WEB DEVELOPMENT TRENDS IN 2024

Introduction

The first web page went live in 1991, and with that launch, our lives were forever changed. Today, millions of people around the world spend hours surfing the Internet, earning money, spending money, finding their other halves, obtaining university degrees, watching movies, listening to music, probing conspiracy theories, and more. The list is practically endless.

Web development evolved from simple web pages to complex websites that can immerse users in a given topic and create experiences that wouldn't be possible without the magic of computing. You might remember an iconic statement by Bill Gates: "If your business isn't on the Internet, then your business will be out of business." The impact that a web presence has on business performance is now absolutely clear, just as night follows day. A good website makes it possible for companies to attract customers, learn about their behavior, propose what they're looking for, and, finally, earn money.

[Top 3 Web Development Trends to Watch in 2024](#)

However, just any website isn't sufficient to benefit a business. In fact, a website that isn't user-friendly, is slow to load, or is unresponsive can mess up everything a company has tried so hard to achieve.

Let's dive into the web development trends that will help set your site apart from the crowd.

Web development market overview 2024

The reason people love trend reports is that they make it possible to keep up with the fast-moving world of web development and understand what to expect. The team at Yellow has read through a stack of 2024 trend reports so you don't have to. Of course, if you really want to do that, we can recommend Adobe, Google, Blue Corona, and SocPOB reports on web development trends and tendencies. What is now apparent, even in times of uncertainty, is that your website must be good-looking, fast, and mobile-friendly. Otherwise, visitors will leave. In the absence of customers, your business will starve.

It takes a visitor approximately five seconds to form an opinion of a site, according to Google's research. That's why an appealing, user-friendly design is so important. Blue Corona reports that 38% of visitors will stop engaging with a website if the content or layout is unattractive. You might think, "Well, 38% doesn't sound that bad." Hold on. Almost 90% of consumers shop the competition after a poor user experience. (Web FX)

Here are some eye-opening website development statistics that are worth keeping in mind:

- 47% of users expect a maximum load time of two seconds for an average website. (Curatti)

- Retailers lose $2.6 billion each year because of slow-loading websites. (Inside Design)

- Thirty-one percent of all retail e-commerce was generated via mobile devices in 2021. (Statista)

- Seventy-five percent of consumers admit to judging a company's credibility based on its website design. (Kinesis)

- A group of scientists from Northumbria University found that 46% of consumers in the study made their decisions regarding the credibility of websites on the basis of visual appeal and aesthetics.

- **47% of users** expect a maximum of 2 seconds page loading time.

- **$2,6 billion** is lost by retailers each year because of slow loading websites.

- **31% of all retail e-commerce** was generated via mobile devices.

- **75% of consumers** judge a company's credibility by its website design.

- **90% of consumers shop** the competition after a poor user experience.

And here iis an overview of the web development market in 2024:

1 **Focus on Mobile-First and Responsive Web Design:**
As mobile devices continue to dominate Internet usage, web development is expected to focus heavily on mobile-first and responsive web design in 2024. Websites that are optimized for mobile devices and provide seamless user experiences across different screen sizes and devices are likely to be prioritized by businesses and users alike.

2 **Emphasis on User Experience (UX) and User Interface (UI) Design:**

Partnering with other businesses to offer complementary financial services, such as insurance or investment products, can be a lucrative monetization strategy for a banking app. By collaborating with other businesses, the app can offer a more comprehensive suite of financial services to its customers while receiving a commission for each sale made through the app.

3 **Growing Demand for E-commerce and Online Marketplaces:**

The e-commerce industry has been experiencing significant growth, and this trend is expected to continue in 2024. Web development for e-commerce and online marketplaces is likely to be in high demand, with businesses seeking to establish or enhance their online stores, implement secure payment gateways, and integrate other e-commerce functionalities.

4 **Adoption of Progressive Web Apps (PWAs) and Headless CMS:**

Progressive Web Apps (PWAs) and headless content management systems (CMS) have been gaining traction in recent years, and their adoption is expected to continue in 2024. PWAs offer a seamless and engaging user experience across different devices, while headless CMS allows for more flexibility and scalability in managing website content.

5 **Continued Growth of JavaScript Frameworks and Libraries:**

JavaScript remains one of the most widely used programming languages in web development, and the popularity of JavaScript frameworks and libraries is expected to continue to grow in 2024. Frameworks such as React, Angular, and Vue, along with libraries such as jQuery and Axios, are likely to be in high demand for building modern web applications.

Frontend and backend development trends [+ trending languages in 2024]

Frontend and backend development are key components of web development that influence how websites and web applications function. As technology evolves, new trends in frontend and backend development are expected to shape the web development landscape in 2023. We'll explore top trends to help developers stay ahead in this dynamic field. Let's delve into the exciting world of frontend and backend development trends for 2024.

Frontend trends

The time when a frontend web developer only needed to know HTML, CSS, and JavaScript is long gone. So, the way to keep pace with a rapidly changing environment is to watch the latest frontend technologies.

● JavaScript (Yep, it still rocks.)

JavaScript is still the universal and the most popular programming language for website creation. Statista reports that, as of 2022, JavaScript is at the top of the list of most frequently used web technologies worldwide with 65% of respondents stating they've used it in their work. Why is that so?

- It's an object-based and dynamic language used both on the client side and the server side.
- It's supported by many browsers, such as Safari, Chrome, Firefox, and Internet Explorer.
- Interactivity is excellent because JavaScript is a language that gives the web page its structure and style.
- Many libraries and frameworks are available.

It's likely that JavaScript will remain popular for years. It will, however, have some modifications, as we'll see in the next section.
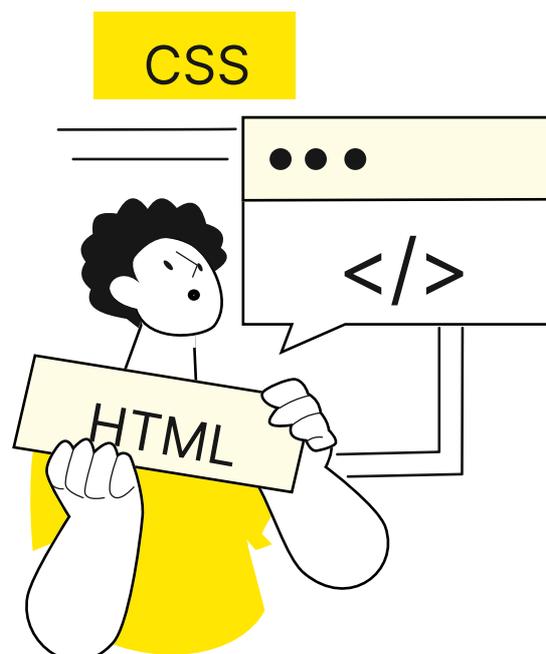
● Jamstack

In the JAMstack definition (which appeared in 2015), JAM stands for JavaScript, API, and Markup, but now "Jamstack" is widely used. This is how Mathias Biilmann, the CEO and co-founder of Netlify, defines the term: "It's a web development infrastructure based on client-side JavaScript, reusable APIs, and prebuilt Markup."

The synergy among these three elements gives developers a simpler, faster, and cheaper work experience. Moreover, Jamstack-based architecture makes websites more secure because there's no need to worry about database or server protection. They're scalable, too. So, if a project goes viral, the content delivery network (CDN) will adapt.

● Mobile-first Approach in Web Development

As the majority of browsing is now done on mobile devices, companies can't ignore the importance of this approach. Moreover, it's no longer about developing a website that displays well on smartphones but making it responsive, in other words, making a website that displays equally well on mobile devices with different screen sizes. Responsive web design has become one of the top web development trends, and the following rules enable to achieve it:

- Focus on vertical orientation rather than landscape one, and on functions done with a touchscreen.
- Set up meta viewport tags to help browsers change how pages are scaled.
- Use different layout methods, e.g. Grid, Multi-Column, or Flexbox, to make layouts fit the viewport.
- Use CSS queries to change the size of things based on what the devices can do.

● Headless Architecture for Content Management

This type of content organization became popular once Netflix adopted it. To understand what it's about, let's look at a traditional (or coupled) CMS.

The use of a traditional approach in content management is like putting all content—images, videos, texts, and code—in a single box. It means the frontend and backend are coupled together, making it very difficult to process content updates.

People consume information via many devices simultaneously. So, imagine that a customer wants to buy baskets, starts searching for them on the phone, then compares reviews on the desktop, and finally makes a purchase via a tablet. All of the content must look good on all of the devices involved, which is why headless architecture for content management is the way to go. It doesn't make traditional CMS bad. It's simply a fact that content consumption has evolved, and so has web development.

The benefit of using headless CMS is to make content delivery fast and easy so that content creators don't need to dive into code. In a headless CMS, the frontend and backend aren't linked (decoupled), so they represent two different systems: One is responsible for content creation and storage, and the other is used to present it. Once the content is created, the headless architecture uses API to deliver it and make it look good on any device.
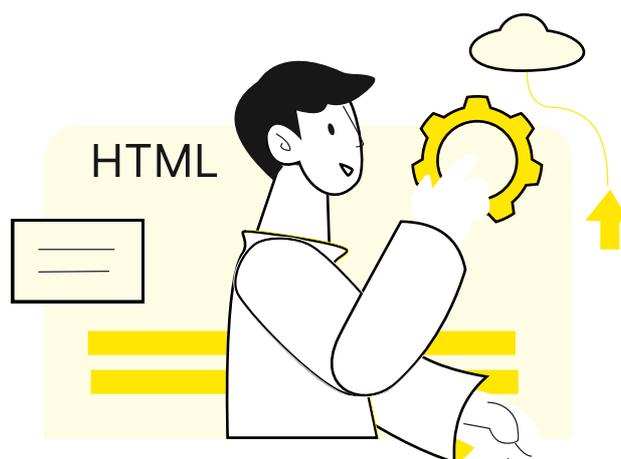
Backend trends

The backend must be secure, must react quickly to users' requests, and must be easy to scale if needed. Let's examine each of the trending web development technologies for backend in 2024 based on Yellow's web development expertise.

- **Python**

  Python developers are in high demand, and right now there are at least 51,000 Python developer jobs in the United States posted on LinkedIn. Indeed reports that the jobs requiring Python have increased by 26,275.00% since 2018. Huge companies like Google, Facebook, and Spotify rely on this programming language. Let's look at some of the reasons for that.

  - Compatibility with Artificial Intelligence (AI), Machine Learning (ML), Data Science, and Internet of Things (IoT)
  - Integration with other programming languages
  - Availability of collections of libraries and frameworks

- **Enhanced Cyber Security as a Well-Established Web Development Trend**

It isn't big news that companies take data security very seriously. Gartner, Inc. forecasts market growth all the way to $170B in 2024. Kent Walker, who is Google's senior vice president for global affairs and chief legal officer, said, "We'll invest $10 billion over the next five years to strengthen cyber security, including expanding zero-trust programs, helping secure the software supply chain, and enhancing open-source security."

It still won't be enough just to invest millions in cyber security. It has more to do with how well companies (from startups to large operations) build safe, secure backend architectures in order to prevent data loss and network intrusion. There are at least 3 cyber security threats that web development specialists must know about:

1. Cross-site scripting (XSS)

XSS attacks, Stored XSS, DOM XSS, and Reflected XSS, oh my! All of them are effective and dangerous and help hackers scan websites for vulnerabilities and steal users' credentials and sensitive information. How to prevent that? Make sure to use Django or Ruby on Rails which includes algorithms to block XSS and context-sensitive encoding for DOM XSS attacks.

2. Sensitive data exposure

Data leak is one of a company's worst nightmares that can cost their reputation and billions of dollars. Happily, there's a way out: Strong encryption policies. Make sure to protect personal or sensitive information, such as customer names, addresses, phone, email addresses, credit card numbers, employee dates of birth, social security numbers, etc.

3. SQL injection

SQL, NoSQL, and Path injections are used by cybercriminals to "inject" malicious code into your web pages to access databases, change information, steal data, or add malware to your code. An antidote? Data cleaning, input validation, character-escaping, parameterized queries, and stored procedures.

Cyber attacks are getting smarter and more sophisticated, and data security is becoming not only one of the app and web development trends, but an absolute must-have.

● **Database Options**

Traditional SQL databases are still in use, but cloud-native ones are already available (like Google's BigQuery or DynamoDB, by AWS). In fact, there will be more options available for any given case:

- RDBMS for transactional use cases with structured data
- Wide-column database for low-latency, distributed database
- Key-value store for distributed cache
- Graph database for extremely relational data
- Search engines for full-text and advanced search (e.g., location-based search)
- Distributed SQL for low-latency, distributed databases with a transactional guarantee
- OLAP database for data warehousing and analytics

The array of options effectively guarantees a match between a problem and the tools to quickly, fully resolve it.

Bonus - Trending Languages in 2024

JavaScript and Python remain the most popular programming languages for the front end and backend. In this chapter, we'll discuss development language trends and what one can expect to be used in 2024.

Express.js

This is a free, open-source web application framework for Node.js. We love Express.js because it helps build beautiful web applications quickly and easily.

NestJs

Inspired by Angular, this framework is widely used for web application design. Scalability is a particular benefit.

Next.js

We at Yellow Systems are big fans of Next.js. It lets us deliver the highly scalable, data-intensive, real-time backend services needed to power fast, responsive websites and apps.

Nuxt.js

Nuxt is inspired by Next.js, which is in turn inspired by React.js. It's a great way to manage complicated aspects such as asynchronous data, middleware, and routing. It's also extremely helpful if SEO is a must for the design of a website because Nuxt.js optimization makes it easy to generate a number of SEO-friendly HTML pages.

Latest technology trends in web development you need to look at in 2024

It's good to know you're about to read this chapter. We've covered frontend and backend trends, so it will be great to talk about the web technologies we'll see in 2024. We bet you'll see them in different industries, including your own.

Dark Mode

Facebook, Twitter, Instagram, Google, and Reddit have already adopted dark mode, and 95% of Polar users prefer dark over light mode even in the daytime. Why is that so? Dark mode offers key advantages:

- It reduces blue light.
- It saves battery life.
- It makes UI content accessible and legible for everyone.
- It limits the risk of eye strain even in low-light conditions.

Voice Search

The size of the voice assistant application market is expected to grow from $2.8 billion in 2021 to $11.2 billion by 2026, thanks to progress in voice-based AI technologies, the increasing use of voice-enabled devices, greater focus on customer engagement, and the emergence of low-code platforms for voice-assisted applications. Besides, voice search is fast: It's just easier and faster than typing a request, isn't it?

Voice Search

Voice search offers advantages that benefit users and business owners alike:

- It's time-saving.
- It allows extra time for surfing on a web page.
- It gathers information about customers' behavioral patterns.

AI x Chatbots

Artificial intelligence (AI) gets a lot of media attention, and you've probably seen or heard various reports on that subject. When you're automatically tagged on someone's Facebook photo or when you receive personalized recommendations on Netflix or Spotify, it means "a pinch of AI" was used to do it. AI helped Deep Blue beat Garry Kasparov, a chess grandmaster and one of the greatest players of all time, in the iconic Deep Blue vs. Garry Kasparov chess battle of 1997. How, though, can AI benefit your company? Let's get down to business.

AI gets smarter with each new day, and that growing prowess makes interaction with chatbots a pleasant, entertaining experience for customers and clients. AI-powered chatbots also serve businesses by collecting data and learning from interactions with customers. They even have 24/7 problem-solving capability, which can save companies the cost of hiring support managers. (That doesn't mean replacing a majority of them, but it simply means the support teams can deal with more complicated issues.)

AI x Chatbots

There are two types of chatbots. Text-based (1) and Voice-enabled assistance (2). We interact with both, but let us dot all the I's to avoid any misunderstandings.

As the name suggests, text-based chatbots are the ones that interact with users through text messages. They are able to understand the customer's needs and provide them with solutions, gather feedback and keep customers engaged. However, they require typing, which requires more time and effort than using voice. That's why voice-enabled assistance is getting popular.

When it comes to voice-enabled assistance, you probably think of Siri or Alexa that Americans use almost on a daily basis with mobile devices, tablets, laptops, smartwatches, or in the car. These chatbots can communicate using vocal input and output. However, businesses adapt voice application solutions and services that use voice search and recognition, speech synthesis, and natural language processing (NLP) too. Why? Here are just a few benefits that voice-enabled chatbots offer to companies:

1. They create a personalized branded experience.
2. They communicate with your customers in a human-like way, which enables your company to build an emotional bond with your clients. Understanding human language is a complex and continuous process, and chatbots should not only understand the speech but be good listeners, too. AI is able to "train" chatbots to be good listeners.
3. They handle a variety of tasks ranging in difficulty.

Motion UI as one of the emerging development trends

The result of this technology can, if it's expertly designed and implemented, provide the visual appeal that really grabs users' attention. More importantly, motion UI helps communicate a sequence, next step, transition, or action for a digital product thus making the navigation easier. In the process, it directs the user's attention to the exact areas of hierarchy on a web page. And it's simply easier and quicker to view a sequence of animated elements rather than reading text, instructions, and other static information.

Other use cases of motion UI include the following:

- **Welcoming users.** Do you remember the iconic animation where the two hands joined the logo on Nokia phones? You can integrate a similar one into your website.
- **Refreshing content.** Motion elements can keep your users engaged for a short period of time and let them know that the website is loading or processing the information.

Fun elements also help keep user attention and make your website different from your competitors.

Accelerated Mobile Pages

As statistics show, people prefer smartphones and tablets over desktops. In 2019, 63.3% of all website visits came from mobile devices—and almost 70% in the next year, and the rate is expected to grow further.

Accelerated Mobile Pages

Accelerated mobile pages (AMP) is an open-sourced project powered by Google that is designed to speed up web pages for people using smartphones or tablets. In 2016, Google wrote in a blog post: "We want webpages with rich content like video, animations, and graphics to work alongside smart ads, and to load instantaneously".

For "light-weight" mobile pages, AMP uses a stripped-down version of HTML and a lightweight version of CSS.

It's worth mentioning that a desktop version, a mobile version, and an AMP version are three different versions of a website and cannot replace one another.

Progressive Web Applications (PWAs) in Website Development

A PWA is basically a website that looks like an app. Examples include Tinder, Pinterest, YouTube Music, and Trivago Hotel Booking. They're built with a certain set of technologies (we'll talk about that a bit later) and are delivered via the web. PWAs are intended to work on any platform that uses a standards-compliant browser, whether it's a desktop computer or a tablet. Progressive web apps can do most things that native apps can do:

- They can operate offline.
- They can use hardware features, such as by accessing your camera and microphone or even GPS.
- They install reliably for the owner, and they load quickly for the visitor.

So, how are progressive web apps built? The tech stack consists of HTML, JS, and CSS. As for technologies, PWAs are made of Service Worker, HTTPS, App Shell, Web App Manifest, and Push notifications. Let's talk about each of them:

1. **Service Worker** is the heart of a PWA and a game changer for the web development industry. Service Worker works as a proxy between the network and the app running in the background, enabling the website to store the information so that users could access it offline.
2. **HTTPS** maintains a high level of progressive web app security which prevents them from cyber-attacks.
3. **App Shell** serves as a skeleton for app pages. It is called a shell because it represents a layout without the content and dynamic elements. To put it simply, this is a virtual framework that will be filled with the content later when the app will load it.

Progressive Web Applications (PWAs) in Website Development

4. **Web App Manifest** is a JSON file containing the name of the app, description, icon, start URL, background, and theme colors
5. **Push Notifications** are notifications users get from the website.

Google's official introduction says that PWAs are fast—load instantly even in uncertain network conditions, reliable—respond quickly to user interactions with silky smooth animations and no janky scrolling, and engaging—feel like a natural app on the device, with immersive user experience.

You may also find useful information in our guide to SaaS app development.

AR x VR for enhanced UX

Statista predicts that the global market for AR, VR, and MR will grow from $30.7 billion to $300 billion by 2024. After all, it has penetrated our lives already. Think of all the filters and cute masks you see on Instagram and Snapchat. Augmented reality (AR) makes them possible.

Business owners from the manufacturing, tourism, architecture, and beauty sectors can benefit from these technologies, which enhance the customer's experience and help establish an emotional bond with the product or service. Take The Ikea app as an example: the technology lets you virtually place true-to-scale 3D models in your very own space. Or Wanna Kicks that allows you virtually wear your chosen footwear. Those are mobile apps but the technology can be implemented into your websites.

5 The most important factors to consider when building a web app in 2024

1

User Experience (UX) and User Interface (UI):

Your web app's success depends on how well your users interact with it. Therefore, you should invest time and resources in designing a user-friendly interface that makes your web app easy to use and navigate.

2

Mobile Responsiveness:

In 2024, mobile Internet usage is expected to surpass desktop Internet usage. As a result, it's crucial to ensure that your web app is mobile-friendly and responsive. Your web app should be optimized for all screen sizes and device types to provide a seamless user experience across all devices.

3

Security:

Cybersecurity threats have become more sophisticated and complex over time, and as a result, web app security is more critical than ever. Your web app must have robust security measures to protect user data and prevent data breaches.
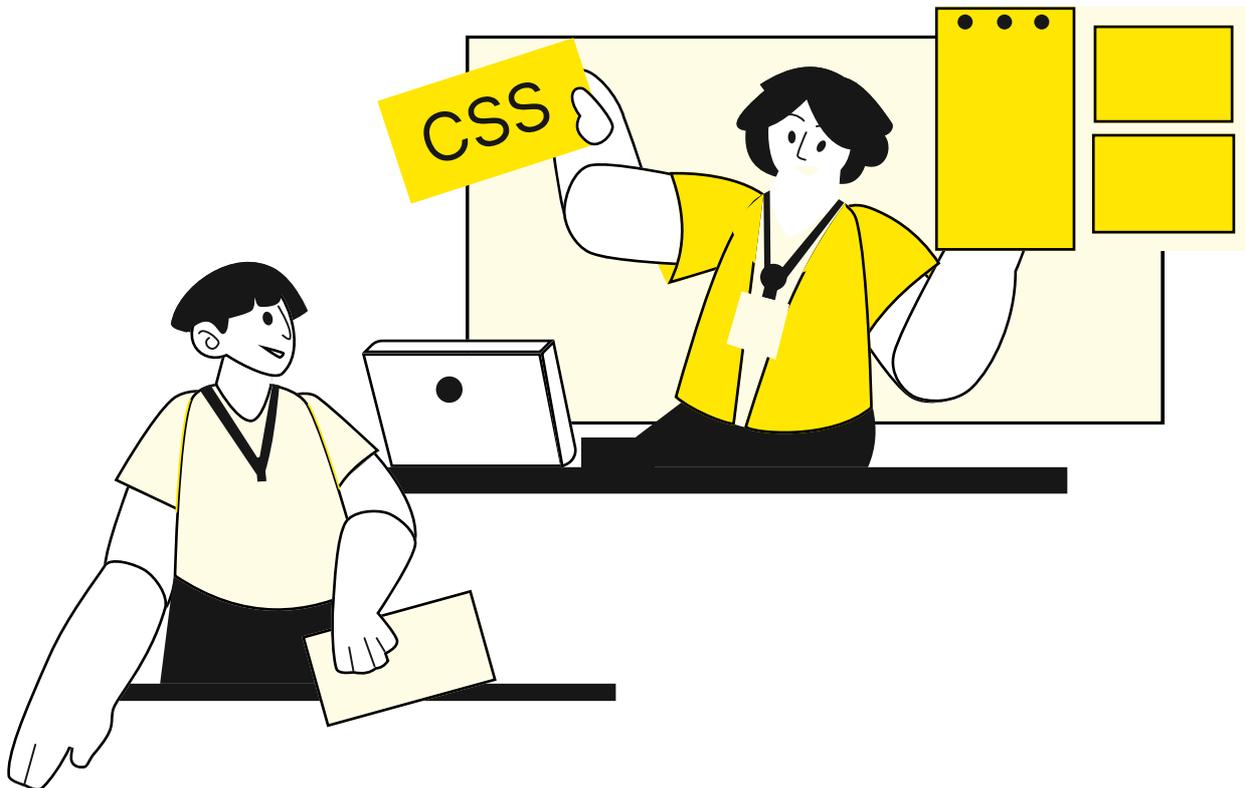
4

Performance:

Your web app's performance is critical to your users' experience. Users want fast, responsive web apps that provide instant results. Therefore, it's vital to optimize your web app's performance by reducing load times, minimizing server requests, and implementing caching techniques.

5

Scalability:

Your web app must be scalable to handle the expected user load and accommodate growth. It's essential to build a web app architecture that can handle increasing user traffic, and that is easy to scale without compromising performance or user experience.

Tips on how to low cost of web development

Reducing the cost of web development can be an important consideration for startups, small businesses, or budget-conscious individuals. Here are some tips that may help lower the cost of web development:

Define clear project requirements:

Clearly define your project requirements and objectives before starting the web development process. This will help avoid scope creep and unnecessary revisions, which can add to the overall cost of the project.

Choose the right web development platform:

There are numerous web development platforms available, ranging from open-source options like WordPress, Drupal, and Joomla, to website builders like Wix and Squarespace. Choosing the right platform that aligns with your project requirements and budget can help lower development costs.

Opt for pre-designed templates or themes:

Pre-designed templates or themes can be a cost-effective option compared to custom designs. Many web development platforms offer a wide selection of templates or themes that can be customized to suit your needs, saving both time and money.

Utilize open-source tools and libraries:

Open-source tools and libraries can significantly reduce development costs as they are often free or low-cost alternatives to proprietary software. These can include content management systems (CMS), front-end frameworks, and other development tools that can help streamline the development process.

Consider outsourcing or freelance developers:

Outsourcing or hiring freelance web developers can be a more cost-effective option compared to hiring an in-house team. Freelancers or development agencies from countries with lower labor costs may offer competitive rates while delivering quality work.

Prioritize essential features:

Prioritize the essential features and functionalities for your website, and avoid unnecessary complexities or customizations that can drive up costs. Focus on building a Minimum Viable Product (MVP) initially and add additional features as the budget allows.

Optimize for performance and scalability:

Building a website with performance and scalability in mind can save costs in the long run. Optimizing images, caching, and server-side processing can help reduce hosting costs, while designing for scalability can accommodate future growth without significant redesign efforts.

Plan for ongoing maintenance and updates:

Factor in ongoing maintenance and updates when budgeting for web development. Regular maintenance and updates are essential to keep the website running smoothly and securely, preventing potential costly issues down the road.

DIY approach:

If you have the technical skills and time, taking a DIY approach and building the website yourself using free or low-cost tools and resources can significantly reduce costs. However, be mindful of potential limitations and ensure that the end result meets your business requirements.

In conclusion, reducing the cost of web development requires careful planning, prioritization, and resource management. By defining clear project requirements, choosing the right platform, utilizing pre-designed templates or themes, leveraging open-source tools, considering outsourcing or freelancers, prioritizing essential features, optimizing for performance and scalability, planning for ongoing maintenance, and considering a DIY approach, you can potentially lower the cost of web development while still achieving a professional and functional website.

8 The most popular web apps in 2024

The digital landscape has witnessed tremendous growth in recent years, with web apps playing a pivotal role. From communication to productivity and e-commerce, web apps are integral to our online experiences. In this article, we'll explore the top 10 web apps expected to impact the web development market in 2024. Let's dive in!

Google Workspace

A suite of cloud-based productivity tools including Gmail, Google Docs, Google Sheets, Google Drive, and more, commonly used for collaborative document editing and communication.

Grammarly

An AI-powered writing assistant that helps users improve their writing by checking for grammar and spelling errors, suggesting better word choices, and providing writing insights.

Evernote

A note-taking and productivity app that allows users to create and organize digital notes, web clippings, and documents across multiple devices.

Discord

A popular communication platform for gamers and other communities. It offers chat rooms, voice channels, file sharing, and integration with other apps. Available on desktop and mobile, Discord is known for its ease of use, customization options, and community-driven nature. It has become a go-to platform for online communities to connect, communicate, and collaborate beyond gaming.

Notion

A versatile productivity platform combining project management, note-taking, and databases. It offers customizable content creation, collaboration, and organization features. Notion is known for its flexibility and is popular among individuals, teams, and businesses for its versatility and organization capabilities.

Netflix

A popular web app that offers online streaming of movies, TV shows, and other video content. It provides a wide range of entertainment options for subscribers to watch on-demand, anytime, and anywhere via the Internet. Netflix's web app features a user-friendly interface, personalized recommendations, and multiple device compatibility, making it a convenient and widely used platform for streaming video content online.

Genially

A web app for creating interactive visual content like presentations, infographics, and quizzes. With templates and customization options, it's user-friendly and doesn't require coding skills. Used by educators, marketers, and businesses for engaging content creation.

Facebook

A web app / social media platform that enables users to connect, share content, and communicate with others online. It offers features such as creating profiles, posting updates, sharing photos and videos, messaging, and joining groups or events. Facebook is widely used for social networking and staying connected with friends, family, and communities online.

Please note that the popularity of web apps can vary depending on factors such as user preferences, industry trends, and technological advancements, and the list above is not exhaustive. It's always recommended to research and stay updated with the latest trends in the web app market for the most accurate and up-to-date information.

Summary

The first web page was created more than 30 years ago, and that's a very long time in the context of IT. In 2024, the industry will continue to grow as more businesses realize they've made a huge mistake by not going online.

Every business needs a website. Assuming that many of them have something unique to offer, their websites could be unique even in highly competitive niches. Thankfully, the industry offers many ways to achieve that uniqueness. From frameworks and programming languages to design trends and voice search implementation, you can choose the right tools to create a web page that will engage users, immerse them in your topic and drive sales. We hope that this guide to web development trends has been useful to your website development needs. If you need the help of a dedicated team to carry out website development for your business, we'd be happy to discuss your idea.

You did it!

Now, you will be more aware of web development trends in 2024.

Check Yellow Systems

If you need assistance in web and mobile development, feel free to contact us. We will reach out to you and provide you with an estimate of your project.

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