

Changing For Excellence

Business Case Goal Completion Report

Information Technology – Network Optimization

Report Date

August 2016

Context

- Each campus has built and supports its own network requiring 45-60 FTEs across all sites.
- KU connects to KUMC; KUMC connects to Wichita; and the current plan is to connect Wichita to Salina.
- Because each campus has built a network to serve their local interests, the overall network is sub-optimal.
- Combining the networks and optimizing their design will allow the network management to require fewer people overall and eliminate areas of conflict between them.

Goals

For each goal answer the following: What percent is this goal complete? If the goal has been met, please describe how it was met. If the goal has not been met, how will you be completing this goal or why will it not be complete?

- Combine and manage each of the networks as a single large network.
 - 60% - Network Optimization was broken into two phases, the first of which is complete. KUMC and KUL now share IP ranges and DNS. Phase Two is currently underway, with aspects being accelerated as part of the Cross Campus Collaboration initiative. Work has been planned for a single wireless environment. Eduroam has been enabled to allow wireless access of both campuses. Further work will be dependent upon completion of aspects the SIMS project.
- Fewer IT staff required to focus on network management.
 - 0% - This is still in planning. The same number of IT staff manage the network, as the network integrations and overall size has not been reduced. There is still the same amount of effort being performed in maintaining the network in both locations.

Overall, how did goals change during Changing For Excellence and what goals were added or removed:

- Goals have not been added or removed, and the projects coming from the Cross Campus Collaboration can be enhanced by the remaining aspects of Phase Two.

Challenges

Risks surrounding optimizing network management are fairly moderate in respect to Institutional, Change Management, Project, Finance, and IT risks.

- There is some concern surrounding the number of people that may be impacted by the process of changing devices with conflicting IP addresses.
- There are multiple entities involved in the change. Coordination through consistent communication will be necessary to assure an optimal implementation.
- There is a disagreement between the KU Lawrence and Medical Center campuses in regards to the details of how to achieve the long-term goals for network optimization.

- The network optimization initiative has implications for the identity management initiative and vice versa. Membership of both implementation teams need to communicate to coordinate change on multiple fronts.

Describe if these challenges were encountered during Changing for Excellence and what unanticipated challenges occurred during the process:

- The first challenge was not encountered. Complete.
- There were only three entities involved in the conversations - KUL, KUMC and KU Wichita. Communication was excellent during the first phase, between the respective IT staffs. Communications during Phase Two faced surmountable challenges, when there was no clear direction or agreed upon direction, between the campuses.
- The third challenge was encountered. On-going. There was/is disagreement on the future solution for a single wireless environment. However, this has been discussed, and will be rectified within the Cross Campus Collaboration initiatives. Network Optimization is a central aspect of these initiatives, and include networking and data center, which are the two aspects of Phase Two.
- The fourth challenge was encountered, specifically with the single wireless initiative. KUMC believed the SIMS project must be completed prior to moving forward with a single wireless environment. The work around was provided in Eduroam. SIMS continues.

Opportunities

Anticipated results of approximately \$0.2–0.4M in benefits for the University can be realized once network optimization is fully implemented, through:

- Seamless collaboration between students, faculty, and staff across all campuses
- Long-term vision for network architecture and management that will realize savings opportunities.

Describe if these opportunities occurred during Changing for Excellence and what unanticipated opportunities were realized during the process:

- The first opportunity has not been fully realized. IP and DNS was completed, however there are still many issues which still exist. We do have a single wireless environment in eduroam. The remaining issues have been identified with the Cross Campus Collaboration initiative and will be solved in the coming months/years.
- The second opportunity has not been fully realized. We have started working on projects that revolve around a long-term vision, for example, opening 10Gb connections between campuses, and planning higher speed and more secure connections between campuses. We have begun some initial discussions on data center monitoring.

Changing For Excellence Summary

Summarize the process to date and lessons learned. Provide specific future direction, next steps, and strategy for this business case. Indicate what metrics will be used to measure success:

The first phase of Network Optimization was driven and contained within the Networking units of the respective IT organizations. Phase Two branched to include additional IT units on both sides. The

cohesive project team from Phase One needed time to catch up on operational priorities after Phase One, and was hard pressed to immediately jump into Phase Two. The inclusion of other units also complicated the dynamics that were built in the first phase.

As indicated, many, if not all of the issues, use cases and goals in the Network Optimization project, will be solved by projects stemming from the Cross Campus Collaboration initiatives.

Post-Changing For Excellence Updates (Completed Projects Only)

The CFE business cases, while complete for routine reporting purposes, are never considered done as they are constantly being monitored and grown. With this in mind, please provide your detailed strategies on the continued growth and development of these business cases. Information about how units continue to improve and innovate from these business cases should be addressed. Details could include information about refining processes, new projects, measuring success, metrics being reviewed, and other methods for understanding improvements.

Initial processes developed during the Network Optimization initiative for IP ranges, DNS and firewall rules, continue to be followed. Additionally, KU IT at the Lawrence campus has successfully implemented a pilot environment for a Science DMZ network (from the Cross Campus Collaboration initiative) to aid researchers on the Lawrence campus. This project is set to continue and expand in scope as information is gathered from the pilot. Initial test results performed during a data transfer of CRESIS (Center for Remote Sensing of Ice Sheets) data showed transfer rates twice as fast as pre-DMZ rates (3-3.5 Gbps improved to 6-7 Gbps). As part of the DMZ project, KU Research and KU Information Technology collaborated on a federal grant proposal which would allow for expansion of the Science DMZ past the pilot phase. The proposal was submitted August 23, 2016.

There are currently no initiatives or discussions ongoing for Network Optimization or Cross Campus Collaboration (aside from the Science DMZ), due to the challenges encountered during the initiative. A comprehensive report was developed from the Cross Campus Collaboration efforts, and submitted to University executive leadership in March 2015 for review.