

# DESIGNCAMP FOR UNIVERSITY HIRES CORPORATE EDUCATION OF SOFTWARE DESIGN THINKERS

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## INTRODUCTION

The digital era is maturing. Until recently, technology companies relied on advancement of computing performance to differentiate new products and services. Today, processing performance has caught up with the speed of human thought and cloud computing has begun to democratize software deployment, drastically lowering costs for businesses and end users alike. John Maeda's recent report on design in the tech industry points out that Moore's law has slowed and design is increasingly the only reason to choose or not choose consumer and enterprise software (Maeda, 2015). Technology companies are differentiating not on cost and performance, but on design and user experience.

Compared to the industrial design profession, the software product development field is quite new. Few university programs exist that consider software product design in isolation and in a user-centered context. The shortage of trained graduates means companies like Amazon, Google, IBM and Facebook are pulling from traditional and neighboring disciplines including visual design, industrial design, human computer interaction, social sciences, architecture and front-end development to craft design teams that can tackle technical complexity in new ways (IXDA, 2015). These designers are being hired into software companies in large numbers with an eye on increasing the ratio of designers to engineers on product development teams (Dishman, 2013).

This amalgamation of sub disciplines brings with it the benefit of a variety of perspectives and technical skills. But there also exists a practical challenge to align these somewhat disparate new professionals around a common understanding of design methodology, technical constraints and mediums and the radically collaborative nature of the software development environment. To address these needs, a new corporate education model that goes beyond onboarding and introductory training is required. This paper will report findings from an ongoing case study of Designcamp for University Hires, a 12-week structured education program for newly hired designers and developers.

## WHAT IS DESIGNCAMP?

Designcamp for University Hires is a 12-week education program that prepares recent design graduates to be effective contributors on software product development teams. The program accentuates collaboration and empathy across disciplines and learning through project-based curriculum as core principles. Immediately upon joining the company, designers and developers are expected to complete the program as a prerequisite to joining their eventual product teams. While all Designcamp participants identify with one of four primary specializations--visual design, user experience design, front-end development or design research—all are expected to engage with the team throughout the end-to-end design process.

Program curriculum and activities are designed to serve three overarching goals. The first is to prepare designers to practice and advocate for design thinking methods once they join transdisciplinary teams. Second, the program exposes designers to software development tools, constraints and practices. And finally, the Designcamp experience is meant to initiate a culture of learning and egoless collaboration amongst the company's new design organization. Since July 2012, four sessions of Designcamp for University Hires have taken place, launching 206 designers and front-end developers into the business. Each new Designcamp is informed by lessons from the previous as internal educators experiment and iterate to meet the needs of participants and the business.

## **DESIGNCAMP CURRICULUM AND ACTIVITIES**

Over the course of the program, designers work in small teams to complete three distinct projects that relate to the strategic definition and technical delivery of software. All project work relates to actual products and development teams. This ensures the work will contribute directly to the business and gives designers practical experience working with a several real stakeholders, users and project briefs. The curation and preparation of these projects requires focused effort from a small team of Designcamp leads. These leads mentor and guide the Designcamp participants throughout their experience.

Each project provides design teams rigorous experience working with the early stages of defining a new product offering. Teams are given user-centered business objectives, or "hills", that serve as an entry-point into both the project domain and the organization's design thinking methodology. The teams work together to conduct market and user research, co-creating empathy maps and as-is scenarios as a means to synthesize user needs and pain points. All team members explore a range of new approaches to addressing user needs in sketch and storyboard form. Low and mid fidelity prototypes are tested with end users and proxy users as a means to fuel iteration.

Later projects expose the designers to the delivery side of software development. The focus is on learning how software development teams execute chosen design directions from concept to code. The project teams address technical considerations like digital content strategy and designing for performance and are familiarized with the Agile methodology. Emphasis is placed on acknowledging the constraints and possibilities that are introduced when code is the medium for implementing design. In addition to producing paper prototypes and static mockups, teams are encouraged to prototype and test visuals and interactions in code. Designers and front-end developers "pair", a highly cooperative activity where designers and developers work together to write, review and discuss code at one terminal.

Over the course of these projects, curriculum is delivered during morning sessions that coincide with each phase of the work. A range of designers at different experience levels leads the curriculum sessions. An important characteristic of the curriculum delivery is that teams spend as little time sitting and listening as possible, and more time working through facilitated activities and participating in group discussions. Experienced designers and developers embed with each team to model the skills and behaviors that align with a session's learning goals.

For many of the participants, these projects are among the first experiences working deeply across design, engineering and product management; so additional discussion and activities focus the group on understanding and effectively collaborating with people from different disciplines. For example, in a facilitated reflection activity, Designcamp participants create distinct portraits of engineers and product managers in the form of empathy maps. The designers reference their experiences with these disciplines over the previous projects and document their perception of what people in these roles do, say, think and feel. These artifacts are openly discussed amongst the group, with input from practicing members of the engineering and product management teams. As Designcamp progresses, participants come to better understand engineers and business people, and are better poised to articulate the value and rationale behind design recommendations in a way that resonates.



Figure 1. Designcamp participants create empathy maps describing their engineering and product management peers.

Outside of the intense project work that happens in Designcamp for New Hires, special attention is paid to the culture and morale of the group. The organization encourages social events in and outside of the office to strengthen bonds in the group and show appreciation for the sometimes long, late hours worked. One event during Designcamp invites new hires' friends and family to the campus, with a goal of creating community and thanking the wide network of support that enables the Designcampers to contribute so productively. These are sponsored events that are meant to enhance culture by demonstrating appreciation and investment in the participants, but the Designcamp participants themselves initiate many aspects of the group culture.



Figure 2. First day of Winter Designcamp 2014.

As of March 2015, the organization's Education team is beginning to plan the fifth Designcamp for University Hires. The program itself is constantly being iterated and adapted to better meet the needs of participants and the business.

### **PROGRAM CHALLENGES**

Collaboration and coordination amongst designers, developers and stakeholder teams presents challenges. The Designcamp planning team continually seeks ways to help participants establish empathy for others and understanding of the various business and development disciplines in order to create the best possible conditions for the teams to innovate. Designcamp leads regularly mentor participants through interpersonal and interdisciplinary friction.

There is a need for the designers to quickly build domain knowledge so that their projects can contribute to real business problems. Designcamp is a relatively short experience when compared to the time it can take to understand the complex nature of technical users and how they work. Designers spend countless hours wrestling with technical questions and validating user assumptions throughout the camp. It takes the active participation of dozens of experienced mentors and sponsor users to usher Designcampers into complex domains.

In addition to domain knowledge related to technical product areas, there is a need to familiarize designers with code as the medium for executing designs. While all designers do not need to achieve an expert ability to write code, they must establish a baseline understanding in order to speak credibly with engineers about technical constraints and design possibilities. The integration of software engineering and design disciplines is a prevalent

challenge in the industry, and Designcamp for New Hires experiences this challenge at scale.

## **PROGRAM SUCCESSES**

Designcamp for New Hires projects have contributed meaningfully to business outcomes. The Designcamp teams have inspired new approaches across the organization's software portfolio, including spawning two signature products for the company. By sponsoring projects that tap into this new pool of talent, the design organization and the company are seeing direct benefit.

As a result of the program, designers and developers form professional and personal bonds that encourage peer mentoring and a healthy community of creativity and learning. The design organization's culture is thriving and continues to grow as each "class" of Designcamp for New Hires advances into the professional studio.

## **OPPORTUNITIES FOR INDUSTRY AND EDUCATION**

Designers, especially visual and industrial designers, report that while they may have created software concepts in the course of their university education, the work was not generally evaluated rigorously. Software projects in traditional design education may be viewed as extra credit or supplementary to the main assignment. There is opportunity for industry to share software development strategies with university educators in service of establishing new curricula for creating successful software designs.

Designers who can code or have special knowledge of software engineering tools have a keen ability to express design concepts that are well understood and implementable by engineers. Similar to interdisciplinary teams, multidisciplinary designers have greater capacity to solve complex problems.

Designcamp for University Hires is unique in that it readily considers Industrial Designers for software-oriented roles. To date, the program has hired 21 industrial designers, roughly 10% of total new hires. Industrial designers are contributing to user research, user experience design, visual design and front-end development. They often bring a systems thinking view to the team and are adept at applying a human centered approach to defining and solving problems. Industrial design education prepares students to recognize and respect the necessity for designs to be manufacturable, a concept that translates well to software engineering and the requirement to implement designs in code. There is clear opportunity for industry to recruit industrial designers into roles outside of hardware design, such as software and service design, and to be flexible in their acceptance of designers who wish to move freely between design disciplines throughout their careers.

## **CONCLUSION**

This case brings to life recent statistics and industry discussion about the extreme demand for software design and engineering professionals in technology companies. Clearly, there is also demand for more university design education curricula that teaches a human-centered approach to designing software experiences. Additionally, as new professions and technical fields rapidly emerge, corporations may find growing need to offer structured education programs that fill in the gaps between university education and new areas of competitive expertise. University and corporate educators will do well to connect and share pedagogical approaches and best practices.

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