The future of software development:

trends, technologies, and key challenges 2022-2025

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Global Software Development: Modern Technologies that Keep Gaining Momentum

>3.6%

Gartner research projects the highest growth rate for IT budgets of the past decade at 3.6% higher than 2021 levels.

Recovering from the aftermath of the pandemic, companies in 2022 will extensively rely on the ability to build digital products and deliver digital services fast. Today's Software Development incorporates involvement of the best available workforce to build high-end products, where cost-effectiveness serves as a major competitive differentiator.

Most trending methods, intelligent frameworks, and latest technologies that will define the future of Software Development over the next decade are:

- **Continuous Integration**, Delivery, and Development (CI/CD) methods will continue helping companies accelerate time-to-market, reduce their software development spending, and boost customer satisfaction.

- **Angular** is likely to become the main instrument for creating enterprise-scale software products, fully-functioning web pages, and complex apps.

- **ReactJS** will be gaining wider application and popularity among smaller teams and projects which are targeting only certain functionalities or needs.

- **Low-Code** development platforms will keep moving traditional software engineering and programming towards simplification and greater accessibility among users.

- **Updating Legacy systems** through Software Modernization, Migration, and Replatforming will be top one priority among a growing number of companies who aim to support connectivity and close critical gaps in performance.

Continuous Integration, Delivery, Development as the Key Enabler of the Faster Product Delivery

In the predominantly digital world, automation and continuous monitoring of the entire application life cycle have become vital. To ensure end-to-end software quality and faster application delivery, companies are increasingly adopting the continuous integration, delivery, and development (CI/CD) Software Development method.

CI/CD offers major business benefits such as improved code quality, faster time-to-market, reduced overall and labour costs, streamlined communication, detailed metrics about applications' performance and improved customer satisfaction.The CI/CD practice makes testing more efficient and debugging easier. All this results in the faster development of high-quality products that companies and customers will undoubtedly appreciate.

Benefits of Implementing CI/CD in Software Development

Automate the Software Release Process

Continuous delivery lets your team automatically build, test, and prepare code changes for release to production so that your software delivery is more efficient and rapid.

Improve Developer Productivity

These practices help your team be more productive by freeing developers from manual tasks and encouraging behaviors that help reduce the number of errors and bugs deployed to customers.

Find and Address Bugs Quicker

Your team can discover and address bugs earlier before they grow into larger problems later with more frequent and comprehensive testing. Continuous delivery lets you more easily perform additional types of tests on your code because the entire process has been automated.

Deliver Updates Faster

Continuous delivery helps your team deliver updates to customers faster and more frequently. When continuous delivery is implemented properly, you will always have a deployment-ready build artifact that has passed through a standardized test process.

Continuous Integration, Delivery, Development as the Key Enabler of the Faster Product Delivery

CI/CD practices gain wider adoption, continuously delivering code into production, providing a seamless flow of new features and bug fixes through the most efficient delivery method. With the growing demand in the global IT industry specifically in the DevOps based Software Engineering, estimated to reach **$8 billion by 2022.**
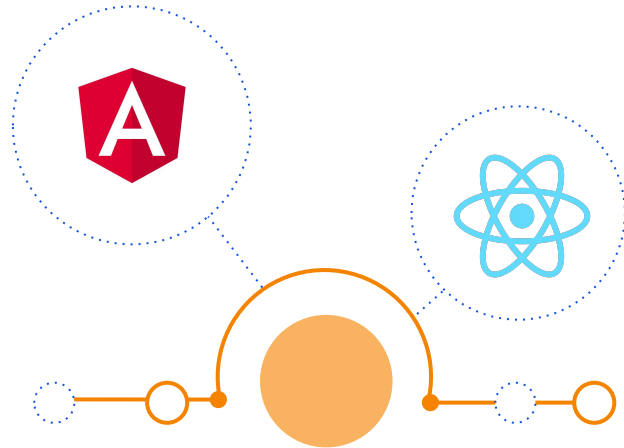
53%

of software testers use Continuous Integration tools, 38% use constant delivery tools, and only 29% use continuous development tools.

19,75%

The Continuous Delivery market is growing at a CAGR of 19.75% during 2020–2025 and expects to reach $1.14 bn by 2023.

The Future of Enterprise-Scale App Development with Angular & ReactJS

Angular

is an open-source full-featured framework by Google, which had been initially used to create hundreds of internal applications for the digital giant himself. Designed with enterprise-scale applications in mind, Angular is widely used by many organizations (Fortune-500 companies (GitHub forum, BMW, Google About, Forbes, Deutsche Bank) to deliver fully-functioning web pages and applications.

The use of TypeScript for increasing the maintainability of code, the performance score that improves as you make more complex applications, and specific ecosystem choices hint that Angular is likely to become the main instrument for long-term and heavy-investment projects where a steep learning curve is compensated for by stability and ongoing tech support.

ReactJS

is easy to grasp, deploy, and start working with, but it's definitely less versatile and maintainable than Angular. The largest companies (Instagram, NY Times, Facebook, Dropbox, Netflix, WhatsApp) are using React to create image grids, new grids, picture galleries, web pages, and chats.

The Future of Enterprise-Scale App Development with Angular & ReactJS

Both Angular & ReactJS can be used for enterprise app development because they are flexible and offer the right functionality depending on the scale of a project. While both can be used at the same time, depending on your project needs, it still might be difficult to decide what technology to use and whether it's actually applicable right here and now.

Angular

is the best choice for creating fully-functional web pages with comprehensive design and plenty of features. ReactJS is better for building specific standalone features from ground zero or for integrating them into the Angular code. If a project is a complicated web app with many features, then Angular is the best choice for this particular project. In contrast, a ReactJS would be a better fit if you need to develop separate features or in-build them into the Angular code. ReactJS can be used for enterprise projects, however, it uses many dependencies and may complicate the teamwork as the dependencies should be learned first by other developers.

ReactJS

may appear impractical when working on larger projects, thus Angular is arguably a better choice for enterprise app development. ReactJS is likely to be used by smaller teams for less ambitious projects targeting only certain elements that are needed to be developed. Surely, it can be used to build the whole front-end part of an app or page, but it may only be due to the developer's familiarity and experience with React. In contrast, developers are going to keep using Angular for more advanced projects as can be seen from the mentioned use cases above.

Low-Code Development as an Accelerator of Software Creation

Software engineering moves towards simplification with a new approach to creating new business applications known as low-code development.

Low-code platforms enable almost anyone to develop software without traditional coding but through graphical user interfaces and configuration. Such programming environments have great potential because they allow people with limited or no specific development skills to turn their ideas into digital solutions.

Although many developers are skeptical of the approach to low-code development, it offers several clearly visible benefits, including:

- **Reducing** manual labor

- **Saving** time and money in creating digital solutions

- **Lower** barrier to entry for software development

80%

of respondents believe that the low-code approach can free up developers to work on higher-level projects.

72%

of low-code developers build apps twice as fast as those using traditional development.

The global market value for low-code development platforms is estimated at **$46.4 bn** by 2026.

Low-Code Development as an Accelerator of Software Creation

Business leaders drive innovation at their companies, but they need new technologies to enable and support this innovation in a real-world environment. They need fast applications, systems that support connectivity, and platforms that bring everything together. Most older IT stacks fail to meet those modern needs, or are at least missing some critical aspects in performance.

Transform your legacy application into a platform by identifying, prioritizing and removing obstacles for digital business one by one.

(Gartner)

40-60%
More than half of CIOs spent 40-60% of their time managing legacy IT systems.

22%
With 22% of IT decision-makers unsure how to plan their migration or where to start due to application sprawl.

$9,5 bn
The size of the cloud migration services market is expected to grow to $9.5 billion by 2022.

Legacy Transformation Strategies to Consider in 2022 and Beyond

Business needs to move to a new computing model, instead of being sustained by legacy apps as it has been so far. Ultimately, such modernization can significantly contribute to cutting operational costs and giving a spur to agile future development and exploitation.

Most companies consider 3 strategies to support tech modernization:

Rip & Replace

Rewriting a legacy application is a fresh start with an entirely new system, using modern languages, methods, and infrastructure. It relies mainly on modern development methods that support significant and complex business processes. This strategy is good for edge-case or small applications, and companies that need to change their internal process, however, it includes extensive and time-consuming discovery processes, and budget overruns.

Lift & Shift

Recompiling, and in many cases modifying, application source-code so that it can run on a platform other than a mainframe. The most widely implemented approach, however, is among the longest ones. It is good for certain classes of legacy applications, non-core systems, small mainframe environments, recently developed mainframe applications, or testing environments. Requires all the source code and copybooks for all the applications to be available. Depending on the nature of the application, it may require significant source-code modification and regression testing.

Move & Improve

Improving upon an existing, working solution, rather than abandoning it entirely, for some new ground-up implementation. The most recently introduced model, having the potential to be the most all-embracing. Solves many of the problems associated with the previous methods. It's good for moving the entire applications to Linux in a much easier and less risky manner. Offers combined benefits of both above-mentioned approaches all-in-one, or can be used well in combination with both of them. Requires a binary-compatible runtime environment on the target Linux computer that enables mainframe applications to run without changes or recompilation.

Key Software Development Challenges for Business Decision-Makers to Deal with in 2022

To close the software solutions demand and tech talent supply gap, business and tech leaders now rely on the adoption of outsourcing. With the help of this remote collaboration model, it is possible to cover the increasing demand and supply shortage for software developers and other related roles.

As organizations pivoted to new digital business models and offerings, development teams faced continued pressure to quickly deliver new digital capabilities and create more dynamic and anticipatory experiences for customers than ever before. With the constantly increasing demand for future-ready software solutions, business leaders face the challenge of inability to meet the demand due to the technology gap or highly skilled talent shortage.

$1.2 m

According to the US Bureau of Labor Statistics, at least 1.2 m is a predicted shortage of US engineers in 2026.

$100,140

According to the 2021 State of Software Engineers HIRED/Vettery report, $100,140 is the average developer salary, with an increase across all roles, fueled by rising demand and supply shortage.

61%

61% of recruiters cite finding qualified developers as their biggest challenge in 2021.

Software Development Outsourcing as a Comprehensive Solution

The global software development outlook is strong as the expected 2021-2025 growth in the sector is on track, despite a 7.3% decline in 2020. According to Gartner estimates, worldwide IT outsourcing spending is growing by 5.5% in 2021, mainly due to booming demand by recovering business. In terms of growing demand for software development and tech talent scarcity, decision-makers are giving stronger priority to single-technology solutions rather than more complex products as it has been so far.

The demand for outsourcing software development is rising sharply as software application development remains the most frequently outsourced function among IT's dozen sectors. The reasons why companies are opting for outsourcing are diverse. Mainly, for companies in all industries it is challenging to find talented IT specialists who can launch successful custom software projects of high complexity and, more importantly, do it on budget.

$410.2 bn
The global IT outsourcing market is estimated to reach $410.2 bn by 2027.

5.5%
The worldwide IT outsourcing spending was growing by 5.5% in 2021.

60%
60% of companies currently outsource at least part of their application development. Software outsourcing is expected to be on a 10-year growth roll through 2025.

Top 5 Reasons to Outsource Software Development

The software development market keeps gaining momentum, amid a huge shortage on the labor market and a growing appetite for highly proficient developers. This makes a solid case for an increase in software development outsourcing.

There are top 5 reasons why leading companies outsource software development or delegate at least a part of the function to third-parties:

Cost

App developers with the sought-after skills tend to be expensive. Looking to reduce costs for such skilled roles, IT leaders mix internal resourcing with more competitively priced outsourced teams.

Demand

The number of software developers and the specific skills needed varies significantly as initiatives kick off or scale up. Using outsourced development groups helps manage fluctuating demand.

Skills Gaps

To keep up with digital transformation, companies have to go for much-needed specialized expertise temporarily available on the domestic market.

Mid-Market

Mid-size companies are driving software outsourcing demand as the global trend to implement leading-edge technologies increases.

Investment

While app development remains a big share of tech budgets, IT leaders enhance performance through selective investment in outside resources.

How to Choose an Outsourcing Partner: Comprehensive Checklist for Business Leaders
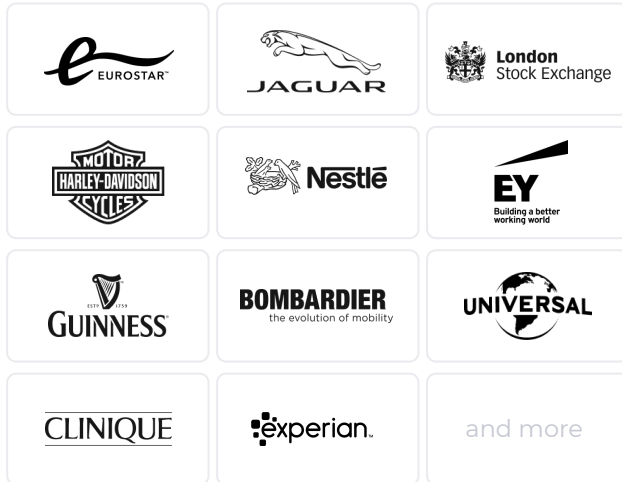
Aligning the company with the right global partner is a tedious selection process that should cover both hard and soft elements to achieve a good balance. Also, there's the quantitative side of the deal, for example, the number of developers proficient exactly in a particular technical stack, subject matter expertise, certifications, etc.

Here is a complete checklist:

- ☑ Size of the company (primary factor determining project efficiency and schedule)
- ☑ Vertical/industry experience
- ☑ Technical competencies (ideally with multiple tech certifications)
- ☑ Record (traceable history, particularly working with the US/Western partners
- ☑ Communication
- ☑ Culture of doing business
- ☑ Insurance and public liability (at a level adequate for the US and Western customers)
- ☑ HR processes (talent acquisition, vetting, and retention)

- ☑ Region-based viability (available infrastructure, political and social stability)
- ☑ Project structure
- ☑ Connections (relationships with the United States or Western countries)
- ☑ Longevity (well-established companies operating for at least 5 years)
- ☑ Time-zone flexibility
- ☑ Loyal service and pricing policies
- ☑ Business continuity and sustainability (ability to deal with unexpected economic fluctuations/crisis)
- ☑ Compliance

About Intellectsoft

Intellectsoft is a digital transformation consultancy that provides cutting-edge engineering solutions for global organizations.

Since 2007, we have completed over 560 successful projects, including custom solutions for some of the most iconic brands in the world, such as:

Our mission

is to help enterprises accelerate the adoption of new technologies, untangle complex issues that always emerge during digital evolution, and orchestrate ongoing innovation.

EUROSTAR™

JAGUAR

London Stock Exchange

HARLEY-DAVIDSON CYCLES

Nestlē

EY Building a better working world

GUINNESS

BOMBARDIER the evolution of mobility

UNIVERSAL

CLINIQUE

experian.

and more

As a software development company, we provide strategic and technical support to clients who are looking for a long-term partner to help them add value to daily operations and to do business in a more time- and cost-effective way.

Ranked among renowned private software partners for showing steady revenue **growth of 37% over the last two years,** the company focuses on future-oriented deliverables and unique implementation tactics, relentlessly working to provide smarter and **better solutions to Fortune-500 companies** and ambitious innovators.

Why Intellectsoft

Facts about Intellectsoft:

14 years of experience in delivering innovative tech solutions

Recognized by Digital.com, Inc5000, Clutch, the Manifest, ABA

A bold, honest, and dedicated team of A-players

Advantages of Digital Partnership With Intellectsoft

1. Top Tier Talent

We ramped up our engineering powerhouse around your idea to ensure the development process is seamless and transparent.

2. Right Engagement Models

With maximum flexibility, our team offers multiple collaboration options, so you choose the one that fits you the best.

3. Improved Scalability

You think it, we build it. Creating a strong, durable environment allows us to scale fast with unlimited access to top skills and technologies.

4. Reduced Costs

Proven development process, transparent delivery, and pricing models enable us to save up to 50% of R&D costs.

5. Performance Acceleration

Our performance-driven development helps us ensure faster time-to-market, add value to core businesses, and achieve significant ROI.

Appendix: Most In-Demand Tech Positions for 2022-2025

Security specialists

Companies are taking utmost care their professional activity is safe from both internal and external threats hiring personnel that can ensure the security of their infrastructure, software, and data (both on-premises and in the cloud)

Cloud architects

With the increasing number of organizations hydrating the cloud, people who are now responsible for deploying and supporting the functioning of the software in the cloud are supe to find a wide field for their skills and experience in managing and scaling cloud apps

Database administrators

Today, data is the chief asset that ultimately determines the success of any commercial endeavor. Realizing this simple truth, companies need specialists who can make sure their data is accessible to all stakeholders and software that manages databases runs smoothly

Systems analysts

IT systems of any organization are useful just as long as they can solve business problems. Systems analysts are called to provide this link between business and technologies. They should efficiently deal with any related issues and forecast their appearance

DevOps engineers

DevOps practices are robustly pushing their way into the IT realm. Their employment facilitates code writing and minimizes the number of failures, both being essential summands of a successful development process

Software developers

These are rank-and-file soldiers of IT armies that handle building websites, apps, and any other commissioned software. Their main asset is the tech stack they are proficient in (particularly, a number of programming languages)

Programmer analysts

These are bread-and-butter employees of any IT department whose responsibility lies in designing, coding, and testing computer programs of all kinds. In fact, their responsibilities are a blend of what is expected from a systems analyst and a computer programmer

Mobile app developers

Modern civilization is essentially smartphone-reliant. People increasingly use this device for work, shopping, studying, and entertainment. Realizing this, companies invest heavily into apps that provide access to the huge audience of mobile users to products and services.

Thank you

Have an idea for app development or a new tech solution?

Contact us to discuss how our team can help you deliver it fast.

Leave us a message