



# An Industry in Flux

## Where Does UX Go from Here?

### Insights

- The UX industry is complex to both practice in and teach about.
- Through interviews with practitioners, we identified five challenges facing the field: misconceptions about UX, untested education models, added complexity, increased systematization, and ever-changing job roles.
- To move forward, we need more dialogue between industry and academia.

Working in UX can sometimes feel like climbing a mountain in a snowstorm. Just getting started is a daunting task; with so many things to learn and so many ways to learn them, where does one even begin? Then, just when you think you've finally got a solid footing, you find yourself fighting to keep your balance with the ground constantly shifting under your feet: There's suddenly a new tool to master, or a new technology to learn, or a new process to adopt [1].

Teaching UX can feel the same way.

We are three college professors in

the U.S. who teach HCI/UX in three very different programs and at different levels: an undergraduate program based in rhetoric and technical communication, a graduate program based in computer science, and a graduate program based in design and information science. We each approach the field from a different perspective, but what brought us together were the love of teaching UX-related topics and the shared struggles with what makes teaching UX so challenging. We stand in front of our students every year and inform them they are entering an industry that is still in its

infancy, is continually evolving, and will challenge them to constantly learn and grow. What they may not realize is that this is also true for us as educators. How can we teach our students the many skills they need when those skills change all the time? How can we help them develop the reflexive, ethical, and resilient mindset necessary to adapt to an industry that is always in flux?

To answer these questions, we talked with veterans of the UX industry about what it means to be a UX professional today. Between June 2017 and March 2020, we spoke with 71 senior UX professionals working at 64 organizations in the U.S. about their struggles and frustrations with, and the joys of, working in the industry. In this article, we share a summary of their responses to a question about how the industry has changed in their careers and reflect on how educators and industry professionals can work together to shape where it's headed next.

## UNDERSTANDING UX, MORE OR LESS

UX has become ubiquitous. Most companies have a baseline familiarity with UX concepts. This means UX professionals don't have to spend as much time justifying UX work or arguing for resources as they used to. Here's how one senior design manager explained this progression:

*Now it's like an integrated part and often it's not a discussion of, Did we need UX on something? I remember in the beginning I needed to argue for every little design work or research.... Now I feel like at least in-house, in our company, people want research, maybe even sometimes more than they want design, which is a complete change in my mind.*

But despite a more widespread awareness, high-level UX leadership positions like a CXO or CDO are still

relatively rare. As one design lead observed:

*There's still the missing person, the CXO, who really cares about design.... And so at some point, the design influence only goes up so far to the management level or director level, and usually gets trapped inside of the software engineering department and not a partner with the product management department. So, there's still that ceiling.*

Furthermore, many people still misunderstand UX. Whether it's fighting against the perception that UX is only about visual design or that a single usability test is sufficient, UXers are still challenged to accurately educate others about the work of UX. As an experienced UX consultant explained:

*Usually they'll be equating user experience and visual design, right? So they'll be like, "Oh, you're a user-experience person. Can you make this prettier?" And we have to say, "Well, wait a second here. That's one thing that we do. But we also do the research to understand if it's what we should do in the first place and all this other stuff."*

**Looking ahead.** While a greater awareness of UX is welcome, it's clear that there are still misconceptions of what UX is (and isn't). At some level, it's likely that UXers will always need to explain exactly what they do, but there are several opportunities to foster a broader understanding of UX work. First, we should advocate for the creation of more senior-level UX positions in different industries, including at the C-suite level, who can then take on the role of championing UX throughout their organizations. Second, all UXers should proactively invite others into the discipline and include them in the practice of UX. This means using their cross-disciplinary communication skills to share

knowledge, collaborate, and forge meaningful relationships with non-UX colleagues. Finally, educators can extend our reach by finding opportunities to introduce UX into K-12 curricula and make sure UX is taught in business and liberal arts programs and not just in computer science.

## LEARNING UX IS INTENSE, ON THE SURFACE

Alongside the increased awareness of UX has been a proliferation of UX educational opportunities. For individuals seeking a college education, they can choose among a range of graduate and undergraduate programs explicitly tailored toward preparing students for UX careers. But perhaps the most influential change in education has been the popularity of so-called UX boot camps, or short-term, intensive training programs offered by for-profit organizations that are typically cheaper than a college education (though still usually a substantial investment). UX professionals in general welcome the influx of talent entering the profession, but some are skeptical about the readiness of graduates of these programs. For one UX research director, their focus on the mechanics of UX leads to a superficial understanding of the field:

*People will pick up an article or they'll go to a conference and go to one UX course or something like that... [and] the trouble is that when they come out of that course, they have no background in terms of the roots of why they're doing what they're doing, but all of a sudden they feel like, "Oh, I can take my app to a user and run a usability test. And now I am a UXer."*

Another common critique of these programs is that they serve as "portfolio farms" that emphasize creating a UX portfolio as an end goal over building a solid base of UX knowledge. As a result, portfolios tend to be formulaic. As one senior UX manager observed:

*Right now, everyone's portfolios are the same, to be honest. "Oh, I have this kind of UX methodology, interview, card sorting, anything," but the capability we are looking for is, how do you discover the users' insight from this activity and transform this insight into design? Because otherwise research is*

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just research, you won't connect to your design.

While university programs seem to be viewed more positively, they are also criticized for being overly theoretical and focusing too much on hypothetical projects that fail to simulate real-world working conditions. As one UX manager explained:

*There are a lot of young ones entering the field that don't know what they're doing...like one or two years out of undergrad who think they know everything there is to know about design simply because now we have undergrad degrees for UX or HCI or interaction design or whatever. I think it's the same attitude that some people coming out of the boot camps have as well.*

**Looking ahead.** A range of UX education options offers aspiring UXers many different pathways to enter the profession. However, it may end up doing more harm than good if programs are churning out graduates who lack the know-what and know-how needed to succeed in the industry. Of course, there is more to a college education than workforce development, and academic programs that emphasize ethical computing, social and environmental justice, and inclusive design practices may play a valuable role in shifting industry perspectives in these areas [2]. Even so, the UX education community would benefit from more and better collaboration between academia and industry in this area. In particular, we call for a joint effort to 1) define a common set of required and desired skills for entry-level UX roles and 2) develop curriculum standards that articulate the characteristics of a quality UX education program. Internship and apprenticeship programs that combine real-world experience and classroom learning should also be explored and evaluated.

## THE JOB IS HARDER, BUT THE TOOLS ARE BETTER

From an increasingly varied set of screen sizes to an array of new technologies and interaction modalities, UX work is increasingly complex. Here's how one UX consultant explained this progression:

*When we started out, we had the*

*Internet, we had basic websites, and then we had applications that live inside websites, we had software as a service, and then we had mobile apps, right?... Well, now we've got Alexa and Siri and all these other AI-type assistants that we can speak to. We've got interfaces for everything, including cars and appliances and all sorts of stuff. And all of that forces us to broaden our working knowledge of the mechanics of all that.*

A major challenge of working with so many technologies is that UX professionals need to understand a wider variety of fields and subfields in order to be effective contributors. As another UX consultant explained:

*There's some figure with all these overlapping circles you have to think about. You have to know some visual design...you have to understand basic usability, [and] accessibility.... It's almost like you need a five-year plan to say, "Okay, I'm going to need skills and an understanding of the limitations of machine learning at least so I could be in the conversation."*

Fortunately, the industry has also developed a suite of powerful tools that have revolutionized the way UX professionals get their work done. Gone are the days of having to use clunky software to create wireframes ("We don't use Vizio anymore," one senior design manager said); instead, there's software that is properly built to do the UI work. For researchers, there are also numerous powerful tools that support usability testing and other types of user research.

**Looking ahead.** We need to embrace the fact that a UX career requires a commitment to lifelong learning. New technologies (and new UX tools) are always around the corner, and UXers need to be ready to adapt. Without being prompted, many interviewees mentioned being concerned with how the field will be affected by artificial intelligence, machine learning, and voice user interfaces, among other new technologies. There is no consensus for how much UX professionals need to know about these areas, but there is a clear desire for our industry to help decide how (and if) these technologies should be designed and used. UXers with both specialized knowledge and cross-domain

expertise are poised to have the biggest impact in these efforts, as they will be able to combine their understanding of the UX process with an ability to dive deep into these new domains.

## DESIGNING AND RESEARCHING IN SYSTEMS

UX work is increasingly embedded in large systems that organizations use to improve efficiency and consistency. For UX designers, custom-built design systems and preexisting UI frameworks allow them to create modular designs with reusable components rather than starting from an empty canvas [3]. For one UX manager, a design system, which includes code-ready UI patterns, colors, typography, and other design components, has completely changed how the company's designers work:

*[The design system] would do away with a lot of the typical work of a designer and maybe only leave the interaction bit, and a specialized visual designer to kind of create the components but not do the regular rounds of drawing another iteration of an interface.... It's like reducing the amount of work, the boring work, that a designer sometimes has to do.*

UX researchers are also developing more-systematic methods that focus on generating reusable research insights rather than on discrete research projects that are time-consuming and lead to detail-heavy reports or other documentation. Here's one senior product manager explaining how "atomic" research works at one company:

*[A research] report has a limited life span...but there are individual insights and points that are still valuable.... So, rather than write a report that's bespoke for a certain project, [we] pull out all the specific insights and put those in a catalog where you can search them and tag them and find them for different purposes later on.*

Importantly, systems like these are well-suited to agile and agile-like software development processes, which are becoming increasingly commonplace. A traditional waterfall-inspired user-centered design process is poorly suited for these contexts, so these systematic approaches allow UXers to be more

flexible and adaptable in their work.

**Looking ahead.** This trend toward system-based UX is likely to accelerate as more companies commit to adopting these practices. Creating and maintaining a design or research system is not a trivial task, and there are open questions about whether these approaches are truly consistent with UX principles and processes. But when they're done right, design and research systems not only increase the speed and flexibility of UX work, they can also allow UXers to "bake in" accessibility standards and routinize inclusive UX practices, which can then be scaled throughout an organization. An open challenge for educators is how to include design systems in our curricula and classrooms. Typical pedagogical approaches are more likely to focus on waterfall-inspired approaches that are becoming increasingly uncommon in industry, so new curriculum models and pedagogical approaches are needed.

## THE EVOLUTION OF UNICORNS

Historically, the concept of a "UX unicorn" meant an individual who could fill all the UX roles on a team: design, research, and coding. However, several interviewees mentioned that the definition of a UX unicorn is changing. As one UX lead shared:

*What defines what a UX unicorn is comes and goes. It used to be that the unicorn was someone who could do all the UX and also can code. And then the unicorn for a while was someone who could do content writing and then it was someone that could do design and this and that. And so like every year or so, a couple of years, it's a new type of unicorn.*

While there are recognizable titles for UX professionals, these titles, responsibilities, and roles are contingent on both the organization and the team. However, there are signs the field is trending toward more "T-shaped individuals" [4] who have deep expertise in one or two areas while also being knowledgeable of multiple other domains. As UX teams grow, managers are looking for

team members who can fit and complement others. As a UX consultant explained:

*There is no longer this idea of an information architect and a designer per se, but there will be some who might be stronger on the visual design side. Some might be stronger on the more traditional IA-type work, whether it's flows or interaction design. So they're all kind of now the same title but with different strengths.*

**Looking ahead.** Arguments about UX unicorns have been a staple of the industry for years. While we hesitate to predict an end to these disagreements, this trend is an indication that the field may be on the verge of coalescing around a unified vision for what UX roles can and should be. For industry professionals, now is the perfect time to shift the conversation away from job titles toward discussing the unique value of different combinations of UX skills and dispositions [5]. As educators, we should direct our students away from targeting a specific job title and instead encourage them to identify where they want to develop their vertical area(s) of deep knowledge while also building a broad base of UX knowledge.

## CONCLUSION

Our interviews confirmed that UX is an industry in flux. On the one hand, this has made it a dynamic and exciting field to be a part of: UX is now "an integrated part" of most companies, there are "interfaces for everything," software that's "properly built" for UX work, and system-based approaches that reduce the amount of "boring work" UX professionals are asked to do. On the other hand, these changes have created instability and confusion: The CXO is still a "missing person" in most companies, too many new UXers "don't know what they're doing," and there's a "new type of unicorn" every year, making it difficult to know which fields and subfields need to be learned to be "in the conversation."

Being in UX may feel like climbing a mountain in a snowstorm, but it doesn't have to. By reflecting on these changes, we can begin to

acknowledge and address our field's growing pains, celebrate and build on its strengths, and work together—academics and industry professionals alike—to define a clearer and more stable UX future.

## ENDNOTES

1. Kou, Y. and Gray, C.M. A practice-led account of the conceptual evolution of UX knowledge. *Proc. of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM, New York, 2019, 1–13; <https://doi.org/10.1145/3290605.3300279>
2. Meyer, M.W. and Norman, D. Changing design education for the 21st century. *She Ji: The Journal of Design, Economics, and Innovation* 6, 1 (2020), 13–49; <https://doi.org/10.1016/j.sheji.2019.12.002>
3. Yew, J., Convertino, G., Hamilton, A., and Churchill, E. Design systems: A community case study. *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*. ACM, New York, 2020, 1–8; <https://doi.org/10.1145/3334480.3375204>
4. Steane, J., Briggs, J., and Yee, J. T-Shifting identities and practices: Interaction designers in the Fourth Industrial Age. *International Journal of Design* 14, 3 (2020), 85–96; <http://www.ijdesign.org/index.php/IJDesign/article/view/3728/926>
5. Rose, E.J., Putnam, C., and MacDonald, C.M. Preparing future UX professionals: Human skills, technical skills, and dispositions. *Proc. of the 38th ACM International Conference on Design of Communication*. ACM, New York, 2020, 1–8; <https://doi.org/10.1145/3380851.3416774>

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