

Stuart N. Howard III  
June 8, 2023

Subject: Constant Hall 10GBase-T Network Upgrade Equipment Purchase Justification - Financial ROI Analysis

Dear Vice President Kalburgi, Vijay,

We would like to provide you with our proposed financial ROI analysis for purchasing the equipment required for Constant Hall's network infrastructure upgrade. This project aims to improve network performance and support faculty members and students' increasing demand for connectivity. A thorough analysis of the current network usage has been conducted to consider the proposed upgrades and potential benefits.

1. Current Network Infrastructure:

Constant Hall is currently wired with 10Base-T, an outdated technology that limits network speed and capacity. The existing infrastructure is insufficient to meet the growing demands for connectivity and may result in slow response times and decreased productivity.

2. Proposed Equipment Purchase:

The proposed equipment purchase includes keystone jack faceplates, RJ45 keystone outlets, 48 port patch panels, workgroup switches, a core switch, a CAT6 cables, and RJ46 connectors. The total cost of the equipment is estimated as follows:

- Keystone jack faceplates:  $\$8.99 \text{ per unit} \times 38 \text{ units} = \$341.62$
- RJ45 keystone outlets:  $\$16.99 \text{ per unit} \times 38 \text{ units} = \$645.62$
- 48 port patch panels:  $\$57.99 \text{ per unit} \times 7 \text{ units} = \$405.93$
- Workgroup switches:  $\$439.60 \text{ per unit} \times 3 = \$1,318$
- Core switch:  $\$2,250.00 \text{ per unit} \times 1 \text{ unit} = \$2,250.0$
- CAT6 Cables:  $\$195.00 \text{ per unit} \times 27 \text{ units} = \$5,265.0$
- RJ45 CAT6 connectors:  $\$90.99 \text{ per unit} \times 4 = \$363.96$

Total estimated cost: \$20,000.00

3. Financial ROI Analysis:

To evaluate this project's financial return on investment (ROI), we need to consider the potential benefits it will deliver. Based on assumptions about network usage and response time, we anticipate the following benefits:

a) Improved Network Speed and Performance:

Upgrading the network infrastructure will provide higher network speeds and improved performance. This will lead to faster data transfer, reduced latency, and improved access to online resources for faculty members and students. We estimate that this improvement will save approximately four hours per day for each faculty member and 2 hours per day for each student.

b) Enhanced Productivity and User Experience:

With faster and more reliable network connectivity, faculty members will experience improved productivity, enabling them to access online resources, and research materials, and collaborate more efficiently. Similarly, students will have seamless access to educational resources, online platforms, and research materials, enhancing their learning experience.

c) Increased Capacity for Simultaneous Access:

The upgraded network infrastructure will allow for a higher number of simultaneous connections. This will accommodate the growing demand for connectivity during peak usage periods, such as when multiple classes are in session or during examination periods. We estimate increased student satisfaction and engagement by providing reliable and uninterrupted access.

4. Financial Return:

We estimate the value generated by the proposed network infrastructure upgrade to calculate the financial return on investment. We can quantify the potential benefits of \$150,000 in three years.

5. Return on Investment (ROI):

We have compared the total estimated cost of the project with the financial return generated. Assuming a timeframe of 3 years, we calculate an ROI of 1.5%

6. Conclusion and Recommendation:

As outlined in the upgrade plan, the proposed network infrastructure upgrade in Constant Hall offers significant benefits in terms of improved network speed, enhanced productivity, and increased capacity for simultaneous access. Based on the financial ROI analysis, we expect a positive return on investment within the estimated timeframe.

Therefore, I highly recommend funding the project and proceeding with the purchase of the required equipment. By upgrading the network infrastructure, we will address the current limitations and future-proof the network to support the evolving needs of faculty members and students.

Thank you for considering this proposal. Please do not hesitate to reach out if you require further information or clarification.

Sincerely,

Stuart N Howard III