Online Education to Unite U.S. Citizens

(Technical Paper)

Exploration of How Technical Companies Measure Success

(STS Paper)

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Neha Kulkarni

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Technical Project Team Members

Alara Bedir

Rahi Desai

Kayla Wallet

Ryan Wells

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Signature _____ Date _____

Neha Kulkarni

Approved _____ Date _____

Michael C. Smith, Department of Engineering Systems and Environment

Approved _____ Date _____

Sean Ferguson, Department of Engineering and Society

Prospectus

Introduction

As society begins to embrace new practices and approach newfound challenges, its definition of success, too, changes and adapts to today's needs. Currently, most organizations utilize a monetary metric in order to measure success. In order to measure the well-being of a country, for example, most countries choose to consider the gross assets of a nation, known as Gross Domestic Product (GDP), which is defined as the total monetary value of all finished goods and services produced within a country's borders in a specific time period (Chappelow, 2019). However, GDP does not necessarily consider all the factors that describe the well-being of a nation, leading to discussion of building a new metric that is more comprehensive of other critical factors of a nation's well-being. Similarly, in the working world, as societal needs change, working culture must adapt, redefining what industrial success looks like. For example, study published in Harvard Business Review in 2016 found that more than three-quarters of an average employee's day is spent in communication and collaborative activities (Duhigg, 2016). These dynamic changes, both in a societal and industrial context, create the following research topic: as we continue to strive to balance productivity and fulfillment, how do we measure success and foster it in communities, whether it is on a small scale, like an industrial team, or on a larger scale, such as a nation.

Technical Research Problem: Online Education to Unite U.S. Citizens

My technical research involves working with four peers under the guidance of Professor Guerlain and COO of the Promise America Alliance Arthur Rashap to develop an educational model that focuses on how the Constitutional pillars impact individuals and communities.

Currently, the well-being of a nation is typically quantified in terms of economic gross assets, utilizing Gross Domestic Product (GDP). However, it fails to encompass other critical factors of a nation's wellbeing. Noting this issue, a previous Capstone team worked on developing a new metric that considered other factors in the overall well-being of a nation. This new metric weighted all of these diverse factors in an algorithm and outputted a final score that could be compared to other nations. This score, known as PAWS, uses the five pillars in the Preamble of the U.S. Constitution (Justice, Tranquility, Welfare, Liberty, and Defense) as broad indicators for measuring progress. For example, within justice, recidivism and hate crimes are considered as metrics (Capstone, 2018). The PAWS score has the potential to make a large impact in the way individuals, communities, and nations work to improve their wellbeing, but it currently lacks the attention and advertising it needs in order for the public to learn more about it. Therefore, our capstone team's goal is to increase awareness of the PAWS metric and empower U.S. citizens to learn more about the metric and make a positive impact on well-being in ways that the GDP metric currently cannot.

Moreover, in order to succeed in spreading the knowledge of the PAWS score, we plan to build an informative and functional platform on a presentational software known as Thinkific, that teaches users how the five Constitutional pillars can impact their personal lives and how they can incorporate aspects of these pillars into their lives to improve their wellbeing and the wellbeing of their community. We hope to implement multimedia in this website in order to make the user experience as interactive as possible, in hopes that the user will be able to consider ways in which they personally identify with the five different pillars.

We will develop a website that allows students to enroll in a 7-week course that requires users to complete a survey at the beginning of the module that learns more about the user's wellbeing, launches into teaching users about the five pillars using modules about each pillar with interactive tools, then reassesses the user's wellbeing at the conclusion of the course with a final survey. The modules will consist of presentations about the individual preambles, short quizzes, and videos from speakers in the community, such as University professors, who will provide their perspectives on how each pillar can be integrated in an individual's life. In addition to the module, the course will be built to encourage discussion through chat boards and collaborative resource pages. Once this website is built, we plan to test it on multiple users groups, such as students and faculty in the Curry School of Education, participants at the University of Virginia's Contemplative Sciences Center, and students in the Batten School of Leadership and Public Policy. These students will go through the website and provide feedback to us, which we will use to assess the success of our work and iterate to further improve the product.

We will then hope to deploy this product and showcase it with our comprehensive feedback in the format of a presentation that will be given at the Systems and Information Engineering Design Symposium (SIEDS) next May.

STS Research Problem: Exploration of How Technical Companies Measure Success

How do technology companies measure success, and how do they structure their teams in order to meet their objectives?

Background

As work culture adapts to meeting new industrial goals of productivity and success, technology companies are no longer viewed as a group of quiet engineers who work furiously in individual cubicles. Today, technology companies are encouraging their employees to work together, finding faster growth when teams form, as colleagues are able to catch mistakes quicker and discuss diverse and more creative solutions to problems. In turn, people in teams also report better results and higher job satisfaction (Duhigg, 2016). This drastic change in work culture in turn redefines success to think more critically about the balance between productivity and individual employee fulfilment. Similar to my technical thesis project, companies have begun to consider other factors in their metric of success, including factors related to happiness and satisfaction (Leong, 2017). Technical giants like Amazon and Microsoft reported revenues of approximately 232 billion and 125 billion dollars respectively this past year, showing an instrumental impact on the world and increasing the interest in researching their internal structures and workings to determine how they foster and achieve their productivity goals (Leong, 2017).

Thus, as technical companies adapt to create more robust algorithms for building successful teams, I am interested in researching some of the top technical companies in the world—Amazon, Google, Facebook, and Microsoft—to learn how these companies prioritize and devalue certain methods and practices to encourage their teams, and how they measure success. These practices could vary immensely between companies and contribute to vastly different cultures, which would be invaluable to consider, as these can create different types of employees and management. My motivation for this research is particularly high given the high volume of research done on general teams, though considerably less research on teams that are defined as technical.

Data Analysis

In order to collect information for my STS research question, I plan to use literature and academic studies regarding the evolution of teams within technical companies, articles relating to team dynamics with technical teams, government reports and documents that discuss productivity and revenue growth within the technical companies mentioned above, articles relating to current events and trends, and scholarly literature. For the purposes of my research, I plan to define a team as two or more individuals who socially interact face-to-face, share common goals, and work together in a broader system to provide a certain goal or outcome (Kozlowski & Ilgen., 2006). In gathering this data, I hope to learn more about the evolution of how technical companies define success and the objectives to achieve this. I hope to navigate my research in a way that, for each company, I assess the amount of money that companies invest in team building, organization and empowerment, consider the diversity of programs that are created, and the benefits of these programs for the organization as a whole as well as individuals. Moreover, based on prior research of how goal setting enhances team cohesion, I hope to look into how different teams approach problems and how this contributes to team performance and relationships, as well as what other factors affect these outcomes (W. Neil Widmeyer & Kimberly Ducharme, 1997). I also plan to build an understanding of a company's return on investment in building teams that perform to their standards of success and why each company defines a successful team in a certain way. The implications of successful teams are often instrumental and contribute to large savings—losses in productivity due to waste in standard processes, for example, are estimated to cost more than $3 billion year in output (Leong, 2017). Moreover, previous research has suggested that a focus on applying appropriate team strategies

has elicited better team performance and processes, contributing to better organizational performance overall (Marks,, Zaccaro,, Mathieu,, 2000).

When analyzing my findings, I plan to use this data to outline key similarities and differences in strategies technical companies utilize in a tabular format. I also plan to utilize literature from technology company management to learn how technical companies define success and note stark differences in different company methodologies, such as in how companies organize team building, which will also be organized in a table to compare easily. This data will also be extremely helpful to determine whether there are characteristics that are universally positive in making successful teams. In finding these patterns, I hope to provide research-based recommendations for ways technical teams can foster improved team interactions, given the practices of teams at large technology companies—these findings could be especially valuable given the enormous investment in this in both the industry and government. It would also be interesting to look at the negative characteristics of teams and how both companies and the government can eliminate these practices to promote better team practices and stronger work culture.

Overall Conclusion

By taking a look at how success can be measured on both a government, through PAWS scores, and an industry level, through team methodologies, I look forward to learning about the similarities and differences in how the large movers of society define success and mold the teams within their organizations to achieve the objectives they set. By doing this research, I look forward to learning about universal characteristics that I can implement in the teams that I engage in as I enter the workforce and continue to engage in projects. Additionally, given the

instrumental impact of technology companies on society, these changes could prove to have large impact on both a small and large scale.

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