CST2560
Project Management & Professional Practice

Coursework 2

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Student Name: Arusha Ramessur

Student ID Number: M00940320

Lab Tutor: Aisha Idoo

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Background

In today’s world, the significance of network security has amplified exponentially across diverse sectors, ranging from personal computer users to governmental institutions and companies. The internet's evolution has brought many security concerns due to its structural vulnerabilities. To protect their networks, businesses, and institutions have resorted to implementing stronger security tools such as firewalls, encryption mechanisms, and detection systems to detect problems. Ensuring a secure intranet has become necessary to uphold reliability, availability and sustain business continuity. The consequences of network breaches impact business operations, affect productivity, customer satisfaction, and overall profitability.

Introduction

The increasing reliance on the internet has put computer networks at risk, encouraging institutions like Middlesex University to prioritize securing their LAN. As the Project Manager entrusted with fortifying Middlesex University’s network, the focus lies on the management aspects of the project, addressing key challenges and complexities while considering stakeholders’ interest and fulfilling their expectations using the 7-S model and the MODeST framework.

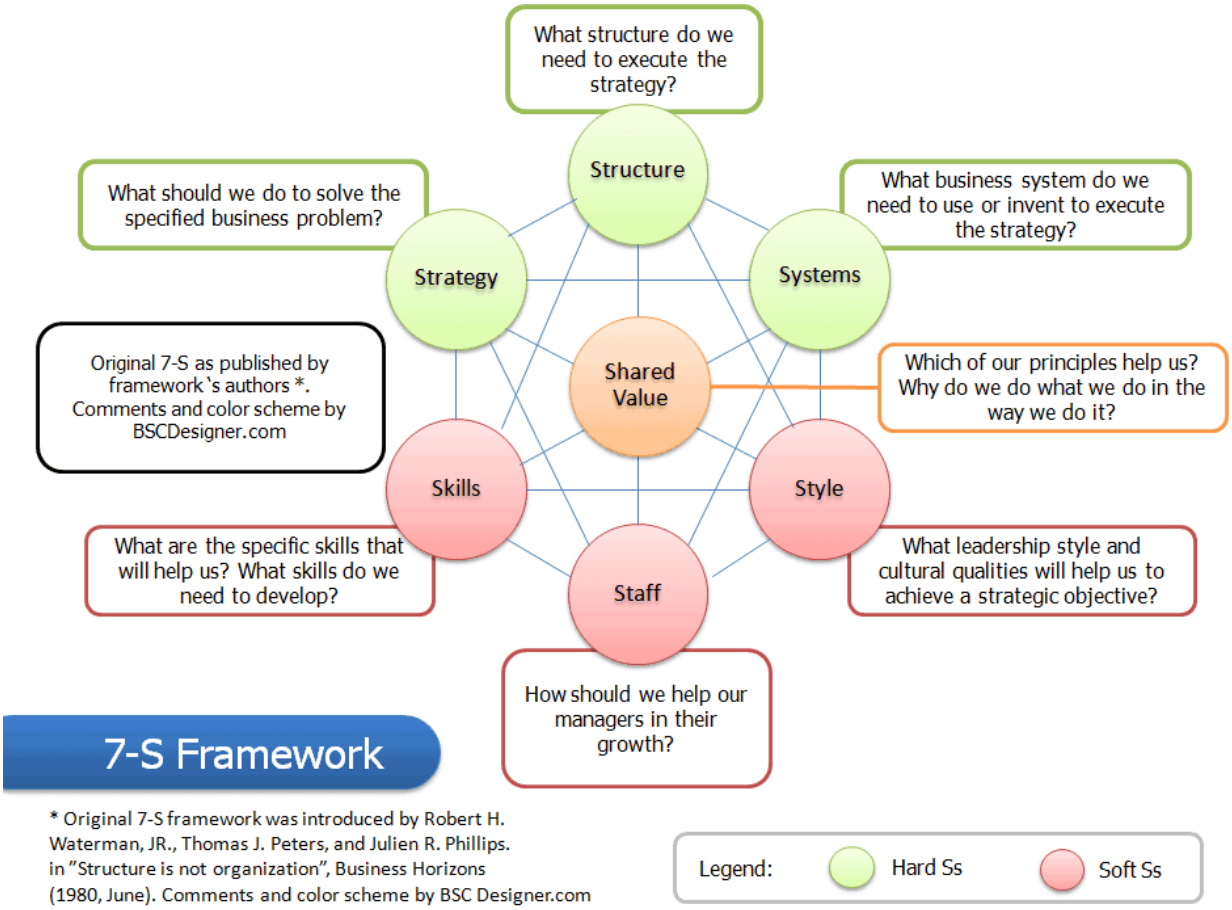
Objective

This project aims to ensure that the LAN of Middlesex University is safe and secure. As a Project Manager, the main goal is to oversee the planning and execution of a robust security plan for this network and to handle the management side of the project effectively.

The purpose is to deal with the risks and potential problems that might affect the university’s network. By doing this, we want to prevent any unauthorized access or attacks that could disrupt the smooth function of the university’s computer system. This project aims to create a protective shield around the university’s network to keep it secure from potential cyber threats and ensure that students, faculty, and staff can use it without any worries.

What is the 7-S model?

The 7-S model is a management framework developed by McKinsey & Company, a global management consulting firm. It focuses on seven internal elements within an organization that is crucial for success *(CFI, 2023)*.



(Savkín, 2023)

Strategy – It is about thinking at higher-level goals, which are like key points rather than detailed activities. Doing well begins with a logical strategy-making process, which then influences and shapes the choice mode in every part of the project *(MAYLOR, 2010)*. Hence, the strategy for securing Middlesex University's LAN is to outline a roadmap for implementing robust security measures such as installing firewalls to reduce cyberattacks.

Structure – It involves how tasks and roles are divided among people, how power and responsibility are assigned, and how different tasks and reporting lines are grouped together. It also includes the ways activities within the organization are coordinated and managed *(Kaplan & Norton, 2009)*.

For example, by clearly defining each team member's roles, responsibility, and areas of expertise related to LAN security, will help prevent overlaps, enhance efficiency, and ensures a unified approach toward securing the University's network.

System – It refers to the formal and informal ways the organization is managed. When talking about systems; it involves various procedures like how control is maintained, how performance is measured and rewarded, how plans are made, how budgets are set, how resources are distributed, and how information is handled within the organization's management *(Kaplan & Norton, 2009)*.

Therefore, Middlesex University will likely implement firewalls, encryption methods, intrusion detection systems, or other sophisticated tools as a system. Additionally, they must ensure that these systems are regularly updated and adequately maintained for ongoing network protection.

Staff – They must be chosen, hired, and supervised. How they react to how they are treated will greatly influence whether the project succeeds or not. Moreover, the manager's role in handling staffing is crucial in ensuring the project's success as it directly impacts the performance, morale, and contribution of the staff *(MAYLOR, 2010)*.

Hiring or assigning skilled personnel to the project team is necessary. Beyond expertise, fostering a culture of responsibility and commitment to network security among team members is crucial to ensure everyone understands their role in securing the LAN within the university.

Skills – It refers to the unique strengths and capabilities of the organization. It's about what the organization excels at, including its strengths in areas such as its people, management methods, procedures, systems, technology, and connection with customers *(Kaplan & Norton, 2009)*.

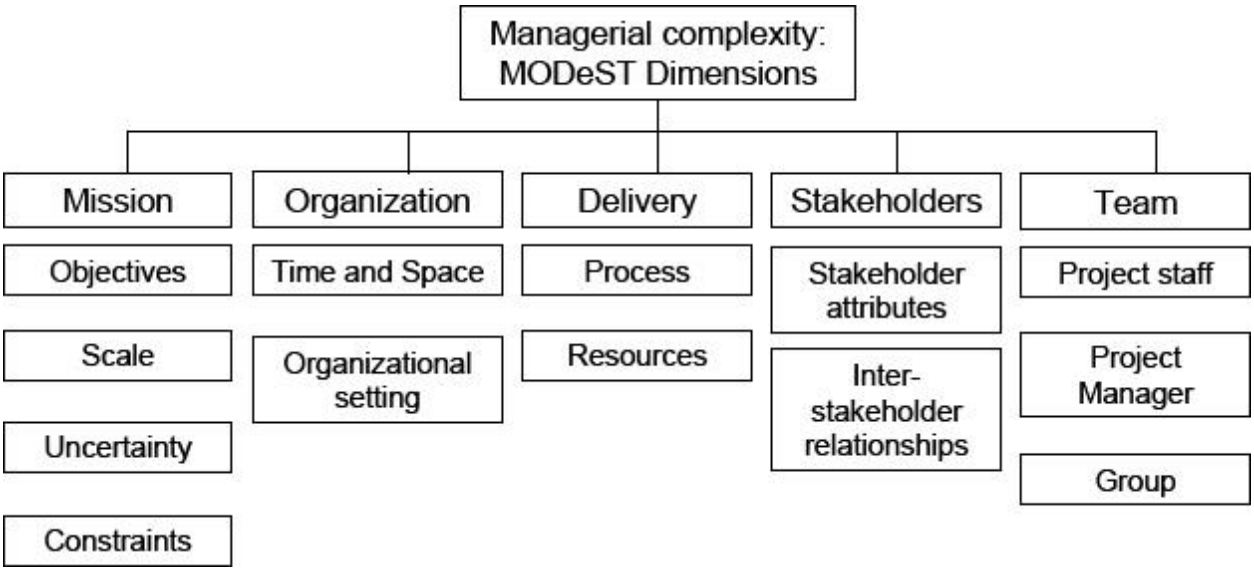
In the case of our project, it’s crucial to assess the team's skills and competencies in network security. The Project Manager needs to identify any skill gaps and provide adequate training or acquire specialized talent to address these deficiencies, ensuring the team is proficient in implementing and managing security measures effectively.

Style/Culture – Style or culture refers to the way managers lead, including how they allocate their time, what they prioritize, the kind of questions they pose to employees and the methods they use to make decisions. It also encompasses the overall culture within the organization, which includes the prevailing values, beliefs, norms, and both deliberate and subconscious actions taken by leaders. These actions might include things like job titles, dress codes, exclusive areas for executives, corporate privileges, and informal interactions between leaders and employees *(Kaplan & Norton, 2009)*.

Shared values – Shared values are the central or essential beliefs that many people in the organization hold. They act as guiding principles determining what is considered significant. These values are reflected in the vision, mission, and statements of values that give all employees a general sense of purpose*(Kaplan & Norton, 2009)*.
Aligning the project's objectives with the university's values and long-term security goals is crucial. Promoting a culture of security awareness, emphasizing the importance of confidentiality, integrity, and availability of data, and encouraging a shared commitment to network security among team members and the university community are vital components of this aspect.

What is the MODeST framework?

The MODeST model is a framework used in project management to assess and address complexities within a project. Each element in the MODeST model represents different areas where complexities might arise.



(Maylor, H., Vidgen, R., & Carver, S, 2008)

Identifying 5 examples:

Mission

Constraint – Balancing security measures with academic activities, budget, and project deadlines.

Organization

"High level of change that the project produces in the organization." (MAYLOR, 2010). – Implementing LAN security measures might bring significant changes to Middlesex University's operational structure and workflows.

Delivery

Resources – Adapting to technological advancements and selecting the most suitable security technologies for the university's network can be complex.

Stakeholders

"Large number of stakeholders with differing requirements" (MAYLOR, 2010). – Balancing the security needs of the LAN while meeting varied requirements from different stakeholders might result in conflicting demands or delays in decision-making.

Team

“Lack of appropriate training for team members” (MAYLOR, 2010). **–** Securing Middlesex University's LAN requires a team proficient in network security.

Explaining 3 of these examples:

(Eby, 2017)

Constraints – Securing Middlesex University's LAN necessitates considering broader security strategies and educational imperatives. The challenge arises in finding a delicate balance between implementing robust security measures and ensuring uninterrupted academic activities. For instance, stringent security protocols might impact accessibility to educational resources or collaboration tools, potentially disrupting the teaching and learning processes. Moreover, optimizing the utilization of budget and resources while meeting the security needs of the university can be challenging, particularly if there are competing priorities. Finally, meeting project deadlines while minimizing disruptions to the university's daily operations can be complex, as network security measures may require phased implementation. *(Baccarini, 1996)*

Resources – Adapting to technological advancements and selecting the most suitable security technologies for the university's network can be complex. Ensuring compatibility, scalability, and the ability to address evolving threats while maintaining cost-effectiveness poses technological challenges. The project manager faces the responsibility of aligning the university's network security with current technological advancements. It involves selecting and implementing appropriate security solutions capable of securing the network against evolving threats leading to technological complexity. Implementing advanced security technologies and integrating them with the existing infrastructure can be technically challenging, especially in a large educational institution like Middlesex University. *(Baccarini, 1996)*

Large number of stakeholders with differing requirements – Securing Middlesex University's LAN involves catering to the security needs of diverse stakeholders like academic departments, administrative units, and student bodies. Each group may have distinct requirements, priorities, and urgencies concerning network security. For instance, academic departments might prioritize access to specific resources, while administrative units may emphasize data protection and compliance. Simultaneously, student bodies might focus on user-friendly access without compromising security. *(Olander, 2007)*

Identify all major stakeholders:

What are stakeholders and who are they?

Stakeholders are individuals, groups, or entities that have an interest or stake in a particular project, organization, or system. They can significantly influence or be influenced by the outcomes, decisions, or activities related to that project or entity. Stakeholders can include various parties with diverse interests, roles, and levels of involvement, and they can be internal or external to an organization. *(Marques et al., 2019)*

Internal stakeholders include employees spanning executives, managers, and project-involved staff, alongside owners or shareholders with financial stakes, the Board of Directors entrusted with governance and decision-making, and various teams or departments impacted by or contributing to the project. *(Marques et al., 2019)*

External stakeholders include different groups. These groups are customers or clients who use what the organization offers; suppliers that are important for how the organization works, partners or collaborating entities working together; regulatory bodies or government agencies that are responsible for oversight and compliance, or the wider community or societal groups influenced by the organization's activities. *(Marques et al., 2019)*

Here is an example of stakeholders in a university:

Koester et al. (2006)

Student

- Power/Interest category: Keep informed.
- Justification: Students are the primary beneficiaries of the university's LAN. They use it for academic purposes such as research, assignments, and online classes. Therefore, students have a high interest in the reliability, availability, and speed of the network, but have moderate power to influence the university's decision-making process through student unions, feedback surveys, and social media campaigns.

University Board of Trustees

- Power/Interest category: Manage closely.
- Justification: The Board is responsible for managing the university's resources, policies, and operations. They have a high interest in the cost-effectiveness, scalability, and compliance of the network, and they also have a high power to allocate resources, set policies, and approve projects.

IT department

- Power/Interest category: Manage closely.
- Justification: The IT department uses the university's LAN for administration and communication. They have a high interest in the security, privacy, and accessibility of the network. They also have a high power to influence the university's decision - making process through their expertise, experience, and professional networks.

Teaching staff

- Power/Interest category: Keep informed.
- Justification: Faculty and academic staff have a high interest in a secure network for teaching and research purposes. They should be kept informed about changes but are not heavily involved in decision-making.

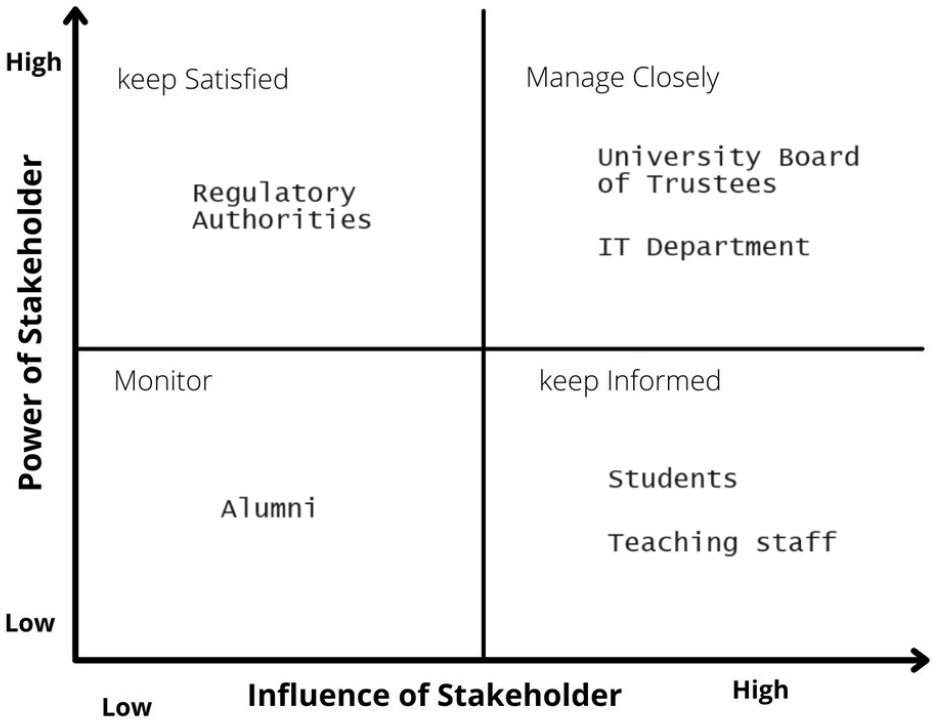
Regulatory authorities

- Power/Interest category: Keep satisfied.
- Justification: Regulators are external stakeholders who oversee the university's compliance with legal, ethical, and professional standards. They have a high interest in the data protection, privacy, and accountability of the network. They also have a high power to impose penalties, revoke licenses, and conduct audits.

Alumni

- Power/Interest category: Monitor only.
- Justification: Alumni and donors may have some interest in the university's overall success and reputation, including network security, but their power in decision-making related to LAN security would generally be low.

The Power/Interest matrix



(Nichole The Practical Consultancy Template)

Pick one of these stakeholders and write brief notes:

University Board of Trustees

Before the project: The project management needs to prepare a detailed proposal outlining the reasons, importance, and benefits of securing the university's LAN. This should include potential risks and threats and how the project aims to mitigate them. The proposal should align with the university's strategic goals, emphasizing how enhanced network security will contribute to securing sensitive data, protecting academic integrity,

and ensuring the institution's reputation. The project manager also needs to clarify and agree on the project objectives, scope, budget, schedule, and deliverables by presenting a clear budget plan, demonstrating cost-effectiveness and the value of the proposed security measures, to obtain the Board's approval and endorsement. *(Crown, 2010)*

During the project: The project manager needs to maintain consistent communication by providing regular progress reports to the Board of Trustees, highlighting challenges faced and how they were addressed. It is crucial to engage the Board in key decision-making processes, especially regarding any changes in the project scope, budget adjustments, or critical security measures. Their involvement ensures alignment with the university's vision and strategic objectives. *(Crown, 2010)*

After the project: The project manager needs to showcase the successful implementation of LAN security measures to the board by providing evidence of improved network reliability, data protection, and reduced vulnerability to cyber threats. When demonstrating the direct impact on safeguarding the university's interests will reinforce the project's success. The project manager also needs to document and share the project lessons learned and best practices with the Board and solicit their feedback and recommendations for future improvement. *(Crown, 2010)*

Conclusion

Assessing the critical aspects of network security and its significance across various sectors, it's evident that the evolution of the internet has intensified the need for robust protection measures. When managing Middlesex University's Local Area Network (LAN), evaluations using the 7-S model stress the importance of aligning and integrating strategy, structure, systems, style, staff, skills, and shared values within the project aimed at enhancing network security. Methodologies such as the MODeST model highlight moderately complex issues, including constraints, managing diverse stakeholder interests, and integrating the appropriate security technologies. The methods used in assessing and recommending actions prioritize a comprehensive view of network security, emphasizing proactive measures, stakeholder engagement, and continuous improvement.

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