers. Within each container prioritize each soft skill by clicking and dragging it up or down. If an item in the list does not reflect a soft skill that is important to your team, do not use it. If there are soft skills that are important to your team but are not reflected in the list, please add and prioritize them.

Most Important Soft Skills	Second Most Important Soft Skills	Third Most Important Soft Skills
_____ detail oriented (1)	_____ detail oriented (1)	_____ detail oriented (1)
_____ discerning / good judgement (2)	_____ discerning / good judgement (2)	_____ discerning / good judgement (2)
_____ empathetic (3)	_____ empathetic (3)	_____ empathetic (3)
_____ familiar with business processes (4)	_____ familiar with business processes (4)	_____ familiar with business processes (4)
_____ familiar with design processes (5)	_____ familiar with design processes (5)	_____ familiar with design processes (5)
_____ familiar with development processes (6)	_____ familiar with development processes (6)	_____ familiar with development processes (6)
_____ fits company culture (7)	_____ fits company culture (7)	_____ fits company culture (7)
_____ great collaborator (8)	_____ great collaborator (8)	_____ great collaborator (8)
_____ great communicator (9)	_____ great communicator (9)	_____ great communicator (9)
_____ industry-specific experience/knowledge (10)	_____ industry-specific experience/knowledge (10)	_____ industry-specific experience/knowledge (10)
_____ organization (11)	_____ organization (11)	_____ organization (11)
_____ passionate about UX (12)	_____ passionate about UX (12)	_____ passionate about UX (12)
_____ reliability (13)	_____ reliability (13)	_____ reliability (13)
_____ sense of responsibility/ownership (14)	_____ sense of responsibility/ownership (14)	_____ sense of responsibility/ownership (14)
_____ shows initiative (15)	_____ shows initiative (15)	_____ shows initiative (15)
_____ works well independently (16)	_____ works well independently (16)	_____ works well independently (16)
_____ other (17)	_____ other (17)	_____ other (17)
_____ other (18)	_____ other (18)	_____ other (18)
_____ other (19)	_____ other (19)	_____ other (19)
_____ other (20)	_____ other (20)	_____ other (20)
_____ other (21)	_____ other (21)	_____ other (21)

Q41 Please explain/justify why you selected and arranged the most important soft skills the way that you did.

_____

_____

_____

_____

_____

End of Block: Employee - Soft Skills

Start of Block: Employee - Tools 1

Q44 Does it matter to the company and/or your manager which tools you use to execute your work?
Note: Tools encompass any instrument used by an employee to complete their work. They might include software such as Adobe CC, Sketch, Invision, Microsoft Office, Google Suite, Slack, and they might include analog items such as whiteboards, sticky notes, etc.

- ○ No, the company and/or manager does not care what tools are used so long as the job gets done. (1)
- ○ Yes, the company and/or manager prefer certain tools that work better with our design, development, and business processes. (2)

Display This Question:

If Does it matter to the company and/or your manager which tools you use to execute your work? Note:... = Yes, the company and/or manager prefer certain tools that work better with our design, development, and business processes.

Q45 Did you have to know how to use certain tools in order to get your current job?

- ○ No. I learned how to use them on the job. (1)
- ○ No. The company and/or manager figured that as long as I had used something similar before, that I could learn how to use new tools on the job. (2)
- ○ Yes, I had to have prior experience with some of the same tools used by the department and/or company. (3)

Display This Question:

If Did you have to know how to use certain tools in order to get your current job? = Yes, I had to have prior experience with some of the same tools used by the department and/or company.

Q46 Which tools were you required to know how to use to get your current job?

_____

_____

_____

_____

_____

End of Block: Employee - Tools 1

Start of Block: Employee -Tools 2

Q47 How many hours do you spend using the following tools during a typical week?
Note: You can use decimals (e.g. 0.5, 1.25, 2.75). If you spend time using tools not reflected in the list, please add them to the list and assign hours to them.
Adobe Illustrator : _____ (1)
Adobe Photoshop : _____ (2)
Adobe Indesign : _____ (3)
Adobe XD : _____ (4)
Axure : _____ (5)
Balsamiq : _____ (6)
Google Suite : _____ (7)
InVision : _____ (8)
Microsoft Office : _____ (9)
Paper : _____ (10)
Sketch3 : _____ (11)
Slack : _____ (12)
Sticky Notes : _____ (13)
UX Pin : _____ (14)
Visio : _____ (15)
WebEx : _____ (16)
Whiteboard : _____ (17)
Zoom : _____ (18)
Other : _____ (19)
Other : _____ (20)
Other : _____ (21)
Other : _____ (22)
Other : _____ (23)
Total : _____

End of Block: Employee -Tools 2

Start of Block: Employee - Current Time

Q42 **Currently**, how many **hours** do you spend on the following activities during a typical work week? *Note: You can use decimals (e.g. 0.5, 1.25, 2.75). If you spend time on activities not reflected in the list, please add them to the list and assign **hours** to them.*

advocate UX throughout the organization : _____ (1)
architecture : _____ (2)
asset creation : _____ (3)
brand style guide : _____ (4)
collaborate with UX team : _____ (5)
collaborate with interdisciplinary team : _____ (6)
communicate design solutions : _____ (7)
content strategy : _____ (8)
critique design solutions : _____ (9)
development (CSS, HTML, JavaScript, etc.) : _____ (10)
documentation : _____ (11)
information architecture : _____ (12)
information systems : _____ (13)
interaction design : _____ (14)
interactive prototypes : _____ (15)
interface design : _____ (16)
journey maps : _____ (17)
learn & implement industry best practices : _____ (18)
market research : _____ (19)
navigation : _____ (20)
product style guide : _____ (21)
paper sketches : _____ (22)
personas : _____ (23)
product testing : _____ (24)
static mockups : _____ (25)
storyboarding : _____ (26)
study & report industry trends : _____ (27)
user research (preliminary) : _____ (28)
wireframing : _____ (29)
other : _____ (30)
other : _____ (31)
other : _____ (32)
other : _____ (33)
other : _____ (34)
other : _____ (35)
Total : _____

End of Block: Employee - Current Time

Start of Block: Employee - Ideal Time

Q43 **In a perfect/ideal world**, what **percentage** of time do you think the entire UX team should spend on the following activities during a typical work week to deliver great user experiences? *Note: Please assign **percentages** to each item. If your team should spend time on activities not reflected in the list, please add them to the list and assign percentages to them.*

advocate UX throughout the organization : _____ (1)
architecture : _____ (2)
asset creation : _____ (3)
brand style guide : _____ (4)
collaborate with UX team : _____ (5)
collaborate with interdisciplinary team : _____ (6)
communicate design solutions : _____ (7)
content strategy : _____ (8)
critique design solutions : _____ (9)
development (CSS, HTML, JavaScript, etc.) : _____ (10)
documentation : _____ (11)
information architecture : _____ (12)
information systems : _____ (13)
interaction design : _____ (14)
interactive prototypes : _____ (15)
interface design : _____ (16)
journey maps : _____ (17)
learn & implement industry best practices : _____ (18)
market research : _____ (19)
navigation : _____ (20)
product style guide : _____ (21)
paper sketches : _____ (22)
personas : _____ (23)
product testing : _____ (24)
static mockups : _____ (25)
storyboarding : _____ (26)
study & report industry trends : _____ (27)
user research (preliminary) : _____ (28)
wireframing : _____ (29)
other : _____ (30)
other : _____ (31)
other : _____ (32)
other : _____ (33)
other : _____ (34)
other : _____ (35)
Total : _____

End of Block: Employee - Ideal Time

Start of Block: Employee - Personal Time

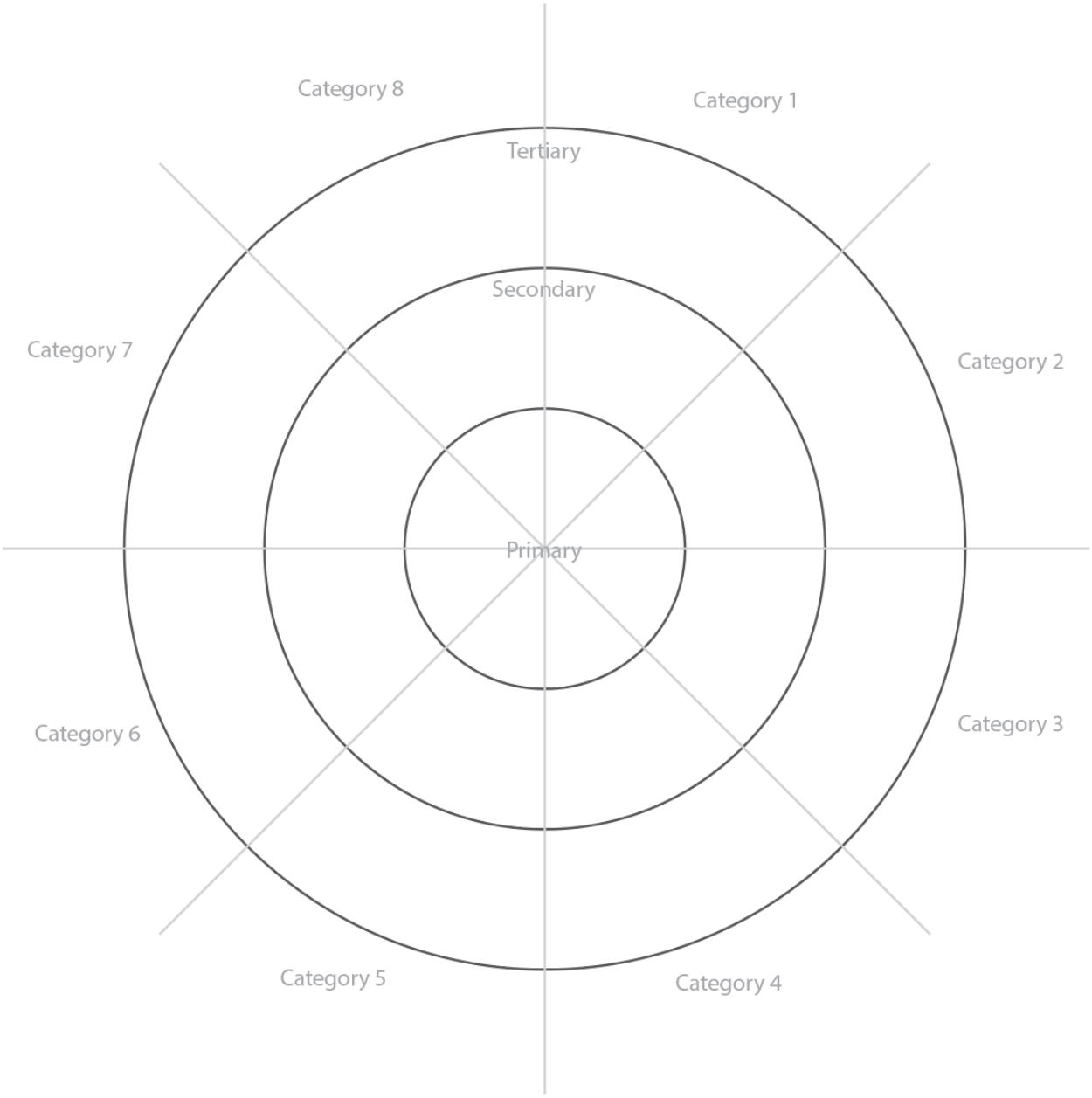
Q49 **In an ideal/perfect world**, how many hours would you personally like to spend on the following activities during a typical work week? *Note: You can use decimals (e.g. 0.5, 1.25, 2.75). If you would like to spend time on work activities not reflected in the list, please add them to the list and assign hours to them.*

advocate UX throughout the organization : _____ (1)
architecture : _____ (2)
asset creation : _____ (3)
brand style guide : _____ (4)
collaborate with UX team : _____ (5)
collaborate with interdisciplinary team : _____ (6)
communicate design solutions : _____ (7)
content strategy : _____ (8)
critique design solutions : _____ (9)
development (CSS, HTML, JavaScript, etc.) : _____ (10)
documentation : _____ (11)
information architecture : _____ (12)
information systems : _____ (13)
interaction design : _____ (14)
interactive prototypes : _____ (15)
interface design : _____ (16)
journey maps : _____ (17)
learn & implement industry best practices : _____ (18)
market research : _____ (19)
navigation : _____ (20)
product style guide : _____ (21)
paper sketches : _____ (22)
personas : _____ (23)
product testing : _____ (24)
static mockups : _____ (25)
storyboarding : _____ (26)
study & report industry trends : _____ (27)
user research (preliminary) : _____ (28)
wireframing : _____ (29)
other : _____ (30)
other : _____ (31)
other : _____ (32)
other : _____ (33)
other : _____ (34)
other : _____ (35)
Total : _____

End of Block: Employee - Personal Time

Appendix E

What's on Your Radar Diagram



Appendix F

Thematic Code Matrix

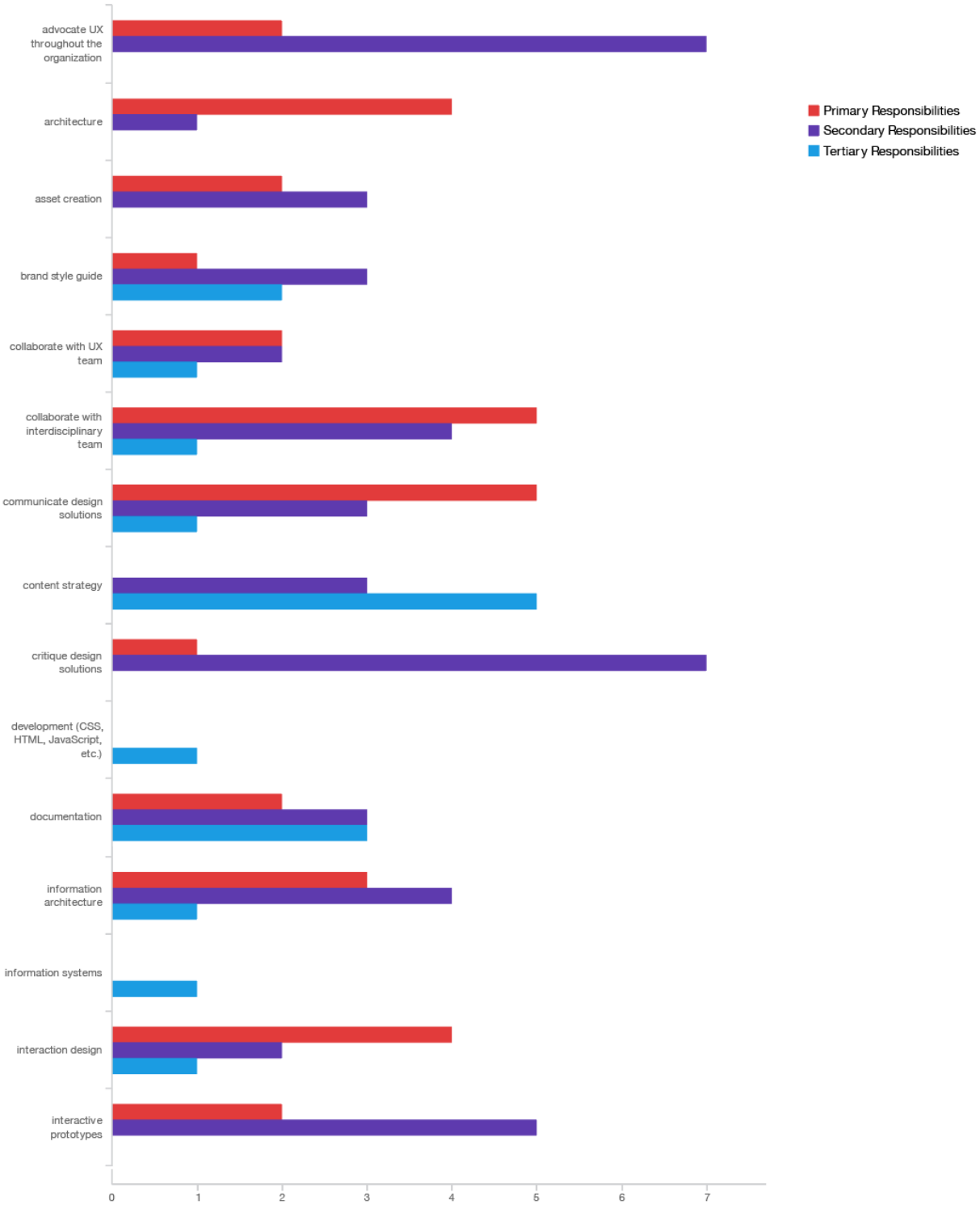
This matrix visualizes counts and clusters of codes that emerged during the analysis of 41 UX job postings.

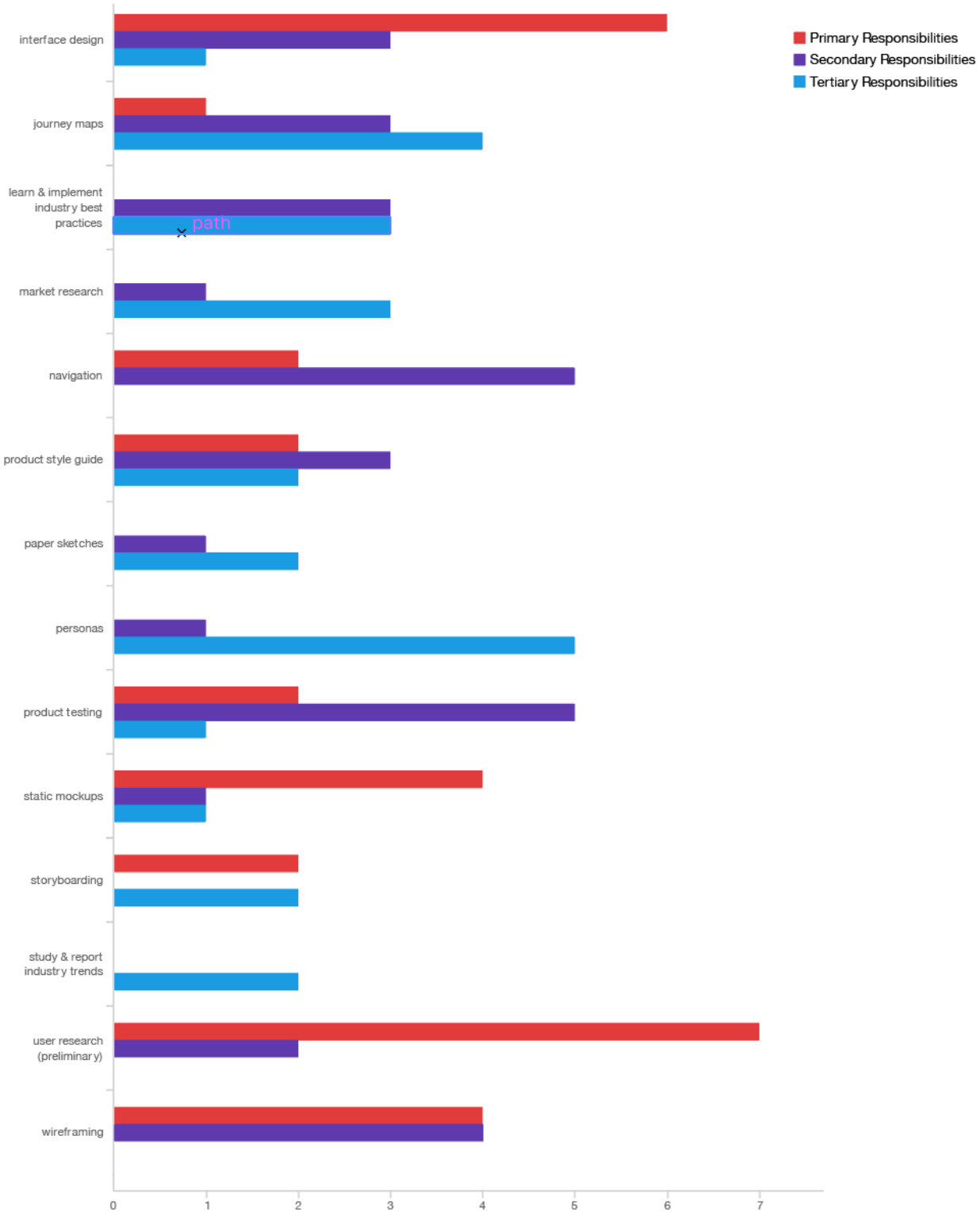
Job Posting #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	Totals
SKILLS & RESPONSIBILITIES																																										
ARCHITECTURE	1	1										2								1					1			1					1				3		1	1		13
Architecture - Unspecified																																	1									1
Information Architecture	1	1										2								1					1			1									3		1	1		12
Navigation																												1														1
Asset Creation	1										1								1				1	1	1		3											1					10
Business Objectives - Meet		1								3			1			3	1	1			1	1	1				1				1	1	1	1	1		1					20
Code - Familiarity							1			1								1						1	1			1	1		1		1	1			2			1	1	14
Complexity & Synthesis				1	1	2	3	2		1		1			1	2	1	1	1	1	4	1		3			2		3		1	4		3	1	1	1			1	1	45
Consistency - Ensure		1																								1	3						1				1					7
DEVELOPMENT	2	3	4	0	0	0	0	0	2	0	0	3	0	3	0	4	3	0	6	3	0	0	3	0	0	0	3	0	0	1	1	0	0	0	0	0	3	3	0	0	0	47
CSS	1	1	2						1			1		1		1	1		1	1			1				1											1	1				15
Development - Unspecified		1														1			2	1									1													6
HTML	1	1	2						1			1		1		1	1		1	1			1				1											1	1				15
JavaScript (Angular, Ember, React)												1		1		1	1		2				1				1				1						1	1				11
Data Visualization																				2														1								3
Define - Problems & Opportunities													1								1		1				2					2			2	1		1		2	13
Delight - Result of Design			1									1		1		1	1					1															1	1	2	1		11
Detail Oriented	1	1	1								2		1												1		1			1		1					2				1	13
Documentation	2				2	2	1				1	1					1	1	1				1	2	1	2	1	1			1		1	1								24
Human/User-centered, Design Thinking	1				1	1			1				1					2				1			1									2								14
Implementation - See Through to End																				1														1								2
Industry-specific Knowledge	2		1	1			1		1	2		1		2			3	1							1			3										1				20
Interaction Design (IxD)				2		1						4	1		2	1	1	2	1	1			1	3	1	1	1	2					2	3			2		3	3	1	39
Interface Design (UI)	3	2	1	5		3		1	1	1	2	4	2	1	1	1	3	1	1	3		3	1	5	3	2	2			1	1		3	4		4	1	2	3	4	75
PROTOTYPING	3	1	1	1				5	3	3	3	4	5		5	5	3	4	1	1		5	3	6	3	1	8	3			3		2	4	2		6	3	4	3	1	105
High Fidelity	1							1		1			1			2									1		1							1	1					1	1		12
Interactive Prototypes															2			1						2			1				1						2			1		10
Paper Sketches													1			1						1	1				1								1							6
Prototyping - Unspecified	1	1	1	1				2	1	1	1	2	2		2	2	2	1	1	1		2	1	1			1	2			1		1	2			2	2	2	1	1	41
Static Mockups									1		1													2																		4
Wireframes	1							2	1	1	1	2	1		1		1	2				2	1	1	2	1	5				1		1	1			2	1	1			32
PROTOTYPING TOOLS	2	2	3	3	2		1		3	1	5	1	1		3	1	1	3	3	4			5	6		2	5		2	4			1			3	1		4			72
ADOBE - CS/CC/Unspecified	1	1	1	1	1				1	1								1							1		1	1			1											12
Adobe After Effects																								1																			1
Adobe Illustrator/Photoshop											1								1	1				1	1					1							1		1			8
Adobe Indesign																								1																			1
Adobe XD																				1					2																		3
Axure											1							1							1			1															4
Balsamiq																												1														1
InVision			1	1	1				1		1				1				1	1																			1				9
Prototyping Tools - Unspecified							1				1	1	1		1	1	1							1			1				3			1					1			15
Sketch3	1	1	1	1					1		1				1			1	1	1				1	1			1		1							1				1	16
UX Pin																												1														1
Visio																																					1					1
Personas / Journey Maps (no research)	1					1																					1	1					1			1						6
Plan					1	1		1		1						1	1							2				2			4	1			1	2		1			19
Platform-specific Expertise	2		2	1					1	1	2		1				1			1				1				3		1	2		4		1		2	1	1	1	29
Platforms - Experience with Most		1		1						1						2		1			1	2			1			1		1		1				1					14
Processes - Dev/Bus/UX			1	2		3	2		2	2				2		1	2	1		1				3		1	2	2		1			1			3			1		33
Processes - Establish																		1												1	2		1		1	2					8
RESEARCH	1	1	2	1	3	10	6	11	1	2		6	2	3	2	2		3		3	5	1	1	4	2	1	4	5	12	1	1	9	11	4		4	7	5	7	3		146
Market Research						1																		1			1		2				2						1			8
Product Testing	1	1	2		1	4	2	6		2		3	2	3		1		2		1	1	1		1	1	1	1	1	5		1	2	4	2			2	3	3	1		61
Research - Unspecified				1	1	2	1	1													3		1					1	2			6	2			1	2					24
User Research - Preliminary					1	3	3	4	1			3			2	1		1		2	1			2	1		2	3	3	1		1	3	2			3	3	2	3	2		53
Simplicity - Design for																																			1					1	4	6
Standup Meetings																															1			1								2
Storyboarding										1					1	1		1				1		1	1		1	1															9
Strategy	1							1		1				1		1		1				1	1				1					1		1	2	2					1	16
Style Guide	1			1							1		1			1	1	1	1					1	1	2	1	1					2	1			1				2	20
Trends & Best Practices	1	2	1			1		3	1	1	1	1				1	2	1	2	1				1	2				2		3	1	1	4		1		1		1	1	37
User, Work & Task Flows	1					1				1		1	1		1			3				1	1		1	1	2	1				1	2	1			2		1			24

SOFT SKILLS & RESPONSIBILITIES																																										
Advocate / Evangelist						1			1			1			2	2		4				1										2			1	3	1	1				20
Attitude - Positive		2	1																			1			1												1	1				7
Collaboration	2	4			3	3	2		1	3	1	1	3	3	4	3	2	3	1	1	1	3	1	4	6		4	1	3	2	2	3	3	6	4	4	6	2	3	2	2	102
Communication	1	3	1		2	3	4	4		1	1	1		2	1	2	2	4			3	3	3	3	1	1	3	1	5	2	1	4	2	2	2	1	6	1	2			78
Critique & Feedback - Give & Receive										2						2	1	2					1	1	2		3	1					2	2	2	1	2				1	25
Discernment						2									1						1								1												1	6
Empathy				1										1																												2
Fast-paced										1			1			1		1		3		1			1		1			1	1			1						2		15
Flexible		2																				2							1													5
Independent																	1				1			1	1		2		1							1						8
Initiative / Self-Motivated		1				1						1		2		1	1							1	2		2											1		1	1	15
Learn & Grow		2	2													1		1			1				1				1		1										1	11
Mentorship & Leadership			3					1								1				2	2								5			2	2			3	3	2				26
Organized		2				1	1		1	1			1			1	1	2			1						2		2	1		1					2		1			21
Ownership		1								1				1	2		1						1															1	1		1	10
Passion			3	3						1	1				1	2	1			1			1				1			1		2					3	1		3		25
Reliability & Work Ethic		1					1		1	1		2				1	1			1										3									2			14
PROFESSION PREPARATION																																										
Company Size-Specific Experience																			1																							1
Education - Preferred	1								1																							1				1	1					5
Education - Required		1		1			1			1	1	1	1		2	1	1	1	1		1	1	1	1				1	1			1	1	1			1		1		1	25
Experience - Min Preferred				1			2																							1												4
Experience - Min Required		2			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	2	1	1			1	1	1		1	1	1	1	1		35
TITLE																																										
Product Designer									1																													1	1	1		4
UI/UX Designer		1	1																				1	1	1	1	1			1	1											9
UX Designer									1	1	1	1	1	1	1	1	1	1	1	1		1											1	1	1		1				1	18
UX Interaction Designer				1																																						1
UX Researcher					1	1	1	1													1							1	1			1				1						9
Web Designer	1																																									1
TEAM TYPE																																										
Design							1							1						1																						3
Development														1																												1
Interdisciplinary																		1	1					1					1					1		2	1				1	9
Code Total	31	38	29	26	17	39	29	31	24	37	24	38	27	27	35	48	39	52	24	34	26	33	24	48	50	15	63	31	54	18	28	43	44	57	18	31	82	31	36	35	30	1446

Appendix G

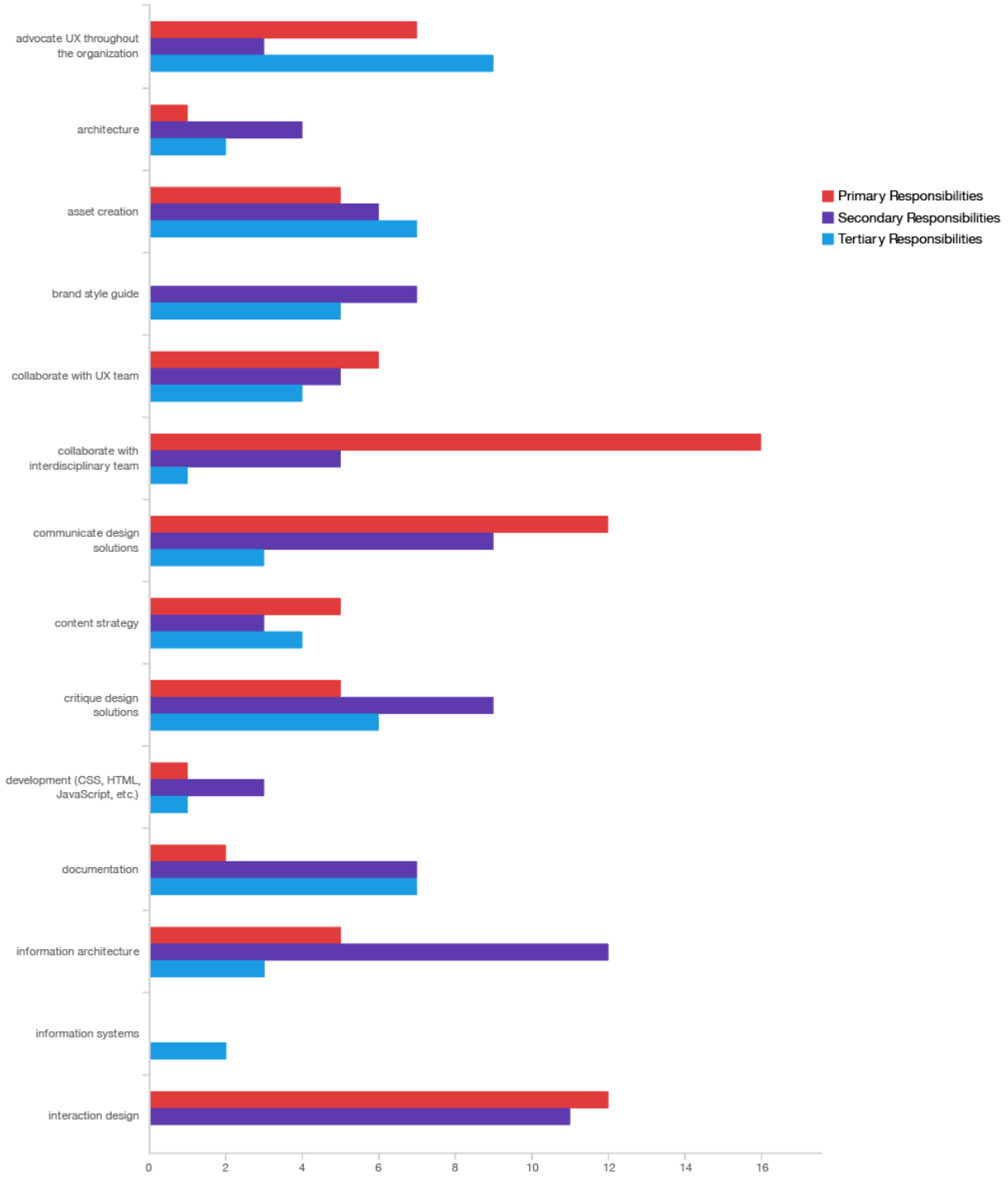
Managers' Opinion of Primary, Secondary, and Tertiary UX Responsibilities

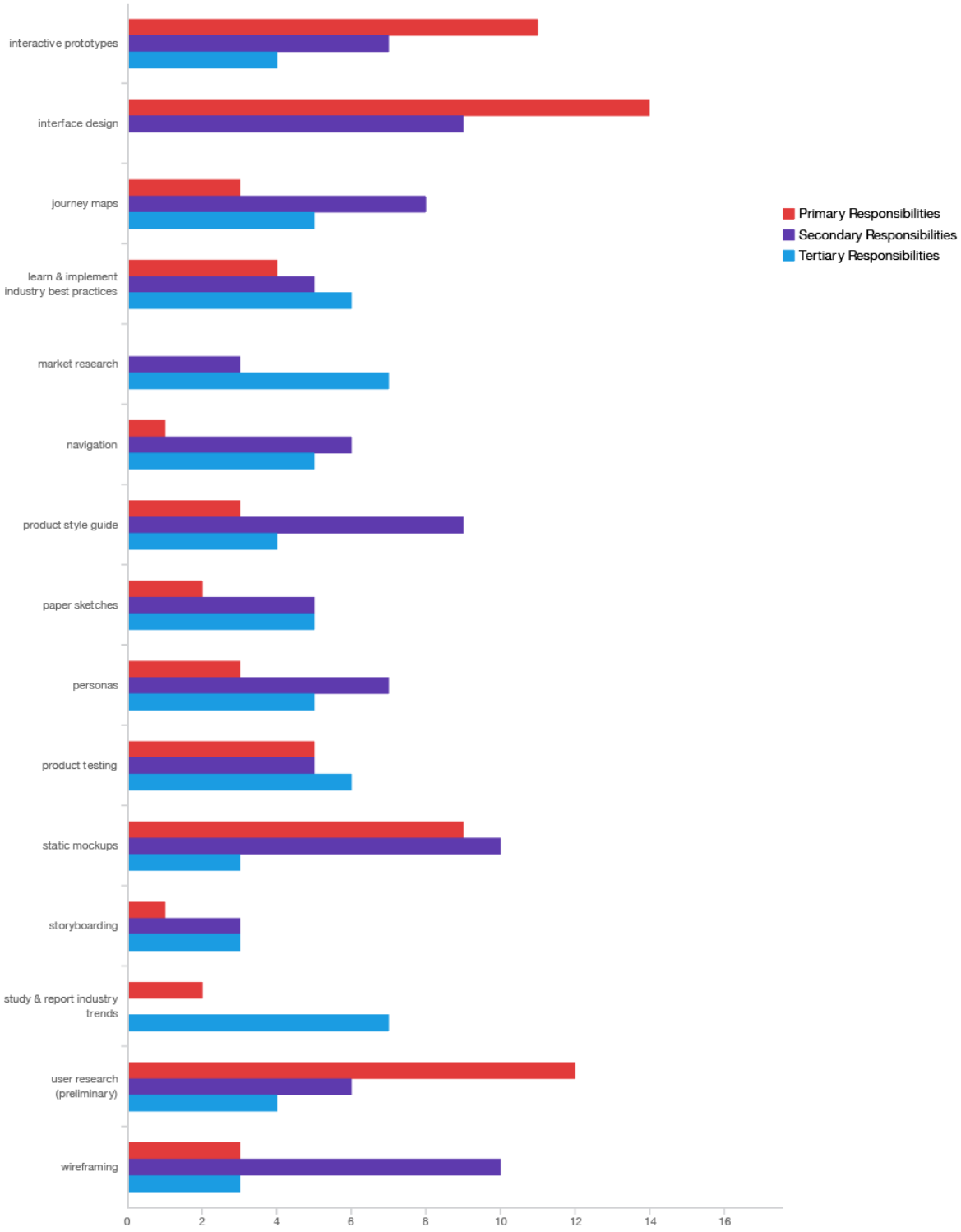



interface design
journey maps
learn & implement industry best practices
path
market research
navigation
product style guide
paper sketches
personas
product testing
static mockups
storyboarding
study & report industry trends
user research (preliminary)
wireframing
0
1
2
3
4
5
6
7
Primary Responsibilities
Secondary Responsibilities
Tertiary Responsibilities

Appendix H

Designers' and Researchers' Opinions of Primary, Secondary, and Tertiary UX Responsibilities




interactive prototypes
interface design
journey maps
learn & implement industry best practices
market research
navigation
product style guide
paper sketches
personas
product testing
static mockups
storyboarding
study & report industry trends
user research (preliminary)
wireframing
0
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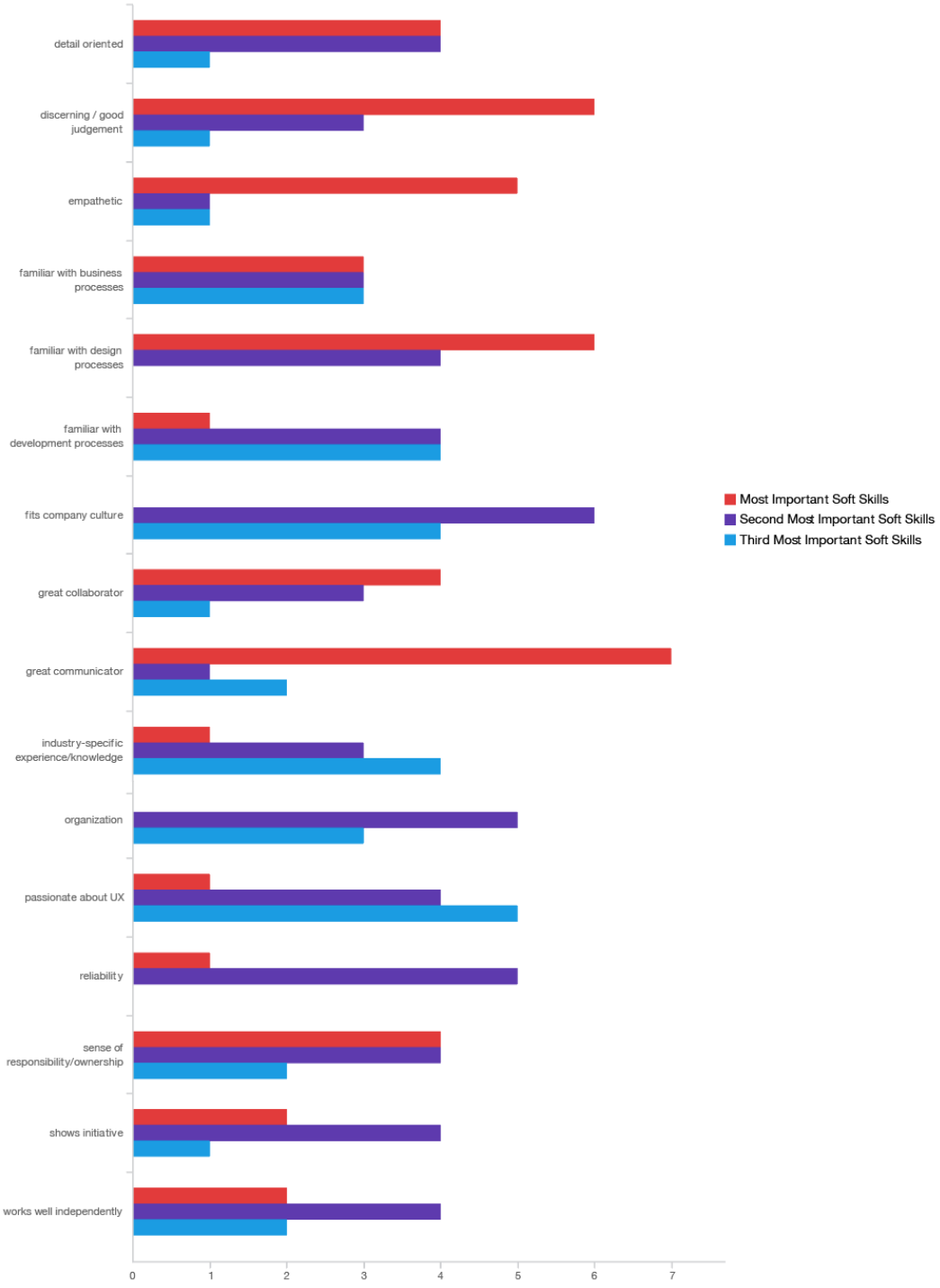
Primary Responsibilities
Secondary Responsibilities
Tertiary Responsibilities

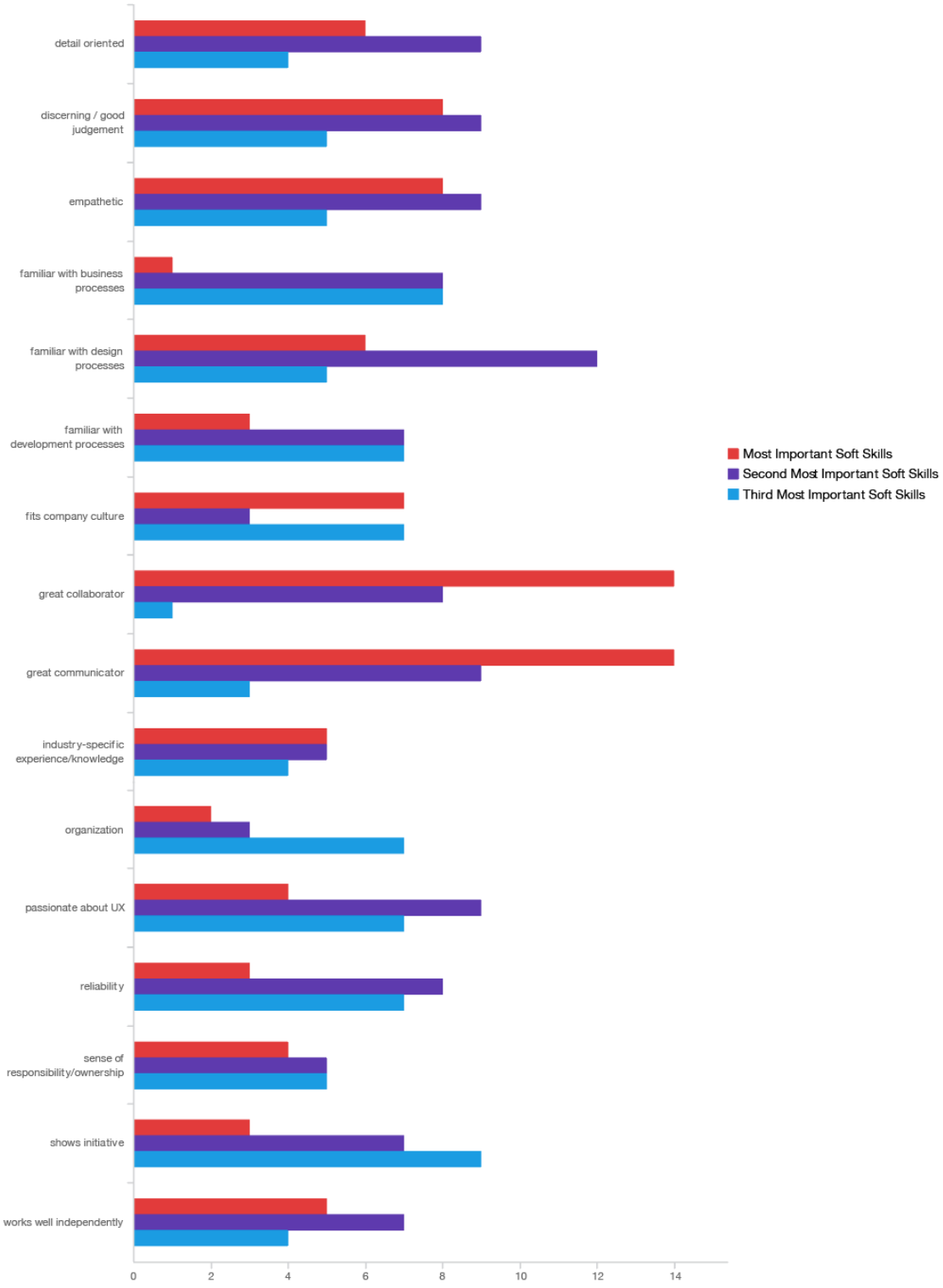
Appendix I

Managers' and Team Members' Opinions of Primary, Secondary, and Tertiary UX Soft Skills

Manager:



Designers and Researchers:



Appendix J

Participants' Explanation of Primary UX Responsibilities & Skills

Primary Responsibilities (manager point of view)

First and foremost we are responsible for advocating for UX in the company, and for the design and continuous improvement of our product. This includes owning, creating, and enforcing a style guide for the product for consistency and unified experience. Interaction design is part of said style guide, and the purpose of it is to communicate the ideas out team has for the product, and to establish a unified experience across the product and other touch points like marketing/customer facing site, and related endpoints. The next group is the main things we do to contribute to or support the primary effort, and the tertiary group are things we also do to the same ends, but less frequently or with less priority than the 2nd group.

I teach all my product and UX design teams to work through the layers of UX thinking (Jesse James Garrets: Elements of User Experience). UX practitioners should know how to capture and understand the problems that users face as they interact with products and services. Know how to align those problems with core business initiatives. Affectively communicate their design solutions with business and development partners. And be able to turn design into actionable user stories to be used by development. UX should show the ROI of design thinking. Secondary Responsibilities These are core skills I expect any designer to have if they are working in this profession. Tertiary Responsibilities It's important to be able to speak the language of your business and development partners. However, UX designers DO NOT need to know how to code.

It’s hard to decide. There was a different priorities at different times. Ultimately my team was responsible for it all.

UX design should be involved at any point the customer touches the product or service.

We are an agency that provides custom design and development services. Most of our client engagements focus on preliminary requirements gathering, solution design, and delivery, so our primary responsibilities are to deliver the assets they need (within their budget).

We serve a several development teams that are spread across four individual products (internal and customer-facing). While creating and implementing broader UX standards would be ideal, most of our work is tactical or production work to support the initiatives determined by the product and development groups.

Primary Responsibilities (designer/researcher point of view)

Our company works in cross functional teams with devs, a product manager, and a ux designer. My main responsibility is to that team and to make sure they are creating the best product experience possible. User research is very central to what we do and the devs are involved in our user research (we have at least one dev participate in each interview). Interactive prototypes are important because that is how I communicate my design choices with the team, stakeholders and test them with our users. All the design activities in the secondary column are preliminary steps towards creating an interactive prototype. I wish learning were higher, but it is a battle to create

time for it daily. I do view other designers work in a biweekly sync up and give feedback. I put personas last, because they have been already created and while I interact with them, I am not responsible for them.

Our UX deliverables are derived from quality research, so this has to be ranked first. Understanding the users and getting this information to the rest of the team as they create solutions is a cornerstone of the decision-making process. Wireframing and rapid prototyping paired with a short feedback loop speeds up the iterative design process. Products and projects evolve extremely fast in the early stages and keeping everyone involved and updated is key. Staying up to date on industry standards keeps the cogs of the UX department running smooth.

I went through in my mind what roles I fill most frequently and ranked the responsibilities in that order.

Increase profit through a good customer experience.

I'm in a start up so much of what we do it seems is playing catch up. In the ideal world we do market research, implement the research, design based on the research and code and build off of the design. In start-ups it's a little different. My assignments are presented like this: Management: "Hey we need a functioning Landing Page for (insert latest project that came into someone's mind) and we need it by tomorrow." Me: "We really don't have a brand guide yet, I think it might be best to work out some branding, then move to designing and finish by coding the project." Management: "We really don't have time for that and it needs to go up

immediately. Can you just start coding it and just design it as you code it" Me: "No... but I understand the problem. I'll do my best to simultaneously design and code this project while having no direction on branding, personas, users, etc." When working with people who don't understand the process, everything is a scramble and based off of viable working models. There's really no time to iterate, build mock-ups, or test samples. It's not ideal, but it'll get better in time.

I arranged the applicable tasks into how they figure into my daily work.

My team doesn't qualify as a UX team. I am actually on the content team, with my own personal responsibilities being split between UX and curriculum content production.

Our primary responsibilities lie in the core UX areas- interaction design, content strategy, research, IA, collaboration. I feel the secondary and tertiary items are just subcategories of the first bucket.

I thought about my day to day and tried to honestly arrange the items based on what I take part of on a typical day. Most of my time is spent doing enough research to (a) determine what to design and (b) inform a design itself. I then design static mock-ups to get design feedback from the team. Most of the interdisciplinary collaboration falls more in the box of research than co-designing. So although we spend a lot of time learning from other teams, and getting feedback from other teams, that's why I kept primary research in the primary responsibility section

(opposed to interdisciplinary collaboration. I should also mention that I feel like the size of our team (only 5 people on the product team) definitely influences how we go about doing our jobs.

I'm the only designer where I am. I own the UI/UX of all of the software products. My main responsibilities are listed in primary, but a good portion of my time is spent doing the responsibilities in the second category. I hardly ever do the things mentioned in tertiary, but there are other members of our product team (technical writer & product managers) who spend a good portion of their time doing those.

I currently do primarily UI design with occasional UX research.

Some of the options were, in my mind, categorical elements (i.e. "interactions design" is a category and journey mapping, and wireframing are elements of that) so I kinda tried to group elements under the category I saw them in. But my primary role is to research user personas, needs, behaviors, etc. and to work with various teams to conceptualize a design - however I work with visual designers to get the higher fidelity stuff mocked and the assets delivered.

Current focus of UX role is definitely creating high-fidelity prototypes that are passed off to developers. Most UX beyond the interface is determined by software design best practices and by the industry-specific experience of other people in the company. The only testing I have done is card sorting exercises for the new navigation.

My primary responsibility is to mock up new interfaces based primarily on industry best practices. Sometimes wireframing and low fidelity mockups are used to show initial ideas to product management and development teams. Most of my time is spent creating high-fidelity mockups that can be handed off to development of that is used by marketing.

Our main job is to create design solutions. We are responsible for the entire look and feel of the product. Research, usability testing, and persona creation support that effort. The tasks I put in tertiary responsibilities are either less of a focus or less frequently done than the others.

Honestly this felt a bit restrictive, we do a lot of everything I put in the responsibilities drop zones, but with different weights depending on the project and team we're working with.

I wanted to capture the most of what I did in as little as slots as possible. Ixd and interface design are broad enough topics to capture the majority of what I do on a daily basis. The last three are things I need to do in order to be successful in my work.

The UX team is primary the graphic designers that have to fight to get the product the way that they believe it should be. We take care of the fine detail and are limited to creativity in very small areas of the product. Larger decisions and directions are more or less handled by PM's and the executive team.

All of these seem to be primary responsibilities for team members, but each team member has a different set of priorities. I aligned them according to frequency and importance.

It was in the order of importance based on my role.

All of the projects that my team works on have been partially started or completed. Therefore, we do a lot of fill in the blank work. Generally this is how our processes have looked like so far, but they vary.

“Primary” are primarily strategic, which I believe is the most important part of a UX role. “Secondary” are tactical, tools used and interactions to help improve the assets. “Tertiary” are mostly supportive responsibilities. 1) My ultimate goal as a designer is to communicate the best solution. The format of that solution seems to really be secondary to that. 2) As a consultant, knowing best practices and secondary research is extremely beneficial in helping the team see the best solution. 3) Most of the solutions I create, and probably the majority of my time, is spent designing mockups of interfaces, using Sketch, Figma, etc. 4) Our consultancy is hired often because our clients want us to perform user research, so a good amount of my time is spent doing this, either via quick “guerrilla testing” or longer, documented studies. This was not really the case in my last job. At my last job this would have been a lot further down the list. 5) Collaborating with the developers and PMs is critical to actually getting the designs in a place we want. No matter how well they are designed, if good collaboration doesn’t happen, the product will not turn out well.

We are a new UX team in an organization that has several products, each with their own vertical of product management, development, and QA personnel (fairly silo-ed). Since UX hasn’t

formally been a part of product development, we spend most of our time attempting “small wins” to convince the teams of our value. Most often this involves rapid delivery of assets and mockups within their already-planned sprints. Since a lot of these efforts are “fire-fighting,” we don’t get as much time to establish broader UX standards.

We are kind of the glue that holds the product teams together. We interact a lot with product managers, developers, and business analysts for research, development, testing and all sorts of other design and validation efforts.

Appendix K

Participants' Explanations of Primary Soft Skills

Primary Soft Skills (manager point of view)

First set are crucial. Second set are important a but could be worked on and developed over time. Third set are nice to haves.

Individuals with an entrepreneurial mindsets are often drawn to innovation and identifying new value. They create opportunities for themselves and those around them. UX designers practice design leadership by facilitating discussions with business and development partners that lead to new ideas and create alignment around proposed solutions. None of this can happen without a passion for user experience (empathy for the user), and an understanding of business and development processes.

Those are the skills that reduce management overhead allowing me to participate in the design process with less stress or time.

The UX and UI designer must bee able to communicate their ideas and help other express communicate their ideas. The must understand the basic creative design process and have innovative attitude of "can do."

I can teach and coach skills but have a hard time changing someone's soft skills and personality to mesh well with a team.

In order to make good decisions, a good UX designer needs to know our business and existing standards very well.

Because we work with clients who are perhaps less technically savvy or unfamiliar with UX practices, our team needs to be able to clearly and simply communicate designs, requirements, or architecture. Since we balance many project simultaneously, our team members also need to handle UX tasks on their own and check their own work for errors.

Because our UX designers need to balance so many projects and tasks and negotiate UX requirements with different dev teams, it is most important that they accurately communicate requirements that fit our business standards and catch potential UX issues one their own (since no one else will).

Primary Soft Skills (designer/researcher point of view)

Since we don't really have a "UX team" and all of the designers are embedded on product teams, my selections were based on personal feelings.

It is important to trust those you work with.

The company I currently work with has a very small UX design team. UX is new to the company and many of the people within the company are not sure how to work with UX designers. Because of this the UX designers in our company need to have a strong sense of purpose both for themselves and for the company. This greatly influenced the order I listed the soft skills.

Again, in my job it's all about reliably producing and doing it quickly. You might be passionate about UX and want to tweak designs. But something you can design, build and get to market quickly is more important than the best design created from the best process.

I thought about hiring processes and the things that seemed to be most important in bringin on a new team member.

My company is structured in a fairly loose manner. I don't have a huge amount of oversight, so my ability to manage myself and my projects is paramount.

Empathy for the user is key. being able to communicate and collaborate with other members of the product teams is essential.

The top of my list includes soft skills that are harder to come by, but that are more important. After organizing them the way I did, I realized that all the skills I placed lower were almost implied. I put them down near the bottom because they're important but you just have to have them. The ones at the top were unique, and thus more valuable in my eyes. I specifically left out works well independently because, although we have to work on things on our own, there are a few people in our organization that are too good at working independently and are a detriment because they require maintenance and check in. Being assertive and taking initiative fills the need rather than working well on your own.

Being responsible for the UI/UX at my company, I get to work with all of the various teams inside the organization. Most of my time is spent working with product managers and developers, but I also work with marketing, sales, system engineers and field technicians. I put collaboration as the most important thing because I gain a wide breadth of knowledge from talking to these groups. They really help paint the picture of what our users need. Familiar with design processes is also crucial. I'm the only one who dictates that and my processes affect dozens of people. I want to make sure I have those locked down. Culture is also huge. Most people where I work are laid back and care about relationships. If I was bull-headed and arrogant, I would never succeed where I'm at.

I think it’s most important to be able to work cohesively with people with clear communication - without that nothing can get done and no matter how great the work is, the client (or team) will not be happy.

Empathy. You aren’t designing for you; so listen to the damn user, watch them, don’t project your own preferences on to them no matter what you think you know. This is the biggest design mistake I see UX people make. Our egos get in our way. We want to know the most. We want to prove we know the most. We make our ideas and designs our babies and we defend them passionately. We chuck everything we know about research and methodology to this end sometimes and it’s not going to help the user in the long run.

It is important for UX designers on our team to be detail oriented and to try to think through the details of the experience. It is important for designers to be able to communicate well as they

have to present and justify the designs to multiple internal stakeholders. Because most of the designs are based on industry best practices and the good judgement of thoughtful team members, discernment is also extremely important.

The most important thing is understanding the product and the user VERY THOROUGHLY. Your designs will reflect the degree to which you understand what is happening and why. If you are confused, your designs will be confused. Once you have a deep understanding of the goals and processes, you just have to map out all the interactions.

The most important soft skills are the ones that you should have upon arrival. The rest should and can be developed as you work and grow within the company.

On our team, it seems as though whoever can articulate their decisions the best usually wins. However, it doesn't always mean they are right. Empathetic is 2nd because that have practiced empathetic, human-centered design tend to have the best business results, so that skill, at least on the UX team is highly sought after Our company is mainly an R&D company. I have found that in order to be successful here you have to be a good collaborator, especially when bringing in other disciplines.

I can really only speak to the most important skills, which I think are actually about equal. chosen based on my role up to this point and the feedback I've been given by my direct manager In most of the projects that my team has worked on, these skills have definitely been required in

the order above. For the work that we do, it is extremely important that every person is capable of performing the top three soft skills for us to get anything done.

Being able to communicate across disciplines, help people to collaborate, and be willing to balance conflicting interests is what makes good design. All the good ideas in the world make no difference if you can't manage to implement them.

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1) At the heart of UX is being able to design for specific use cases, so I think the ability to step in someone else's shoes is more essential than anything else as it drives everything else. 2) Familiarity with design processes is really important because good processes can help teams think and approach problems in more efficient ways. 3) Experience has taught me so much and, comparing where I am now to where I was entering the field, there's a lot that would be hard to learn in a classroom, but that has really helped me feel like a legitimate professional.

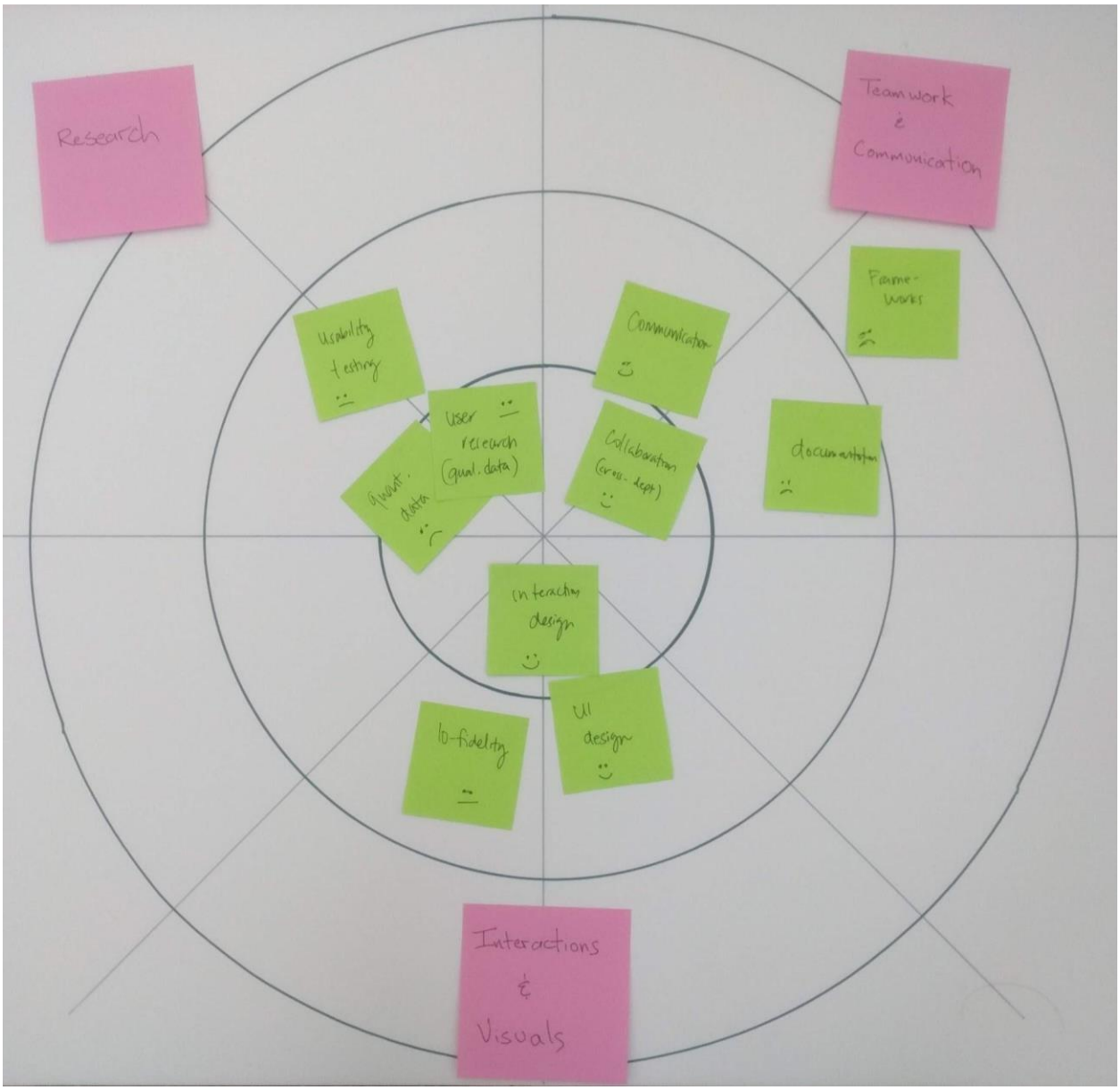
As our team is small, we work closely and conference often regarding our different projects. When working with other teams, however, we have to routinely demonstrate our competence in the business (that we can keep up... or, more importantly, that we won't hold them up with our ignorance). Consequently, demonstrating our knowledge of the products, industry, and each team's processes/priorities are the quickest way to be taken seriously (which is crucial when the UX team is new and not yet trusted fully).

Since the industry we deal with is very complex and large, it is important to build a team that will take the time to learn the ins and outs of the industry and develop valuable solutions to their problems.

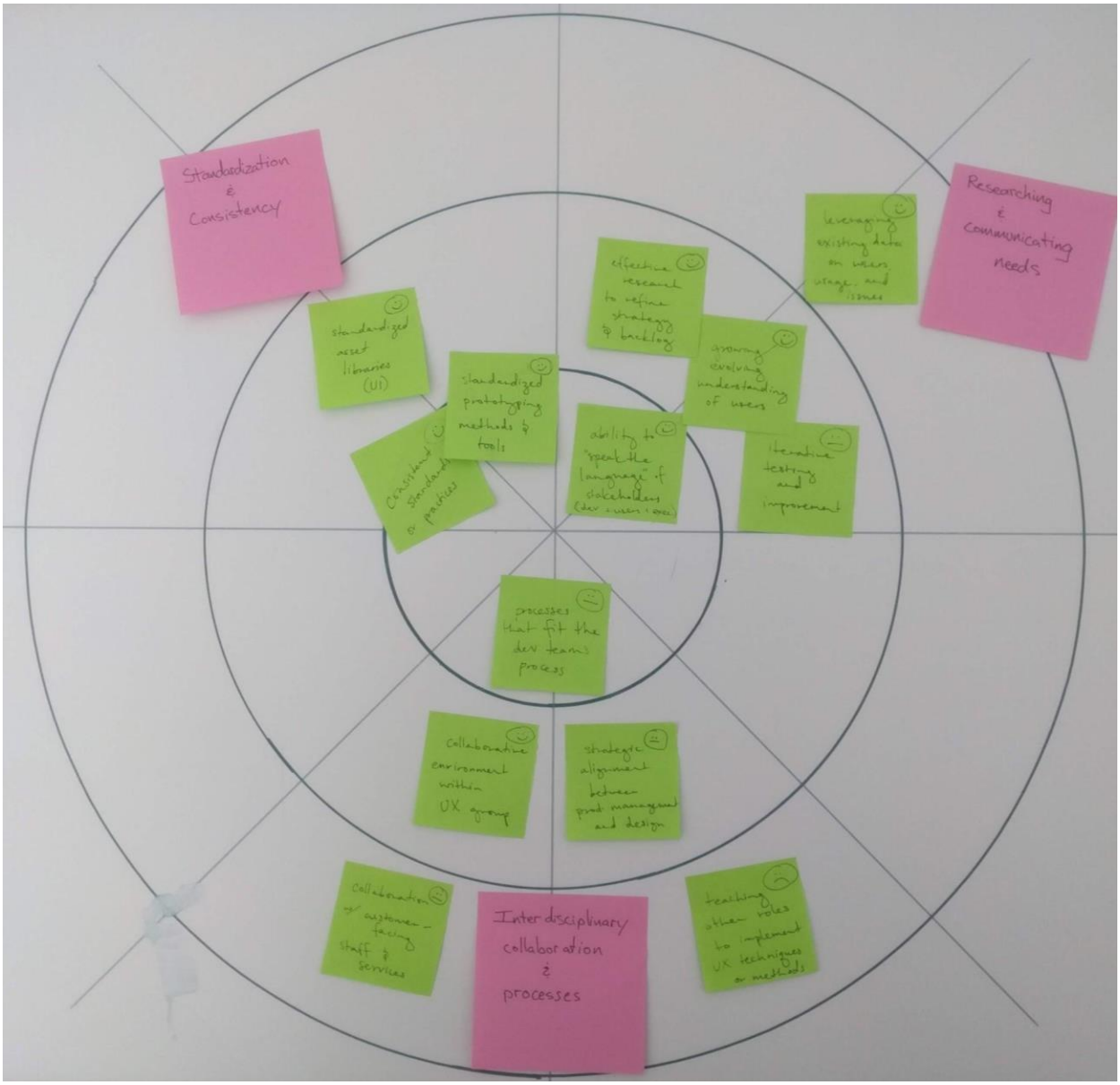
Appendix L

Workshop: What's on Your Radar

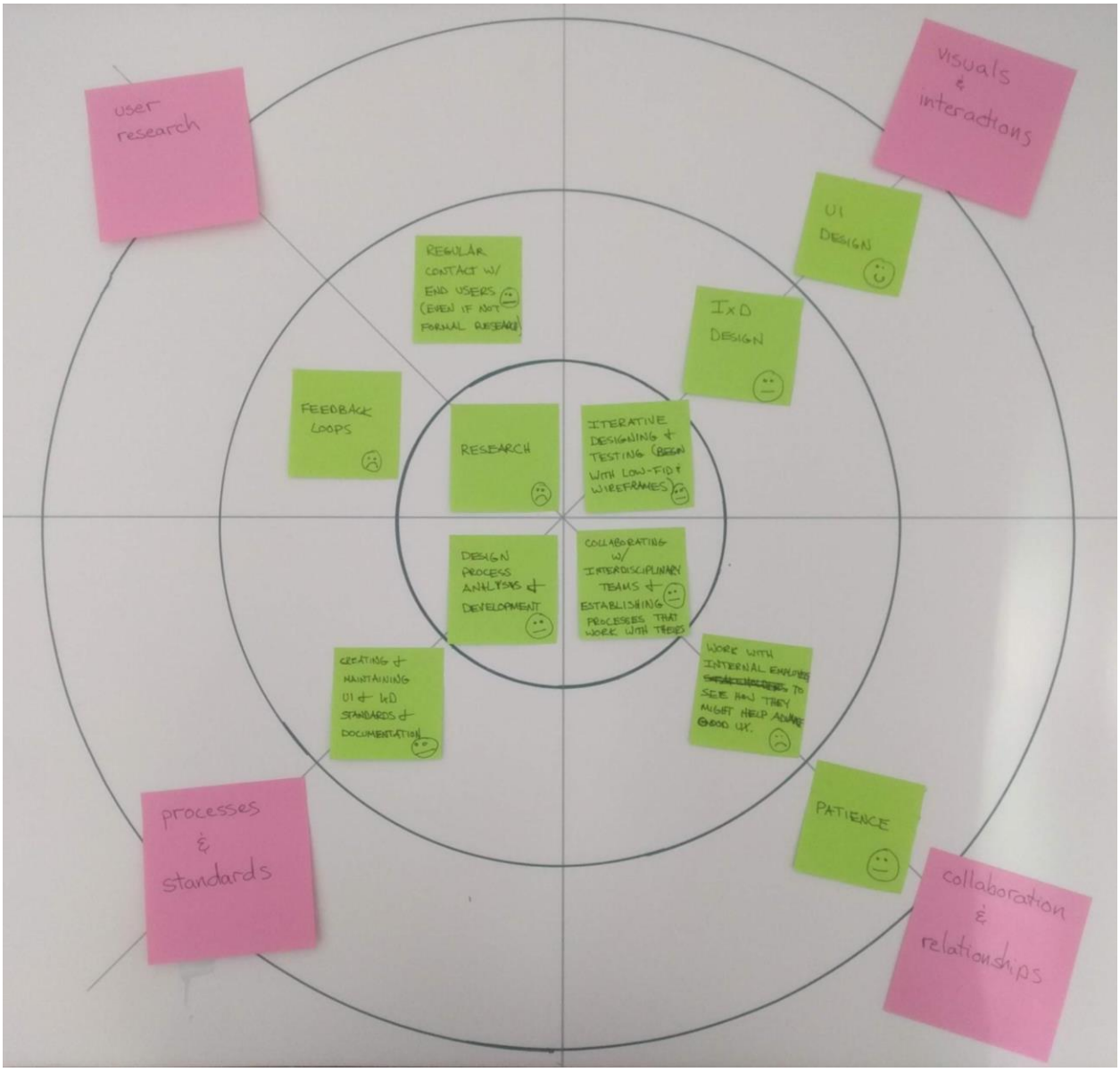
Participant 1:



Participant 2:



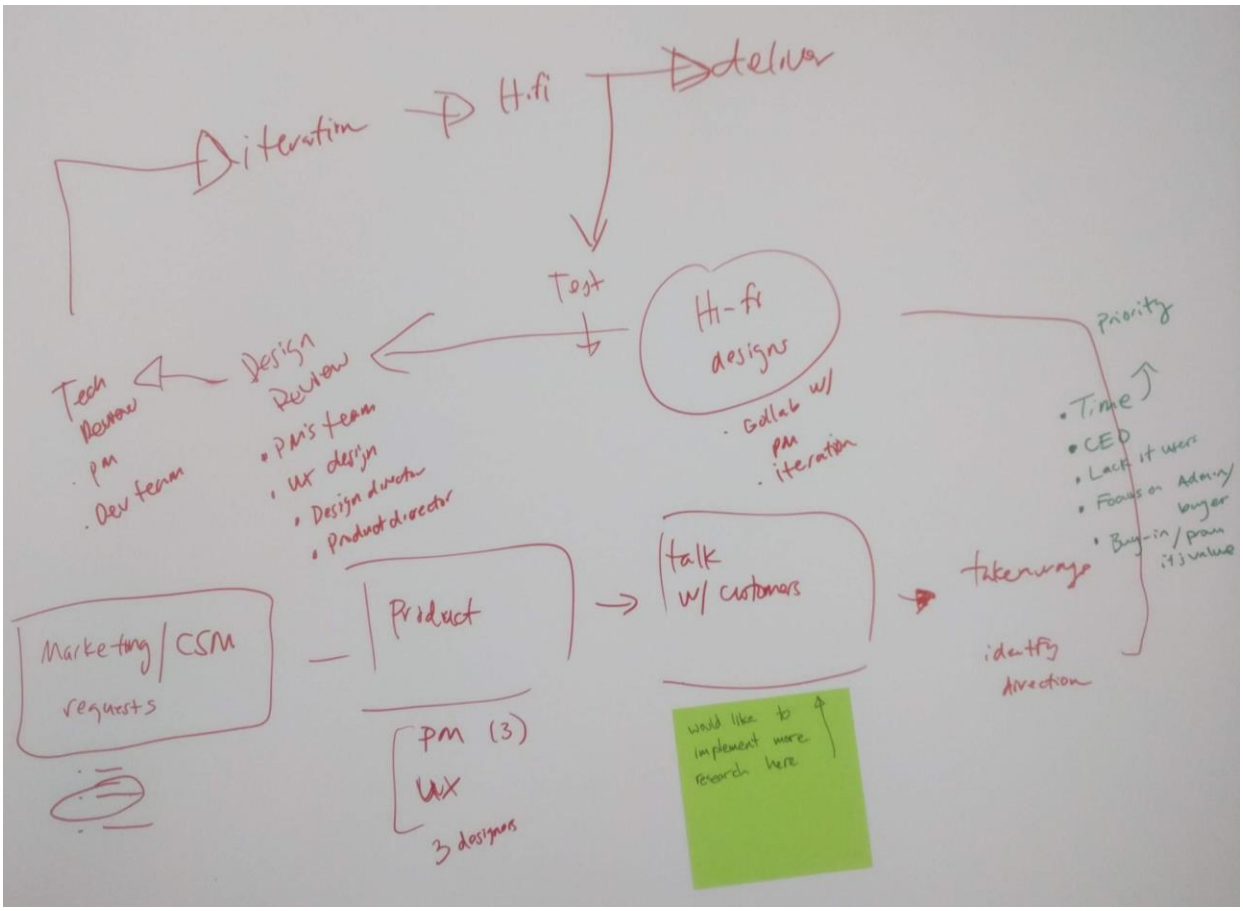
Participant 3:



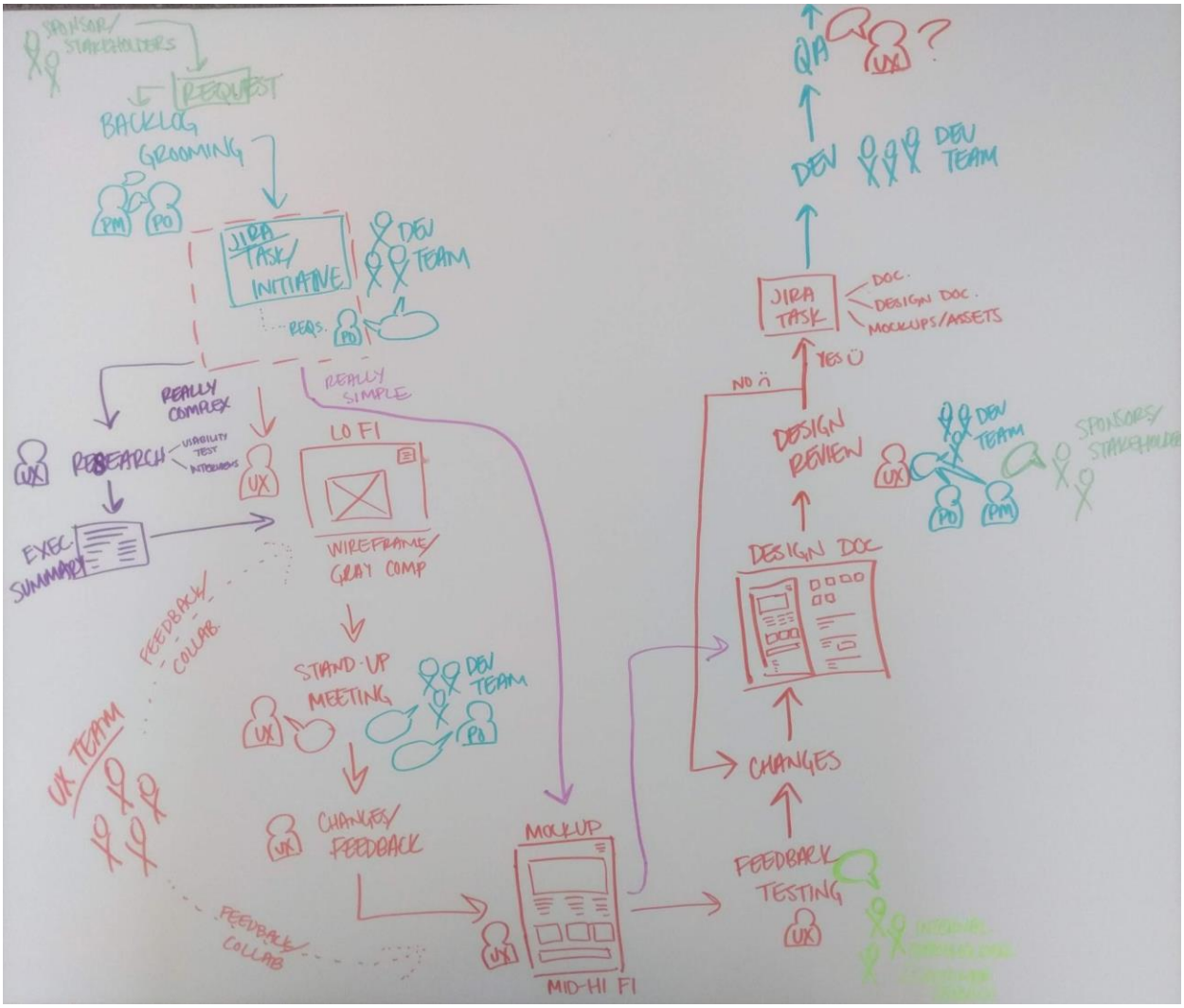
Appendix M

Workshop: Experience Diagrams

Participant 1:



Participant 2:



Participant 3: