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Executive Summary

Research Question

How are companies and other organizations addressing increasing demand for technical talent in North America, particularly for software development engineers? We are interested in global strategies, including where they are finding and placing talent outside of North America as well as mobility strategies to place international talent in North America. We are also interested in any unique or creative programs organizations are using to build/train their own developer talent.

Definitions

Technical talent in this paper is defined more broadly as individuals with software development, software engineering, cloud computing, and data science skills.

Company Overview

The cloud computing platform of this CAHRS partner company provides services ranging from data processing to storage to organizations who are looking to be more agile, lower IT costs, and scale operations. Its locations span across 69 Availability Zones within 22 geographic regions around the world[1] and the company relies heavily on technical talent, mainly software developers, to effectively deliver this service. The organization continues to grow rapidly and projects an expansion that would lead to a large headcount growth and development of new office locations globally over the next couple of years. Considering that most of the technical talent crucial for this business is sourced from outside the US, and with the current uncertainty of the US immigrations policies, there is a need to identify optimal locations for growth outside of North America and adopt strategies that would facilitate the effective sourcing and placement of talent within these locations, thereby reducing operational complexity[2].

Industry Trends for Cloud Services

Over the next 5 years, cloud computing is anticipated to continue gaining traction in a range of sectors, considering that it has transformed business operations for many industries, slashing operational costs and boosting profitability[3]. Two categories of industries have been identified as potentials for the expansion of cloud computing - **Industries facing Cybersecurity Challenges** and **Industries Strengthened by Cloud Computing**:

Industries facing Cybersecurity Challenges: As businesses are transitioning to cloud to store and manage data, security challenges are growing in prominence. In 2016, it was reported that 72% of large companies and 20% of small to mid-sized ones were targets of cyber-attacks, thereby boosting the demand for products and services that protect against these attacks[3][4][5]. It is projected that between 2016 and 2025, businesses will spend almost $2.5 billion to improve their security defenses[6]. This presents a business opportunity for the firm to provide cloud services to companies in the following industries around the world:

- Finance [3][7]
- Healthcare [3][8]
- Telecommunications[9]
- Defense
- Retail [3][10][11]
- Professional Services[12]

Industries Growing with Cloud Computing[13]: While security challenges threaten the effective use of cloud services in some industries, other industries are being strengthened by it:

- IT Consulting
- Management Consulting
- Software Publishing
- Wireless Telecommunication[14]

Talent Development Strategies by Other Companies

AT&T, Verizon, CenturyLink, and Frontier Communications have recently partnered together to form the *National Alliance for Communications, Technology, Education and Learning (NACTEL)*, which collaborates with Pace University to offer courses that fill the demand for emerging skills and future talent in the communications industry. This program speaks to the educational benefits a company can provide to its employees when it comes to development and retention[15]. The hope for this program is a better prepared workforce for the projected growth of the 5G network, and learnings will positively benefit employees as well, helping them develop their careers.

Recommendations

Countries Expanding their Cybersecurity Operations: One approach for identifying potential locations to set up new development centers is to consider industries that are increasingly investing in cloud and the locations where they are growing. In addition to the U.S. and the U.K., there are a few other countries such as France, Estonia, and Malaysia that are increasing their commitment to tightening their cybersecurity operations[16]. This company should explore opportunities within these countries to set up future development centers.

Where to Source Talent: Top talent can be sourced from all over the world, however, countries such as Mexico, Brazil, South Africa, India, China, Italy, Australia, and locations in the Middle East have been reported to be the top locations where employees are thriving[17]. Therefore, this CAHRS partner company should consider potential partnerships with top universities in these locations to develop and recruit top technical talent that can be deployed to development centers within the regions. Stronger relationships with top academic institutions that are teaching the most software developers in countries with expanding cybersecurity operations will be beneficial for the firm to find top talent that can be placed in its development centers.

Talent Development Strategies: With the gap in the software development skills in its workforce in Asia, the company should consider making an investment in developing or reskilling this workforce to meet the current demands. One way to do that is to leverage on the *Training and Certification[18]* program presently available to help the current talent to build on existing IT (software) skills and provide opportunities for functional mobility. Identify high potentials that have the cognitive ability and motivation to learn new skills and provide opportunities for development[19] and job mobility; and then promote a culture of perpetual learning. This may take more time to implement and see results, but in the long run, it costs less to develop existing talent[20].

Conclusion

In order to optimally meet the demands of its anticipated growth, it will be useful for this company to consider setting-up development centers in the countries that are expanding the use of cloud services and find top talent in these locations that can be placed in the development centers to services the industries that are making big investments in cloud services.

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References

1. Cloud Products. (2019).

2. Redacted to keep company anonymous

3. O'Connor, C., Lifschutz, M., & Hadad, J. (2017, September 8). Cybersecurity Challenges: Four Industries Affected by Cybercrime. IBISWorld: Industry Insider. Retrieved from https://www.ibisworld.com/industry-insider/analyst-insights/cybersecurity-challenges-four-industries-affected-by-cybercrime

4. Morgan, L. (2019, January 29). List of data breaches and cyber attacks in January 2019 – 1,769,185,063 records leaked. Retrieved from IT Governance: https://www.itgovernance.co.uk/blog/list-of-data-breaches-and-cyber-attacks-in-january-2019-1769185063-records-leaked

5. Juniper Research. (2019). Business Losses to Cybercrime Data Breaches to Exceed $5 trillion by 2024. Hampshire, UK: Juniper Research Ltd. Retrieved from https://www.juniperresearch.com/press/press-releases/business-losses-cybercrime-data-breaches

6. Armstrong, M. (2016, November 18). The Future Of A.I. Retrieved from Statista: https://www.statista.com/chart/6810/the-future-of-ai/

7. Murgia, M., & Megaw, N. (2019, February 25). Cyber attacks on financial services sector rise fivefold in 2018. Retrieved from Financial Times: https://www.ft.com/content/6a2d9d76-3692-11e9-bd3a-8b2a211d90d5

8. IBM Security. (2019). Cost of a Data Breach Report. Traverse City, Michigan: Ponemon Institute LLC.

9. Huber, N. (2019, October 14). A hacker's paradise? 5G and cyber security. Financial Times. Retrieved from https://www.ft.com/content/74edc076-ca6f-11e9-af46-b09e8bfe60c0

10. Trustwave. (2018). Global Security Report. Trustwave Holdings. Retrieved from https://www2.trustwave.com/rs/815-RFM-693/images/Trustwave_2018-GSR_20180329_Interactive.pdf?mkt_tok=eyJpIjoiTlRSa01HRTNNbUUyWWp

11. British Retail Consortium (BRC). (March 2019). Retail Crime Survey. BRC. Retrieved from https://brc.org.uk/media/404253/brc-annual-crime-survey-2019.pdf

12. PwC Law Firms' Survey. (2018). Risk: Information Security and Data Loss. Retrieved from https://www.pwc.co.uk/industries/business-services/law-firms/survey/risk.html

13. Lifshutz, M. (2018, November 2). Top Four Industries Strengthened by Cloud Computing M&A Activity. IBISWorld: Industry Insider. Retrieved from https://www.ibisworld.com/industry-insider/spotlight-reports/top-four-industries-strengthened-by-cloud-computing-ma-activity

14. Juniper Research. (2019). 5G: Market Summary & Key Takeaways. Hampshire, UK: Juniper Research Ltd. Retrieved from https://www.juniperresearch.com/resources/infographics/5g-market-summary-key-takeways

15. NACTEL. (2019, September 10). Communications Technology Industry Leaders Join Forces to Upskill Talent through Digital Badging. Retrieved from PR Newswire: https://www.prnewswire.com/news-releases/communications-technology-industry-leaders-join-forces-to-upskill-talent-through-digital-badging-300915139.html

16. International Telecommunication Union. (2019). Global Cybersecurity Index (GCI) 2018. Switzerland: ITU Publications. Retrieved from https://www.itu.int/en/ITU-D/Cybersecurity/Documents/draft-18-00706_Global-Cybersecurity-Index-EV5_print_2.pdf

17. Mercer. (2019). Top Global Workforce Trends. Retrieved from Mercer Web site: https://www.mercer.com/our-thinking/career/global-talent-hr-trends.html

18. Training and Certification. (2019).

19. Martin, D. (2019, October 23). Intel Partner University Launches With Personalized Training For AI, IoT. Retrieved from CRN: The Channel Company: https://www.crn.com/news/channel-programs/intel-partner-university-launches-with-personalized-training-for-ai-iot?_lrsc=cfb4e11f-c6b9-4b2a-b6ba-400244ae1771&_lrsc=e0e89255-970d-43dc-a087-f0ece10db84b

20. Volini, E., Schwartz, J., Roy, I., Hauptmann, M., Durme, Y. V., Denny, B., & Bersin, J.(2019, April 11). Accessing talent: It's more than acquisition: 2019 Global Human Capital Trends. Deloitte Insights. Retrieved from https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2019/talent-acquisition-trends-strategies.html