Project Title:
Experimental Telephony Integration Laboratory Experiences and Curricula

Applicant(s):

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Project Summary

The primary objectives are to create a laboratory environment in which student activities and research can be housed, the creation of the course materials and building of lab experiences. The overall goal is to graduate students that fill a large gap in industry – professionals that have the ability to handle any and all voice communication systems, interconnect them and migrate from the old to the new. In addition, we will establish a base from which research projects can flourish.

Following these activities will be an evaluation of program results, review by affected industries and dissemination of the results to the academic community. Finally, over the last couple of years we have begun working with other educational institutions on curriculum. It is my hope that this project can also be leveraged to train other faculty members at partner schools.

Final Report

In preparing this report, I will address each one of the areas outlined in the proposal and use the same headings as those seen in the RFP. As the summary indicates, the primary objective was to create a lab and course materials. In short, the project has been extremely successful in that regard. The lab, named the Telephony Integration Lab, is housed in the networking department within the Golisano College. To date, we have received approximately $600,000 in donations and construction on the lab itself was completed in the winter quarter 20062. Additional modifications continue to be made as we run through iterations of the courses.

Two courses have been written on the topics described in the RFP and both have been run. The first course is called Telephony Integration has actually run twice (20062, 20071) and the second course called Emerging Applications is about to run for its’ second time in 20072. As of right now, students have had a chance to evaluate the course as have the instructors. Appropriate modifications to the coursework will be made as needed.

Targeted learners or population

Due to the advanced nature of the coursework, the primary audience will be students matriculated in the Bachelors of Science in Applied Networking and Systems Administration degree program. This has proven to be true with one or two students from elsewhere in the Golisano College. We expect this to change slightly as there is an increasing demand for students possessing knowledge of real time data and VoIP systems.
The number of students who will be affected.

The project plan was to develop a pair of courses with the possibility of a third. The section size is typically 36 and the courses would be offered a maximum of twice per year initially, thus allowing 72 students to complete the coursework every year. With the advent of a third course, this number would remain the same. This does not include independent studies and research. As I have been planning the work to be done, several requests for both have been made. I would estimate that this would add another 8-10 students annually.

During its’ initial run, we offered single sections of the two courses mentioned and the section size was lower than the maximum possible. This was largely due to the lab location having a maximum seating capacity of 26. Additionally, many students elected to pursue other electives rather than following the first course to the second.

An interesting problem arose with the naming of the courses. Many students informed me that one of the reasons that they did not take the second course was because they had no idea that was related to the first, and in fact its’ name was somewhat misleading. This shall be rectified this year.

Anticipated impact on teaching and/or learning.

From the RFP

“The possibilities in a course of study like this are truly exciting for several reasons and to students, it is the opportunity to prepare for an exciting trend before it is forced upon them. Specifically students will work with equipment they have not even seen before, deal with issues only read about and develop the skills to become instantly successful and in demand. They will be the integrators and possess the knowledge demanded by companies now and for the next several years. These statements are made based on the feedback received during a VoIP summit I organized at RIT last year.”

This statement has proven to be truer than I had hoped as vendors, employers and graduating students have all raved about course content. In addition we have had quite a bit of input regarding lab activities and course topics. The industry appears to be in a faster adoption cycle that we originally anticipated and so interest in the course also appears to be on the increase. We have had several projects run in the lab though we have not fully realized all of the research potential yet.

How will your project will impact student success?

From the RFP

“Simply stated, we will be adding a component to our program that is available nowhere else at this scale. The students will not only have coursework in the top networking program in the country, but now will have access to systems and study that challenge them in an incredibly important and cutting edge field. Entire careers can easily be built (in fact they already are) around this expertise. This makes the program both a retainer and an attractor. Students will be enthusiastic about staying with the program, but also have tremendous opportunities when they graduate because they will understand the wiring on up to the applications and deployment.”
At this early stage we cannot evaluate the project ability to attract or retain students however I think it is clear that this is a vital addition to our program and the toolbox of our graduates. The upshot is that our graduates are obtaining crucial skills and maintaining their leading positions in industry.

**How you will measure the impact, how you will report your findings, and what you will share about your project in a faculty forum.**

From the RFP

“I will establish a list of outcomes for the program. These will be targeted in both lecture and lab settings. Once these have been established, the best measurement mechanism will be chosen. Typically these are in the form of a practical test such as a lab or hands on exam, a series of questions on a written exam or an assignment. Mechanisms will be chosen for all desired outcomes. Benchmark values will be assigned for each so that we can attempt to evaluate program and individual student success.

A final part of the evaluation will be industry feedback and peer review. To this end I have begun to establish a group of industry representatives that will provide input into the process. As I have done previously, I will be submitting the program and results for peer review at conferences such as SIGITE.”

A list of outcomes has been created for each of the courses in the project. These are also available to the students so that all have a clear understanding of the course expectations. Both courses are evaluated in the lecture and lab portions and this is used as direct feedback into the curriculum.

Industry and peer review has also been established. Industry participation has been outlined above. For peer review I have written a paper entitled “CURRICULAR RESPONSE TO THE REAL TIME DATA AND VoIP TIDAL WAVE” and have presented this paper at CCSCNE is the spring of this year. Additionally, the capabilities of the lab, its’ coursework and my students were showcased at the third annual RIT VoIP conference in May of this year. This conference is attended by educational institutions, vendors and service providers. All of the feedback received at the conference was positive and in one case, resulted in the creation of a custom training program for a local business.

**Conclusion**

I believe that the project is an unqualified success. This would be true even if we only considered the completion of the lab and the coursework. However, this has certainly not been the whole story. As a result of the feedback received, tours given and increasing student interest in the lab and coursework we can see that the outcomes are everything we hoped for. I will continue the feedback loop between RIT, industry and peers within academia to ensure that we maintain a leading position. What is also clear is that we are, once again, at the forefront of education in this sector when compared to peers in higher education. Graduates continue to provide every indication that this was the right direction for the program and that more is needed.