Trends in My Industry

Daniel Avery

UMUC

Abstract

In an economy where we continue to lose jobs to automation and robots (Manyika et. al, 2017), employers continue to seek qualified software developers to fill the ever increasing demands of a society that has shifted to algorithms. The job of the software developer is to perfect those algorithms for the corporation in order to gain more profits and capture trends of increasing productivity.

According to the United States Bureau of Labor Statistics, Software developers are defined as the “creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or another device. Others develop the underlying systems that run the devices or that control networks” (United States Bureau of Labor Statistics, n.d.).

In this paper, we will discuss several top trends in the software development industry which will lead us to conclude that the Software Development industry is in a high growth stage, providing high-paying skilled jobs that are vital to our economy. Signs point to positive trends in the industry.

Keywords: software developer, programming

Top Trends in the Software Development Industry

One of the top trends of the software development industry is that demand for qualified software programmers continues to exceed supply. For the period of 2016-2026, job growth is expected to reach 24% per year versus an average growth rate of 7% for all other careers (United States Bureau of Labor Statistics, n.d.). While data is sparse, the information available suggests that wages for both entry level as well as experienced professionals are higher than average, with the average wage for an entry level Software Developer of Applications is $70,260 and raising to an average wage of $136,950 for experienced professionals (New York State Department of Labor, 2017).

Another trend that is impacting the software development industry is the position is no longer relegated to companies solely involved the business of software development. Businesses ranging from small to large can clearly see the benefit of bringing on a qualified Software Developer whether it be to develop software for internal use to increase efficiency or to create software that will ultimately be used by their external customers.

A final trend facing the software development industry is that Software as a Service (SAAS) has taken over as the model for growth. According to Cisco's Global Cloud Index White Paper, by the year 2021, Software as a Service workloads on the cloud will have a 75% share (Cisco, 2018, Figure 13). The previous model of is that you would develop a software and sell it for a fixed price with an optional yearly maintenance and service plan, and the customer would pay again when the software underwent significant changes. Now, with Software as a Service (SAAS), firms are reaping additional profits by competing on all aspects the entire pipeline of

Software Development by being engaged at all points in the process, such as development, testing, deployment, and customer support.

An Important Emerging Issue

With large growth and high wages also comes issues emerging issues that need to be looked at. One of those such issues is the issue of diversity in the workplace. The software developer industry is not one that anyone could consider diverse - in one prominent annual study, almost 93% of developers surveyed identify as male and 74% identify as white (Stackoverflow, 2018).

This certainly does not compare well with the overall demographics of the workforce as a whole, and does not seem to be getting better. Only 1.6% of those surveyed note that the diversity or the company or organization they are working for is their highest priority, while 30.4% of those surveyed identified the diversity of the company or organization as their lowest priority (Stackoverflow, 2018).

The benefits of diversity in the workplace can be understood in many different ways. First and foremost, we expect and hope that opportunities for all would be fair, and by doing so we all benefit by giving everyone an equal opportunity to participate. There are also benefits less fully understood by allowing organizational members to grow to their full potential that can pay off for the employer (Stevens, Plaut, & Sanchez-Burks, 2008). Every team member brings a different viewpoint based on their own experiences in life, and those different experiences can be vital to a well tested product that will make all of your customers satisfied.

Conclusions

All of the above leads us to draw several conclusions about the software development industry.

First is that we will continue to see record low unemployment in the industry. Schools cannot graduate students fast enough to meet the record growth in positions, leading to a shortage of available labor and driving wages up. These are high paying, high impact jobs that are extremely relevant in our modern technological period.

Additionally, while there are a smattering of examples that the workplace is becoming more diverse (see high profile leaders such as Sheryl Sandberg at Facebook as an example), the trends tell us that diversity and inclusion will continue to remain an issue.

The software development industry must continue to evolve along with changing technology to ensure the field of software development survives - we must program ethically to ensure a future that is fair to all and does not cater to a very few amount of people. Abuses of technology will continue to become more relevant in today's society as "big data" becomes more in focus, and those who possess the most information will continue to be the most powerful. Increases in processing power will allow us to compute answers to complex problems and algorithms quicker, but also lead to more interesting unanswered questions of life and death such. Suppose you are a software developer and are given the following task:

You are programming a self driving car, and it has to choose between one life over another. A car is travelling down the road at 50mph and notices a pedestrian about to run into the road. If

the car breaks to avoid the pedestrian, it will be rear ended and the driver will perish. However, if the car continues to drive and hit the pedestrian, the driver will survive but the pedestrian will perish.

These are the type of questions that will become more and more in focus the field of Software Development in the near future.

References

Manyika, J., Chui, M., Miremadi, M., Bughin, J., George, K., Willmott, P., & Dewhurst, M. (2017, January). Harnessing automation for a future that works. Retrieved from https://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works

Bureau of Labor Statistics, U.S. Department of Labor. Occupational Outlook Handbook. Retrieved from https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm

New York Department of Labor. Occupational Wages. Retrieved from https://labor.ny.gov/stats/lswage2.asp

Cisco Global Cloud Index: Forecast and Methodology, 2016–2021 White Paper. (2018, February 02). Retrieved from https://www.cisco.com/c/en/us/solutions/collateral/service-provider/global-cloud-index-gci/white-paper-c11-738085.html

Stack Overflow Developer Survey 2018. (n.d.). Retrieved from https://insights.stackoverflow.com/survey/2018/

Stevens, F. G., Plaut, V. C., & Sanchez-Burks, J. (2008). Unlocking the Benefits of Diversity. The Journal of Applied Behavioral Science, 44(1), 116-133. doi:10.1177/0021886308314460