The Modern Difficulties for Developing an E-Commerce Presence in 2022

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# 1 Introduction

The first introduction to e-commerce was a lot further back than you would think. In fact, the first e-commerce shop predates the advent of the World Wide Web (Ang 2021) and was operated using a dial up bulletin board system. Boston Computer Exchange (BCE) was the first online marketplace that allowed for people to buy and sell used computers. The only draw back to this design was the restricted technology and the effort required to complete a sale or a purchase.

By the 1990’s the Internet has already established itself as a major global centre for connection and communication. Around 10 million unique visitors each month used Netscape's Navigator and Mosaic, the two most widely used web browsers in 1994. In the same year, Jeff Bezos established Amazon, which now serves as an online marketplace for hundreds of thousands of unique goods. He launched his own e-commerce website in 1999 after the company quickly expanded to become among the biggest in the world. After 30 days of operation, it was shipping books to 45 different nations, and after two years it surpassed all other retailers in the US. The idea of "one-click" shopping was launched by Amazon in 2002, enabling shoppers to purchase goods without looking elsewhere.

As the internet developed and grew so did the need for Web standards. Tim Berners-Lee founded an international organization called World Wide Web Consortium (W3C) for which its goals were to create a standardized way of programming for HTML, XHML, XML and CSS markup languages. They also aimed to increase knowledge and development of Web Accessibility Rules (WCAG).

Up until this moment, the World Wide Web only housed simple websites that employed markup language to display tables and buttons for user navigation. Design and User Experience hadn't received much consideration or investigation. That is, until 1995, when Donald Norman, Jim Miller, and Austin Henderson from Apple Computer gave a presentation at CHI ’95 Mosaic of Creativity called What You See, Some of What's in the Future, and How We Go About Doing It: HI at Apple Computer. This presentation introduced the concept of analysing your target audience and designing to their needs in order to create a product that was easy to understand and even easier to sell, rather than designing it your way and being required to demonstrate how to use it. The same way of thinking was depicted in Steve Krug's Don't Make Me Think (2000). Krug discusses the idea that a well-designed computer programme or website should allow users to complete their intended tasks in the simplest, most straightforward manner possible, without having to think too hard about how to do so.

Websites during the 1990’s to the 2000 era were made with the purpose of hosting and displaying information. Was this information easy to dissect and pick apart? No, most websites had large archives of text-based documents that had blue web links inserted throughout and users must have been overwhelmed with such a large amount of visual inconsistency upon loading the site. This all begin to change around the early 2000’s when designers where now thinking more of the design and user experience of their websites. Microsoft started to sell the Zune handheld player in 2009 and the website released for this product was a far stretch from what people were used to. Its flat design, contrasting colours and use of imagery clearly depicted a website that was modern and stylish which perfectly represented the product that they were selling.

Since Covid-19, there has been a massive increase in online sales, and websites that neglected their UX design have been forced to either redesign or risk losing customers. We are surrounded by e-commerce websites that offer us access to food, clothing, and a wide range of other products. So, what skills must a developer have in 2022 in order to develop a modern e-commerce presence?

# 2 Discussion

Web developers in the 1990’s were required to have known either HTML, XML, or XHML and maybe CSS for styling. These two languages were the industry leading and could produce a sufficient website at the time. With the release of JavaScript 1.0 in 1995 it allowed developers to create interactive websites using an object-oriented language.

As the years went on and more research was put into behavioural studies and into marketing it became clear that to create a good website, you didn’t just need a good business idea, but users and consumers needed to be able to manoeuvre the website itself. This was where the introduction of User Experience became apparent. It was critical to allow users to achieve what they wanted without too much thought process being used.

With the increase in programming languages, web server providers, frameworks and complexity of websites and web applications in this modern era, it simply isn’t enough to know 3 basic languages.

Let’s look at what programming languages amazon use for their e-commerce platform. They use Python, Java, JavaScript, HTML, CSS, React, Angular, R Programming and SQL. Now no one developer is expected to be an expert in all these languages, but if you want to be able to even compete alongside the likes of larger brands such as Amazon, Nike, Under Armour etc then you will need to know at least HTML, CSS, JavaScript, some library such as React or Angular and SQL.

It's not just enough however to simply know how to programme, a modern-day developer will need to know how to structure their website and design to suit the needs of the consumers and users.

From this point on, let’s look at what is to be expected of someone who wants to create an online e-commerce shop from scratch and the skills and tools required to do so. You will see me use the words designer and developer interchangeably because in this modern era of web development, if you want to compete with larger brands then you need to be able to do both.

A developer looking to create an online presence in 2022 will be required to understand their audience. Who is it that they are looking to sell to? Are they older, younger, both? Are they using mobile devices, computers, iPad’s/tablets? Where are they situated, locally or internationally? These are questions that should be asked before beginning to programme an application.

A firm understanding of the prototyping stage will allow a designer to develop the base layout of the website and all the pages that are apart of it. Creating an organic flow will make sure that users are able to seek out the relevant information quickly and confidently on the website. It is then their job to scope the project in and begin designing the components such as buttons, menu’s, forms, and other interactive sections on the website. A designer will need to use prototyping software or design software to do this. There are loads of options when it comes to choices, popular options include Figma which is free to use, and we also have Adobe XD which is also very popular but requires a license. By using one of these applications, you can link all the screens together and provide a real looking prototype and allow users to click on buttons and animate their response. The entire design process should be accounted for and prototyped before programming. If you are creating designs as you could then the prototyping stage was not completed successfully.

After completing and reviewing the prototype a designer could ask some friends, family, or the public to complete some basic tasks such as finding the product they want using the prototype. This is referred to as Alpha/Beta testing depending on what stage of the project you are on. This can be done using paper or digital means, it’s a great way of seeing if the User Experience is positive, or if something needs reworked or redesigned before submitting the final design for development.

Once happy with the prototype, development begins. At this stage you need to be aware of what languages you are going to use. These choices vary depending on the purpose of the e-commerce website. Are you going to create a fully functioning sign in system that holds and stores users’ orders and their information? If so, then security will be at the forefront of development. Choosing the correct library to work with can be hard as there are so many to choose from. React and Angular are very popular and can be used to build web applications for both mobile devices and desktop computers.