

# The Software Developer Shortage in the US and the Global Tech Talent Shortage in 2021

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The latest US labor statistics bring major concerns about the talent shortage: by the end of 2020, there was 1.4M unfilled CS jobs. Meanwhile, the number of graduates is only 400K a year. The US is under the risk of facing an unrealized output of \$162B if the country's software developer shortage keeps growing at the same pace. Business development and digital transformation are impossible without new talent, which intensifies the gap between tech talent supply and demand.

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## The General State of the Global Talent Shortage in 2021

As of 2021, the global talent shortage already amounts to **40M** skilled workers worldwide. By 2030, the global talent shortage is predicted to reach **85.2M** workers. Companies worldwide risk losing **\$8.4T** in revenue because of the lack of skilled talent.

Worldwide market and technology trends are the main factors affecting the rising global talent shortage. According to a recent survey, 87% of organizations are already experiencing a talent shortage or are expecting to face it within a few years.



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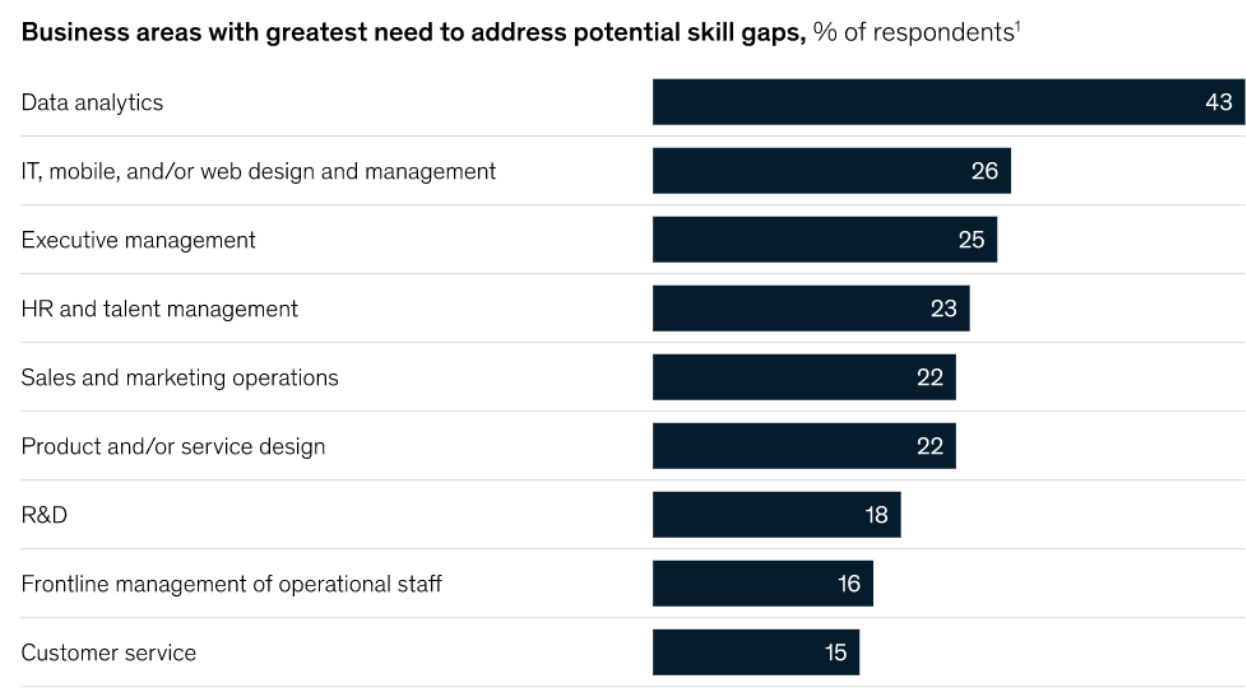
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For example, the software developer shortage in the Nordics is already a problem—Sweden alone will be lacking **70K** IT or digital-related competencies by 2022.

Meanwhile, Israel is experiencing a 15% software developer shortage, while also being among the top three fastest-developing tech startup nations.

Data analytics, IT, mobile and/or web design industries are the most likely to expect disruption from the skills gap and the IT talent shortage.



Talent shortage by industry source

Most organizations are already trying to address the talent problem. Hiring developers as contractors and freelancers has been the most widely used tactic to overcome talent needs in the past five years. Skill building achieved by a variety of reskilling programs is another way of overcoming the talent shortage.

The US Tech Talent Shortage Statistics in 2021

The US talent shortage statistics released by ManpowerGroup revealed that **69%** of US employers struggled to fill positions in 2020. Tech positions are among the top 10 hardest roles to fill.

The global crisis caused by the pandemic has affected the American tech market. It fuels digitization processes in the country, which also intensifies the tech talent gap. As machine learning technologies rapidly grow, and **92%** of organizations increase their cloud workloads, the IT talent shortage keeps increasing.

Staff turnover in the US IT industry ranks at **13.2%**, which is the highest attrition index among all industries. It's one of the major factors that set back the development of the US tech market. What's more, high turnover is costly—employers are forced to pay **50–250%** of the salary for replacement.

The Bureau of Labor Statistics indicates that by 2026, the shortage of engineers in the US will exceed **1.2M**, while the previously mentioned **545K** software developers will have left the market by that time.

The overwhelming developer shortage has resulted in the growth of software developer salaries and transformed IT into the best-compensated sector. The median computer programmer salary in the US is more than **\$100K** a year, and in some states is two times larger than the average regional pay.

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Unable to fill tech vacancies, employers shuffle off additional duties to current employees, which leads to burnout and has a negative impact on local business development. Over **30%** of respondents surveyed by Indeed admit that this issue accelerates staff turnover.

Companies are forced to sacrifice their demands in pursuit of closing the IT talent shortage gap: only **29.4%** of candidates for software architect positions and **39.6%** for DevOps job openings fully meet employers' requirements. With over **50%** of businesses hiring tech employees despite the mismatch between requirements and actual skills, the quality of products and services provided decreases.

You may think it's all about the location: it's no news that Silicon Valley explodes with new job openings daily. But that simply isn't true—4 out of 5 large tech corporations in the US are from outside Silicon Valley, which validates the nationwide shortage of engineers in the US.

## Software Development in CEE: Closing the Tech Gap for Western Europe and the USA



Why Central and Eastern European countries are a sweet spot for global companies seeking high-end tech at a sensible price.

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## Is there a demand for software engineers in US?

According to Forbes & U.S. Bureau of Labor Statistics, the demand for engineers with the right skill set continues to skyrocket and is expected to grow 22 percent from 2019 to 2029.

## Solving the Talent Shortage in the US: Weak Areas and Possible Solutions

### 1. Poor CS Education

Education is the main aspect capable of helping in solving the talent shortage. At the same time, education is also the country's main challenge—there are too few

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school graduates ready to pursue tech careers, as only 13.2% of schools offer AP

computer science courses. 77% of jobs in the next decade will require tech skills, and educators have already perceived this fact—88% of teachers believe computer sciences are inevitable for students' future success.

Currently, 2 out of 10 instructors admit their students receive no computer science training at all. The main reasons for poor CS education in primary schools include a lack of supporting educational programs and insufficient funding.

### **Solution**

Both governmental and private funding and initiatives can improve the situation. Microsoft is already committed to this goal—so far 200K teachers have been trained, the access to CS courses across 29 states has increased, and female involvement in tech has gone up.

## **2. Over-the-Top Requirements to Candidates**

Employers prefer to hire senior software engineers, but this desire most frequently leads to overstated requirements to candidates. AI, machine learning, and data science are developing rapidly, however, these technologies are only in the initial stages of their potential growth. So it's next to impossible to find professionals with high enough qualifications on the US software development job market.

### **Solution**

In order to solve the talent shortage gap, employers can expand their search radius—both on the national and international levels. You can establish cooperation with software engineers in any part of the world and feel no difference between remote and local cooperation, what with all of the communication and management tools available today. In addition, it can be helpful to introduce onboard training to ensure that newcomers have no skill deficiencies.

## **3. Limited In-Service Training**

Companies provide insufficient upgrade training, which encourages employees to find external sources for professional development. This tendency puts businesses at risk of losing tech talent not only on a company scale but in terms of the general tech workforce—dissatisfied employees often decide to change their growth area.

### **Solution**

Employers can solve the talent shortage problem by keeping up with the general tech development trends and providing employees with the most relevant training. Staff should feel they have room for professional growth within their company as well as the opportunity to build marketable skills.

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# US Tech Talent Shortage Experiences

We’ve communicated with a number of C-level executives based in the US and found that all of them face difficulties when searching for software developers. Here are some of their comments on the programming job market and the growing software developer shortage gap in the US.



**Josh Horwitz,**  
Co-Founder and COO at PasswordPing

“The job market is definitely the biggest challenge. The demand for developers has grown significantly over the past few years and competition in Boulder/Denver has become really high. Companies need to have a great package on offer to get the attention of potential candidates. 401(k), unlimited time off, full health benefits, etc. are a dime a dozen these days.



**Kevin Miller,**  
Director of Growth at Open Listings

“It’s always difficult to find skilled software engineers. They’re located in San Francisco and Los Angeles for the most part. That said, SF is the most competitive place because engineers can pick and choose between so many incredible companies.”



**Drew Dorgan,**  
globalHMA/Workhorse Development Owner

“It’s very hard to find talent that is affordable for building apps for my level of clients. I ended up hiring freelance people — this way you get someone who is really excited about your project at the beginning, starts building it, and then sort of fades away. One day I said, “Let’s look at some of these companies that help you hire IT specialists and create a remote team for you.” We hired Tetiana, and everything changed. Tetiana came into a big mess, but she straightened it all out, and put it all together.”

## Ukraine – a Thriving Tech Hub in Eastern Europe

In comparison to the US, Ukraine is currently facing an unprecedented growth of the tech workforce—there are **200K** software developers on the market, adding **36K** new tech graduates each year. The Ukrainian tech talent pool is versatile: you can either find software engineers specializing in popular technologies (Java, JavaScript, C#, PHP, etc.) or add a rarer stack (Ruby, Go, Scala, C, etc.) to your projects.



## Guide to Nearshore

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# Software Development in Eastern Europe

Software development market statistics of the tech countries — Poland, Ukraine, Romania, Czech Republic, Hungary, Bulgaria, Belarus, and Croatia.

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The programming job market in Ukraine continues to expand rapidly—the outsourcing market increased by 20% throughout 2017 and is expected to reach \$8B by 2025. In addition to the active growth, Ukraine has a great tech community that is especially vibrant in the country’s major tech hubs: Kyiv, Kharkiv, Dnipro, and Lviv.

Ukraine boasts:

- 4K tech companies
- 110+ R&D centers of international corporations
- 1K+ events for IT professionals, investors, and startups yearly

A great quantity of tech talent, a comfortable location, and a favorable business environment lure foreign company owners to start their development teams in Ukraine. Offshore cooperation requires thorough planning and prior research. The best way to ensure a smooth extension of your local team is to establish cooperation with a reliable tech partner, like Daxx.

Throughout 20+ years of market experience, Daxx has developed a well-rounded service system to enhance each function of your business and utilize market opportunities to the fullest extent. We’ll not only help you solve the issue of tech talent shortage, but will also ensure steady development of your business with the help of the following services:

- Extended team
- Launch Workshop
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- Quality Control

To find out more about cooperation with Daxx, fill out the form below, and we’ll get back to you shortly.

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