Software Developer Talent Shortage Analysis

It does not need to be proven. Society has developed a dependence on digital technology. Statista reports that adults spend an average of 4-5 hours per day *just* on their phones, excluding work-related usage [1]. From smart wristwatches to online shops, more and more parts of life in the developed world are moving to the digital realm, for convenience, cost, and connection benefits. This trend is not slowing down, in fact, the COVID-19 pandemic accelerated digital adoption. However, the economics of this in-demand resource must be considered. With the rising level of demand, supply must rise to achieve equilibrium. In the software and hardware development industry, supply consists of software developers, people. At this point, access to developers - or the lack thereof - are the bottleneck of innovation and accelerated adoption that the world is looking for. This analysis will examine the perspectives of this bottleneck from the corporation, developer, and user perspective to explore the most effective way to navigate the industry as a junior software developer.

As a business owner, managing a company properly means putting money in the right places to ensure it can be made back at a multiplied value. In the software development industry, investing in the right team members determines the future of the company. The challenge with building the best team is finding the right people. According to Ukraine-based Daxx, companies want senior level developers that can start working with little training [2]. The problem with this is that the skills in demand are for technologies that are typically in their initial stages of growth, so there most of the pioneers of the field only have a few months or years under their belt and do not consider themselves senior. In 2017, salary statistics site Paysa indicated 36% of Snap.Inc's workforce has a masters degree. Furthermore, they revealed that AirBnb, Twitter and Ubers' employee base have an average of six to ten years of experience. For a lot of companies numbers and letters on paper matter, and they create a barrier for developers fresh out of school.

The majority of software developers go through college, get a degree, and then begin looking for a job. Others bypass the college route altogether and teach themselves how to develop software. At the end of the day, most developers reach a common point… the job search. Unfortunately, while a lot of candidates prepare themselves on the software development topics, they lack the soft skills required to work as a team, express themselves, solve problems and adapt. To preserve the problem, many companies lack the resources to sustain in-service training - soft skill building among employees. As employees build more experience they pursue more training opportunities, which encourages them to find external sources for professional development [2]. This not only puts the company at risk of losing an employee, but the employee is learning topics that may not apply to the job, creating a habit of wasting time. Travis Breaux, a professor at Carnegie Mellon, sguggest, the company can "establish a dual career path for managerial and technical staff, and invest in employee education and training" [5]. This creates more trust among the team, a stronger culture of growth, and a vision for the future.

Through personal experience, I have felt the effects of being underqualified and lacking the soft skills for jobs, however, as a current software developer, I also experience the monotony

of the work environment and believe that there is a missing piece to the developer shortage problem. As human beings, have evolved for social interaction; face to face, person to person, in a 3D environment. Through our societal adoption of electronic technology, some of us have moved away from the standard human nature and spend a large part of the day looking at screens. While video games and cat videos can make screens entertaining, they do not replace the connection we feel when talking to other people. Going days on end at work not talking to anybody - with the exception of the occasional email - soft skills are not the only thing that lack… inspiration to work does as well. This lack of inspiration can force a person to quit development for good or work far less productively than they could if there was some more natural interaction in their life. The simple act of connecting with another human on a regular basis in the work envioronment may be all developers need to gain the personal incentive to continue working productively and happily.

There are more complexities associated with the developer shortage, but the experience threshold and lack of soft skills sit at the top. Both of these problems are related, since more experience often leads to more soft skills, especially when working with a team (this is not always true though). However, they can be broken down further. Lacking experience does not mean a lack of ability, and while many young developers come into the industry excited to contribute, they are shut down by bureaucratic interview process. As Forbes writer and tech CEO Tigran Sloyan writes "A coding assessment should be the first step in the hiring process no matter the role a company is hiring for" [4] . Developers need to know how to develop, hands down, but figuring out ability is an easy first step that does not require many resources or energy, and it can reveal more than a resume can. Second, a 'soft skill project' where candidates and employees work together through a given problem to reveal the habits, behaviors and characteristics of the candidates while also serving as a professional development opportunity for anyone involved. Using these two strategies will create a much more desirable interview process for both parties, while serving as a grounds for growth and collaboration, as well as talent identification, without having to allocate many resources.

Sources

[1] https://www.statista.com/statistics/1224510/time-spent-per-day-on-smartphone-us/
[2]
https://www.daxx.com/blog/development-trends/software-developer-shortage-us#solving-tech-talent-shortage-us
[3]
https://www.cnbc.com/2017/07/26/how-long-youll-need-to-go-to-school-to-work-at-top-tech-companies.html
[4]
https://www.forbes.com/sites/forbestechcouncil/2021/06/08/is-there-a-developer-shortage-yes-but-the-problem-is-more-complicated-than-it-looks/?sh=17282ab83b8e
[5]
https://dl.acm.org/doi/pdf/10.1145/3440753?casa_token=0shSjm-LO9QAAAAA%3AsvHBgxJkiI0zW-IV3k-vTygB4rqEUFsEqahPk8pullkAnblSthE7N97pFlgkKTry6XxWoOe_ylA-2w