Prospectus

Systems Analysis of a Pan-University Institute at The University of Virginia
(Technical Topic)

Actor Network Theory and the USC Marshall Performance Science Institute
(STS Topic)

By

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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.

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Sociotechnical Problem

The Board of Visitors, the University of Virginia's governing body, approved the 2030 Strategic Plan for the university on August 2, 2019 (Jones, 2019). Within the plan are initiatives the university will support to accomplish President Ryan's vision to "strive not simply to be great, but also to be good, recognizing that in the not-too-distant future, it will likely be impossible for a university to be truly great if it is not also good" (Ryan, 2019). Some of these initiatives include preparing students to be servant-leaders in a diverse, globally connected world, enabling faculty and students to work across traditional boundaries, and being a strong partner with and good neighbor to the Charlottesville region ("The 2030 Plan: Strategic Goals," 2019). As it stands now, UVA is a network of formal and informal cross-collaboration between centers, departments, and students. By developing technical alternatives for a pan-university institute that adheres to the university's strategic plan, we can identify ways to collaborate and share research insights across departments, engage with the community, and help students engage in meaningful learning opportunities.

For a pan-university institute to succeed, we need to acquire a better understanding of how technologies function within larger networks comprised of different kinds of actors, each of which contributes to a network's success. To explore this idea, I will examine the USC Marshall Performance Science Institute (PSI). The institute consists of key actors that help it accomplish its goal to "teach students and stakeholders about the science and application of these abilities in high stakes ventures, research the best strategies for personal striving and developing organizational values, and to build the academic and career discipline of performance science in business" (University of Southern California Marshall School of Business, 2019). The institute has successfully been developed, constructed, and equipped with strategic methods to ensure its

success in sustainable research and academic programs to accomplish the institute's mission. By better understanding the network and actors involved in the creation and sustainability of the USC Marshall Performance Science Institute, we are better able to design and serve the needs of the University of Virginia so that it improves the quality of education for students, expands the outreach of the university, and is adopted by university leadership.

To effectively build a world-class pan-university institute that adheres to the University of Virginia's strategic plan, both technological and social factors must be considered. Below I outline a technical process for creating an institute at UVA that offers unique and robust learning opportunities for students, strengthens ties within the Charlottesville community, advances the initiatives of the university's strategic plan, and shares research insights among various fields of study and stakeholders. I also use the STS framework of Actor Network Theory to analyze how the USC Marshall Performance Science Institute designers worked with human and non-human actors to lay the foundation for a sustainable Performance Science Institute.

Technical Problem

At the University of Virginia, many centers collaborate between two different schools to accomplish a specific goal. The Darden School of Business works with the Curry School of Education to improve school curriculums and help students at all age levels (UVA Darden School of Business, 2019). The Curry School works with the Athletics Department through kinesiology labs ("EASIL Doctoral Students and Research Coordinators," 2019). The Athletics Department works with the School of Engineering and Applied Science to develop new analytical methods to improve the performance of teams and their recruiting methods (Reid, 2018). These departments work together in a roundabout way, all trying to improve the performance or current state of problems around the university and beyond. Even though all of

these labs and institutes have very similar goals, it is challenging to engage in cross-school and cross-center collaboration at UVA. For example, the Engineering School works with the Athletics Department on different in-game performance models. When the McIntire School of Commerce held a panel on performance in professional sports, neither the Engineering School or Athletics Department knew about the opportunity to send representatives to learn from the panelists until an hour before the panel started (T. White, personal interview, October 21, 2019). Part of this lack of communication is due to the leadership structure of the university and how athletics, operations, and academia all operate independently and report separately to President Ryan (Rector and Visitors of the University of Virginia, 2019). This separation facilitates building networks within these areas of study, establishing guidelines for how these parts of the university are run, and maintaining the values that the people in these fields all share.

While this separation helps develop knowledge and standards within a field, it limits pan-university learning opportunities that students can partake in. By keeping everything separate, or only collaborating between two parties, it is challenging to facilitate the sharing of knowledge within the greater university environment. Breakthroughs in research or critical discussions are not shared or applied to other areas of research that could benefit from the discovery of new, key performance indicators. For example, figuring out how to predict the performance of athletes in social science research could potentially help the Curry School predict performance in educators or students. Without a sustainable network of information sharing, these insights will not be applied to their full potential and tested in areas within the university that would benefit from the research. Students who are still trying to figure out what they want to study may miss out on opportunities to learn something new. Finally, limiting collaboration can impede the university's

effort to accomplish key strategic initiatives like strengthening foundations, building a diverse faculty, and serving the community around us ("The 2030 Plan: Strategic Goals", 2019).

The goal of this technical project is to develop alternatives for a pan-university center that address the issues above by formalizing different learning opportunities for students as well as discovering ways to analyze performance in many fields of study. By taking into account key stakeholders and those not directly impacted by the institute, we hope to design it in a way that helps not only the university but also the surrounding Charlottesville community and various research networks. I will use a systems analysis in order to determine the goals of the pan-university institute, axiological components or the ethics and values that different stakeholders hold, as well as indices of performance to quantify the success of achieving the goals identified through this analysis of a pan-university center (Gibson et al., 2017).

STS Problem

At the University of Southern California (USC), there is a Performance Science Institute housed within the Marshall Business School. USC founded PSI in 2016 after conversations with Pete Carroll, the head coach for the Seattle Seahawks, who wanted to be involved in academia and more specifically the field of performance science because "there is plenty of overlap when it comes to succeeding in football or in business or in any other walk of life" ("Seahawks Coach Pete Carroll Branches Out Into Academia With Performance Science Institute At USC," 2017). After conversations with faculty at USC, the institute successfully became the home to a performance science minor and research in fields that range from sports to business to marketing to psychology. Currently, the successful creation of the Performance Science Institute is largely attributed to Pete Carroll. Using his success in the National Football League (NFL), Pete Carroll has a large platform to work from when sharing his excitement and involvement with the

institute. The website for PSI even has Pete Carroll's picture on the top banner of "The History and Creation of the PSI" page ("The History and Creation of the PSI," 2019).

While it is true that Pete Carroll is a central collaborator in developing the Performance Science Institute, other people are also considered critical in the creation and sustainability of PSI. The Provost and Senior Vice President for Academic Affairs is the second-ranking administrator at USC and is responsible for the schools and academic units within USC. Additionally, the Provost supports student resources like libraries, enrollment services, research, etc. which have also played an important role in developing the institute ("USC University Communications," n.d.). The most recent Provosts were Michael Quick, who served in this role from 2015 - 2019, and Elizabeth Garrett, who was Provost from 2010 - 2014 ("USC University Communications," n.d.). Both were responsible at some point for deciding to approve the PSI, degree programs, and research that occurs within this institute. Social media has also played a key role in the sustained interest of the Performance Science Institute. In particular, Twitter has been used to develop PSI's brand, share research articles, advertise guest speakers, etc. (USC Marshall, n.d.). Twitter is an integral, non-human factor that documents work being done within the institute and breaks down accessibility barriers to knowledge by housing information on a platform that can be accessed by anyone. While Pete Carroll played a major role in the development of the institute, other stakeholders made the effort to formalize the academic infrastructure needed for students to get credit for the classes and research they complete. By looking at the involvement of the Provost, we can better understand the financing of the institute, the accreditation of degrees, and the plans to grow this institute over the next ten years at USC. Also, by looking at the role of Twitter, we can see how this platform successfully contributes to

the sustained interest and shared knowledge through conversations that are taking place, the marketing and advertising of the institute, and the featuring of research within the institute.

I argue that it was not just Pete Carroll that contributed to the success of the creation and sustainability of the Performance Science Institute but also the involvement of the Provost and Vice President of Academic Affairs at USC and Twitter. To analyze the USC Marshall Performance Science Institute as a successful attempt at connecting students to research and opportunities to study performance in many different fields of study, I will draw on the science, technology, and society (STS) concept of Actor Network theory. Actor Network theory analyzes the dynamics among human and non-human actors associated together within a network by a network builder to accomplish a particular goal (Cressman, 2009). In particular, I will use Michel Callon's concept of translation, which describes the process of a network's formation, to examine the roles that key actors played in the success of the creation and sustainable Performance Science Institute (Callon, 1986).

Conclusion

The technical report will deliver design alternatives for a pan-university institute at the University of Virginia. These alternatives will be built around the different goals and metrics that are identified through a systems analysis after learning more about the different stakeholders involved and the axiological components that they hold. The STS research paper will use Actor Network Theory to analyze the USC Marshall Performance Science Institute and how the network and different actors within the university's network came together to build an institute centered around sustainable learning and research opportunities at the university. The results of the technical report will generate designs that support and embody the University of Virginia's strategic plan of being both a great and good university. The findings from the STS paper will

decipher the network and key actors that lead to the creation and sustainability of an institute that encourages collaboration and progress across many fields of study.

Word Count: 1789

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