Reducing the developer skill gap through upskilling and reskilling

In this eBook, we will show you how to reduce the skill gap in your developer teams through upskilling and reskilling.

In theory teams want a learning culture, but in practice they don't actually optimize their culture for learning. A learning culture entails continual on-the-job education and leveraging tools that make learning easy. Stack Overflow for Teams is one such tool that prioritizes knowledge sharing and collaboration.

Leverage these features of Stack Overflow for Teams to enhance your educational program:

○ Strong search functionality and QA format allow for on-the-job learning and development

○ Effortless async collaboration happens between peers and across teams, allowing for mentorship and upskilling

○ Knowledge shared and discovered through simple and intuitive content organization structure, proactive alerts, and transparent information for all employees

○ Content health is maintained by many instead of one and system is gamified to encourage enrichment

○ Reduced time spent answering duplicate questions so your lead developers can work on reskilling master courses or formal mentorship

Stack Overflow for Teams brings many functions forward to enhance your learning and development program.

Introduction

The speed at which technology is changing has resulted in a skills gap in the talent market. Core skills, once gained through traditional education such as universities or certifications, are now declining or even obsolete. Finding new recruits with these rare technical skills is a challenge. Individuals with technical chops are quickly snapped up by powerful employers willing and able to pay top dollar.

"Following the great recession, economists observed a shift in the Beveridge Curve — a metric that relates job openings to unemployment. Typically, there is an inverse relationship between job openings and unemployment: More jobs almost always mean lower unemployment. But lately there has been a shift in the curve, implying that the talent economy has been less efficient at the underlying process of matching people to jobs."[1]

This ever widening talent gap, along with recruiting costs, is a key concern for CIOs and CEOs. Globally, CEO concern about upskilling has grown from 53% saying they were extremely or somewhat concerned in 2012 to 79% in 2019.[1]

Identifying future skill needs, let alone recruiting for them, is difficult and expensive. It distracts from important technical work. Instead of hiring, companies that focus on upskilling or reskilling their current workforce are doing a better job closing the skills gap.

What is their strategy? They're allowing ample time for developers to learn. They're using smart adaptive learning technologies. And lastly, they're embracing a coaching culture that propagates more learning.

There are certain technologies and tools that can serve as the foundation for pivoting into a learning-driven culture. Leveraging Stack Overflow for Teams, along with the keystone integrations with Slack or Microsoft Teams, helps to create a culture of continuous learning, upskilling and collaboration.

Read about the foundational pieces that, when put together, solve the skill gap puzzle at your organization.

Create a culture of learning

Your team won't organically upskill on its own. Your organization must actively invest in learning, and consciously create an internal learning strategy. Some ways to do that include:
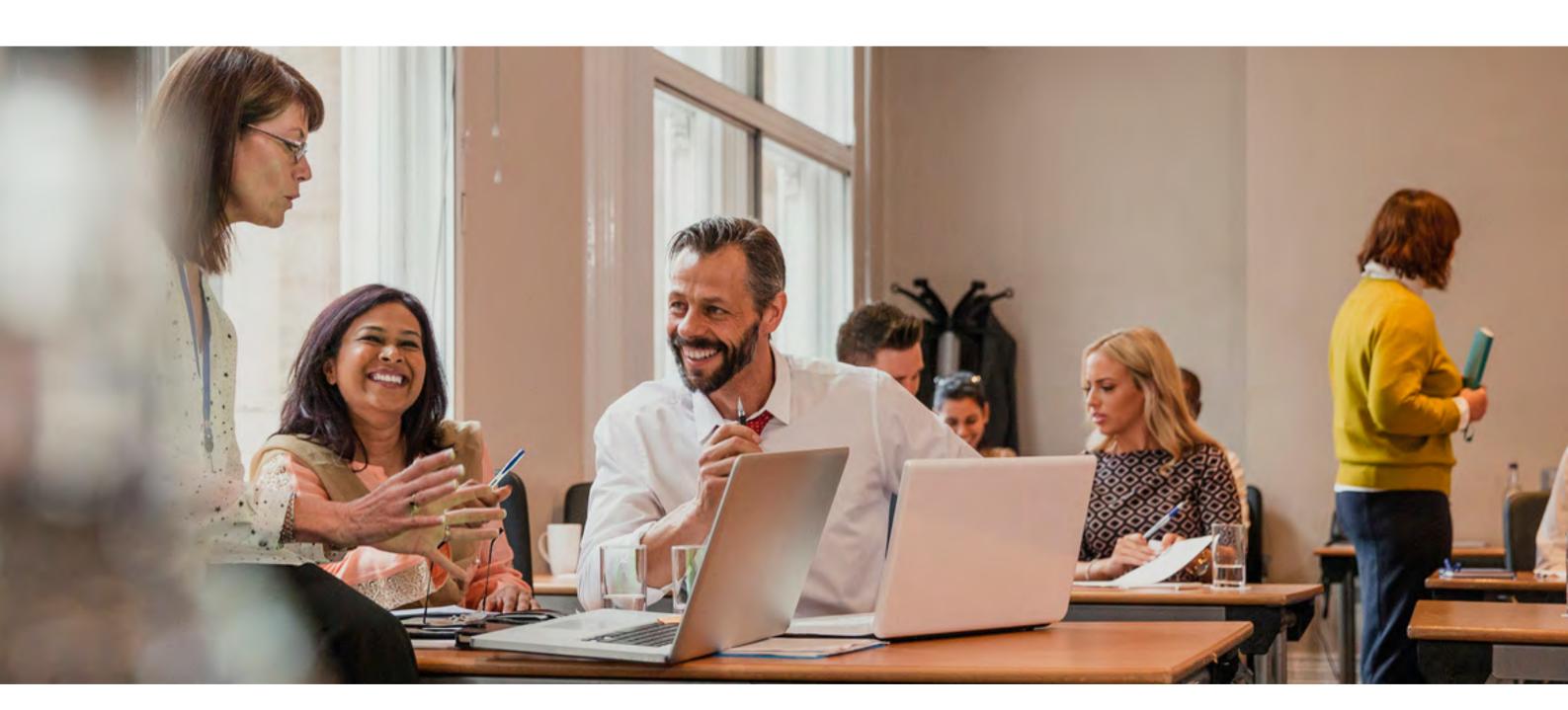
Block off time for learning

Actively invest in dedicating a significant chunk of your team's schedule to upskilling. Currently, most organizations only invest 1% of time into learning new skills and improving processes and performance—your new benchmark should be 10-20%.

Use adaptive learning technology

Educating your team shouldn't take a one-size-fits-all approach. Instead, make use of an adaptive learning solution that analyzes performance and knowledge retention in real time. Update curriculum automatically, giving weight to the areas where your team struggles most. Adaptive learning technology can help to maximize the impact of learning time, challenging your employees to tackle more difficult skills as soon as they demonstrate mastery of others.

Develop a coaching culture

Build in the time for one-on-ones where performance reviews aren't part of the conversation. Instead, bring up the programming languages and frameworks teammates are interested in learning, the upcoming projects they want to work on, and their long-term career goals. Encourage the development of learning resources and curricula to assist teams with their short- and long-term goals.

Assess skills and build a program to address the growing needs of your organization

As your organization grows, it's important to make a plan to help you develop the skills your team members should have to future-proof your organization. Here are some of the factors to consider:

Competencies

Which core competencies do you want to develop in all of your employees, such as business acumen or design thinking?

Ways of working

What methodology do you want your team members using for managing their projects? Consider options such as Agile, Kanban, DevOps, and others.

Architectures and design

Consider service-oriented architecture (SOA), Mesh app and service architecture (MASA), cloud native, data architecture, and the user experience.

Technical skills

When hiring for a given role, pay attention to skills gaps to understand where your new hires should be trained or show mastery. Focus on jobs that the World Economic Forum[2] deems as Emerging, Growing, or Core skills in the software development arena, avoiding New or Declining skills.

- **Emerging skills:** Make a plan to recruit talent or upskill your current employees. Given that availability of talent for people with emerging skills is low, it makes sense to prioritize upskilling—the only organizations that can afford this talent are market leaders.

- **Growing skills:** Skills identified as "growing" used to be optional, but are now important. Adjust your upskilling strategy to ensure that your employees are competent in these skills.

- **Core skills:** These are your essentials. When possible, new hires should already have these skills, but they should be a key part of your training and upskilling program.

As you identify the competencies, ways of working, architectures and designs, and technical skills that you need throughout your organization, create a structured game plan for applying these lessons on your team. As you hire, inventory your new employees' skill sets through skills tests, and regularly assess your entire organization's skills mastery through your L&D platform to ensure that your organization's needs are being met. When adopting new ways of working, bring in specialized coaches to help your team quickly adapt and

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[2]https://www.weforum.org/reports/the-future-of-jobs-report-2020/in-full/2-3-emerging-and-declining-skills

track their progress in implementing new strategies.

Throughout the entire process, make sure to create an open environment where employees can discuss their progress and anything they're struggling with, so that you can customize their learning opportunities accordingly.

How to be successful

You can provide all the training opportunities you want, but if your employees don't participate in them, all your planning is for naught. Learning needs to happen by design, not by chance. So what do you need to do to ensure a high adoption rate in your programs?

Create formal learning opportunities

While you can provide employees with an LMS where they can participate in bite-sized learning opportunities as it fits their schedules, it's also important to develop more formal programming. This might mean a series of regular lunch 'n learn webinars, where you encourage one employee who's mastered a particular skill to share that skill with their peers. It might be a training lab, where employees go through a series of exercises in a group learning environment with guided instruction. Real-time feedback can help employees get the hands-on guidance they need to master skills quickly.

Motivate employees to learn new skills

In addition to providing structured blocks of time for learning, it's important to incentivize these behaviors in other ways, too. For instance, if employees are up for promotion opportunities, make sure that they're aware of what skill sets they need before they can be considered as a candidate. Smaller incentives work well, too. For example, consider offering a gift card for employees who demonstrate mastery of an important new skill, and come up with opportunities to broadcast achievements in learning and skill-building to the rest of the organization.

Foster an environment of knowledge sharing and collaboration

Your team members will learn better if they're engaged in efforts as a group, rather than individually. To that point, make sure that they use your organization's knowledge-sharing platform as a central gathering spot where they can discuss learnings, problem solve, and bounce ideas off one another. By using Stack Overflow for Teams, your employees will showcase valuable insights by voting up the content that others find most helpful. They can ask questions about the learning material and instantly get answers from their peers, or search through existing content to see what others have already shared. By gaining contextual insights from others in their organization, your team members will be able to more easily put their knowledge into practice.

By facilitating learning through tools and culture, you'll see rapid adoption and employees who feel encouraged to put their new skills to work on the job.

Finding the right way to build your L&D program

There are a wide range of ways to build a development program—find a blend that balances time and cost to the best of your organization's needs, budget, and available resources.

For instance, if your organization lacks in-house knowledge, but has the budget to outsource expertise, consider bringing in executive coaches. Plan to bring the strategies of these consultants in-house so you don't have to repeatedly hire them to train new leaders.

If you have a budget and also want to dedicate a sizable amount of employee time to training, invest in degrees and certifications for your team members. Whether sponsoring participation in graduate programs or facilitating online certifications, your efforts to invest in your employees' continued education will likely pay dividends.

If your budget is lower, but you're willing to invest time to employee education, focus on developing an internal coaching program. In this type of program, employees who have desired skills will take on opportunities to guide their peers through learning opportunities, supplemented with online learning and skill-building opportunities. This is a great way to promote internal collaboration, and can be done largely through async collaboration on your knowledge-sharing platform. It's a scalable solution where a single employee can mentor or train a large number of people at once.

If your organization is low on both time and budget, there are still opportunities to promote upskilling. Consider mentoring and job shadowing, so that employees who lack certain skills can learn from peers who've developed those skills. Your knowledge-sharing platform is also a great resource in this case, enabling more experienced team members to share their knowledge with the entire organization at once.

What strategies can do the greatest good for the greatest number of teammates? Regardless of what you choose, the best mix most likely combines both people and technologies. Your team should be able to ask questions of one another, and refer back to answers that came before in an easily accessible place online.

Creating opportunities
for collaboration

What is the best way for learners to collaborate? Particularly now that so much work is done remotely, your developers need opportunities to learn from their peers and mentors, and to break out of silo-based roles to take on new perspectives. Consider these approaches:

Apprenticeship

Particularly for new grads, or employees with more limited skill sets, an apprenticeship program is a great way to help employees get their feet wet in a new career path, with training tailored to the specific demands of the job. An employer can hire a number of apprentices directly out of college or a different career path, providing them with specific projects that help to build new skills, with the goal of transitioning into full-time employment at the end of the apprenticeship.

Job rotations

In a job rotation program, employees are able to break free of team silos by getting unique, on-the-job experience in a number of roles. Employees will spend a set amount of time on one team, then move to a new team and role, where they can gain new perspectives and master new skills. At the end, they'll have a better understanding of how the organization operates overall.

Communities of practice

Communities of practice (CoP) are formal or informal groups for knowledge-sharing around particular skill sets. For instance, if you have a group of developers who are all interested in becoming more proficient in Python, you can set up a forum on your knowledge-sharing platform around this particular subject area where they can ask and answer questions, share code, and get critiques of their work. They may pair that with occasional live video or in-person meetups to dive into a specific topic in even more depth. This is a great way to help employees focus on what they're interested in and get opportunities to collaborate and team-build around those areas. Ultimately, they may be able to leverage those skills to come together on special projects for your organization.

Conclusion

New coding languages, frameworks, and methodologies are rising in prominence each year, and only the organizations with the biggest budgets can hire talent that already has these in-demand skills.

The good news is that developers are generally eager to expand their knowledge and learn new technologies on the job: In our 2020 Stack Overflow Developer Survey, 37% of respondents said that they learn a new technology at least once a year, with another 37% saying that they learn new technologies at least every few months.

When learning a new skill, 90% of developers say that when they get stuck, they visit Stack Overflow. By incorporating Stack Overflow for Teams into your organization, you can make use of the same knowledge-sharing technology to share customized, proprietary knowledge throughout the enterprise—giving your developers the chance to upskill and help your organization gain the knowledge it needs for a competitive advantage.

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