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Featured Post

Web Designers Have a Bright Future Ahead with the IoT

BY ALEC SEARS · MARCH 5, 2018 · 5 MIN READ

The Internet of Things (IoT) has rolled in like a slow and steady wave since 1982. That's the year Carnegie Mellon University modified a Coke machine so programmers could get updates on the machine and see if cold drinks were available.

Today, the IoT is booming. For example, Walmart uses radio frequency identification (RFID) sensors to determine top-selling items in its stores, while governments use the technology to solve chronic community problems. IoT-enabled home automation systems are becoming the norm, empowering homeowners to adjust lights, temperature, or security cameras from afar.

IoT's future looks bright, too. Gartner reports that more than half of new business processes will use the IoT by the year 2020.

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GROWTH IN THE INTERNET OF THINGS
THE NUMBER OF CONNECTED DEVICES WILL EXCEED 50 BILLION BY 2020

BILLIONS OF DEVICES

2020 50.1B
2019 42.1B
2018 34.8B
2017 28.4B
2016 22.9B
2015 18.2B
2014 14.2B
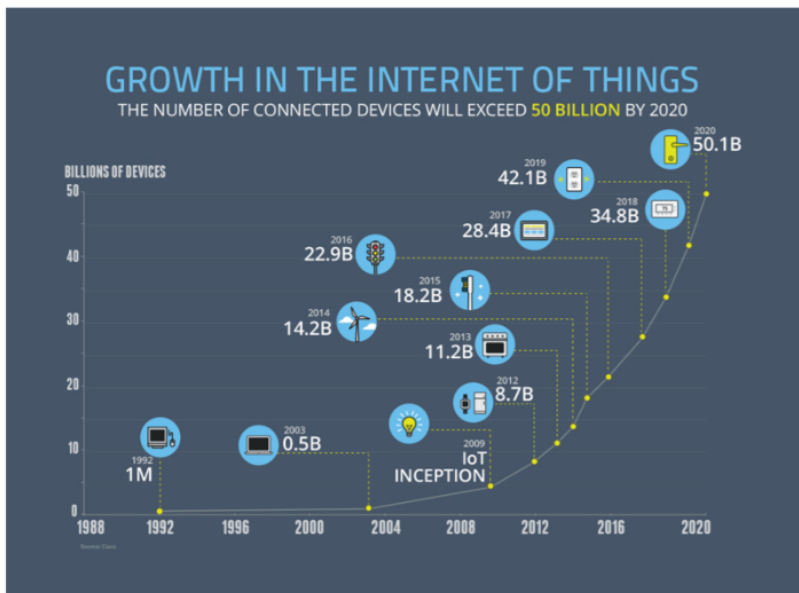2013 11.2B
2012 8.7B
2003 0.5B
1992 1M
2009 IoT INCEPTION

Image Credit: Datafloq

At the heart of those IoT systems are the User Interface (UI) and the User Experience (UX). UI comprises the visual elements of a page; UX focuses on site navigation, search engine optimization, and research and analytics.

Web designers are the architects of these elements, and CNN Money predicts an **18% growth** in UX designer jobs in the next ten years. With the increase in demand, however, comes an expectation that designers have a wide variety of skills to meet the complex demands of building sites for the IoT. Read on to learn more about how the IoT will impact the way web designers work and how you can prepare for this change.

Get Familiar with New Expectations and Responsibilities

Web designers oversee several complex tasks in the world of IoT:

- They **build sites that communicate** with back-end databases that have collected information from IoT devices.
- They create front-end interfaces, allowing users to interact with numerous devices that frequently have different screen sizes or run on different platforms.
- They ensure that user experiences will be clean, fast, and intuitive.

"[UX designers] will have to construct devices that intuitively communicate their needs. For instance, Amazon's voice-activated Alexa blinks a pleasing blue every time it receives a command but flashes in red when there's a problem. This tells the user when a problem occurs without them having to get out an owner's manual," says Sheana Ahlqvist, a user experience researcher.

"[Overall], the design must ensure that all the components work well together and deliver, not just the benefits the product promises, but also a great UX," **says Claire Rowland**, an independent UX and product consultant focused on the IoT. "Creating a well-designed product is about getting the entire experience right. It's not just about putting UIs on 'things' or hiring someone to make an app to work with the 'thing' you've already made. It's about figuring out how users experience interactions around the whole system."

Because an effective front-end programming language helps deliver a positive user experience, it's also likely that a web designer's primary coding language will change.

Consider Adding JavaScript to Your Skills

JavaScript is already widely used in web pages, web servers, mobile apps, and IoT systems, and **it has numerous benefits** that suit it to the IoT's complexity in particular. Its codebase is stable and maintainable; it provides access to many tools and testing frameworks; and most importantly, JavaScript is already spoken on much of the internet.

"More elements will likely be created with JavaScript as it has the potential to cope with the communication demands of IoT," says Richard Howe, director of Colour Rich, a website design company.

JavaScript also has an 'event loop' that helps expedite tasks.

"We can receive and respond to events, then wait for a callback from each event that notifies us once it is complete. This means we can respond to events as they happen, juggling many tasks simultaneously as they come in," explains Patrick Catanzariti, founder of Dev Diner, a site that explores developing for emerging technology. "Multiple devices can also respond to the same events.

This works nicely in the Internet of Things."

Build Your Knowledge Base

The savvy web designer should build skills now to prepare for this new wave of IoT possibilities. Class Central features a list of courses covering topics such as how science and technology have developed to enable the IoT, what the future of embedded devices looks like, and the basics of robotic motion systems for on-ground robots.

Udacity offers a free course about the design of everyday things, with lessons on affordances and signifiers, conceptual models and the system image, and gulfs of evaluation and execution. And Florida International University will be the first university in the nation offering an IoT degree in Spring 2018.

Whatever you decide, building cross-disciplinary skills will help you keep pace with the world of IoT and stay ahead of the competition.

Take Your Seat at the IoT Table

There is indeed a bright future ahead in the IoT, and UX/UI designers will play a key role. In fact, web designers are integral to progress, according to Alexis Zanger, Senior Marketing Manager of Aegis Software Corp.

"Everywhere we look, an IoT opportunity can be found. Couple that with the internet, and web applications and designs can transcend to offer meaningful innovation that gives users a more interactive experience," Zanger says. "Web designers will need to have a fresh perspective with connectivity in mind from the start and rethink how electronics and software interact. Without the right combination in place, [the] IoT won't be able to reach its full potential."

As the IoT becomes more fully integrated with web design, use the above advice to transition through your changing career.