

# *The Development of Q-Surve: A Model for End of Course Faculty Assessment*

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In the fall of 2000, Troy State University Montgomery was changing from a quarter to a semester system. The number and effect of the changes in operations resulting from this move was not immediately realized. As the semester unfolded it became obvious that major adjustments had to be made in order to facilitate the changes being brought about by the move from the quarter system. This paper reviews how a technology solution was developed to facilitate the changing requirements with regard to student end of course critiques. It also suggests a model for the development and creation of a technological solution to a problem.

## Troy University

Troy State University Montgomery's primary mission is to serve the higher education needs of the nontraditional student. To best serve its nontraditional students, courses are offered almost exclusively at night, with a few weekend course offerings, and a fast track Master of Science in Management Degree offered completely on week ends.

In 1999, Troy State University Montgomery moved from a quarter system to a semester system of scheduling. This included two eight-week terms within a 16 week semester. This meant instead of having to offer and staff three cycles of courses a year using the semester system, the University would now have to offer and staff six cycles of courses per year. As the university adjusted to the semester system with its two eight week terms, the university experienced a 23% growth in enrollment, from approximately 3,300 students to approximately 4,300 students. This meant additional sections of courses would be necessary.

Along with increased offerings came increases of all of the activities in support of the new semester format. Instead of three registrations a year, the University was now obligated to offer 6 registrations a year. One of the activities required by university policy was student evaluation of faculty at the end of a course. The instrument used for this process was referred to as the Student End of Course Evaluation.

As Troy State University Montgomery expanded the use of adjunct faculty to meet the 23% increase in student enrollment and the number of courses required to staff the growth grew, the system of keeping up with the required Student End of Course Evaluations became unmanageable.

## The Problem

University policy required that faculty be evaluated by students through completion of a Student End of Course Evaluation, with the summary results being shared with the faculty member, and used by the department chair, the dean, and the faculty member for the completion of a yearly evaluation. Results of the Student End of Course Evaluations were then used by the instructor to make any necessary adjustments to instruction in following semesters. Changing from a quarter system of scheduling to a semester system of scheduling, along with the additional 23% increase in enrollment, presented a problem. How does the university physically process the thousands of additional Student End of Course Evaluations and return them in time to be used by faculty for the following semester? Administrators began to search for solutions.

A review of the Student End of Course Evaluation process led to an obvious conclusion. The process was cumbersome, repetitive, labor intensive, and for all practical purposes, ineffective. A new process was needed. A review of the problem determined that whatever solution was identified must possess the following attributes:

1. Easily Accessible
2. Protect the Confidentiality of Students
3. Efficient Process
4. Have Summarizing Capability
5. Easily Adaptable
6. Able to Archive Information

A thorough review of the problem led administrators to search for solutions that utilize technology and innovation. Their experience led them to believe that each of these attributes could be addressed by properly applying a technological solution. However, integrating the different types of technology successfully would require the assistance of a technology specialist.

Detailed information had to be gathered to permit correct engineering of a solution that integrates the technology successfully. Answers to the following questions were sought from the Technology Department before the technological solutions could be developed:

1. How many expected critiques would be submitted each semester?
2. How should the results be presented / reported?
3. What hardware and software resources were available in support of each solution?

It was determined that approximately 400,000 critiques could be expected each year. The exact reporting format was not yet determined, but would include basic statistical processing with additional reporting to be customized by departments. The survey instrument itself was expected to undergo significant change after solution development. Data had to be exportable to other software packages. The specific format of reports was still unknown. The following resources were in place: Microsoft Windows 2000 webserver, Microsoft SQL database server, Cold Fusion application server, an off-the-shelf webserver (similar to a PC), separate firewall levels, on-site DNS servers, and other miscellaneous software and hardware.

#### Q-Surve V. 1.0

The software solution was named Q-Surve. As the solution was developed, it was realized that the system could also be used for general surveys and academic research. An approval process was added to prevent unauthorized survey modification, and unique identifiers were added to prevent duplication of responses.

#### Q-Surve Attributes

In summary, Q-Surve possessed the following attributes.

1. Versatility and dependability, using off-the-shelf software and hardware.
2. Web-based interfaces that allow global implementation.
3. Administration is intuitive and requires minimal instruction.
4. Supports very large data sets.
5. Easily customizable by most web developers.
6. Modularity allows firewalls (DMZ's) to restrict access to key functions.
7. An off-line viewer provides customizable reporting using Microsoft Access.

## A Model for Developing Technological Solutions

A seven step model is suggested for the development and creation of a technological solution to a problem. The model is one that assists in determining the feasibility of a technological solution and provides a framework for development of versatile, efficient and effective technological solutions.

### *Step 1: Identify the Problem*

Over a period of several weeks, describe, in written detail, the specifics of the problem. What attributes cause the situation to be a problem? Writing down the description encourages critical refinement of the description over the thinking period of succinctly describing the problem. You will find that insights arise as you refer back to your earlier written description. Without a written description from which to work, the logic process loses continuity.

### *Step 2: Identify Solution Attributes*

Using your description of the problem over a period of several weeks, ask yourself, "What attributes would a solution to the problem possess?"

### *Step 3: Discuss the Problem and Attributes with a Technologist.*

Do not expect a solution from one meeting. Allow technologists time to understand and think about what you have discussed. They will need to understand the problem well enough to respond to your request for assistance. At this point it may be helpful to draw a schematic of the process that requires a solution. If the technologists believe it is feasible to use technology to solve the problem, ask for a visual schematic of the solution for your next meeting.

### *Step 4: Review the Proposed Solution*

Review the solutions proposed by the technologists to determine if additional refinement is necessary. Think in terms of making each step of the solution flexible so that it can easily be altered.

### *Step 5: Create the Technological Solution*

Facilitate the technologists work as they apply their skill and knowledge in creating the technological solutions. Truly efficient and effective technological solutions require a team composed of experts in the use of technology, and experts concerning the problem being solved.

### *Step 6: Pilot the Technological Solution*

Pilot the technological solution with a small group in the "real environment" in which the solution will be used. This provides additional assurance that the technological solution, as well as its implementation, is effective and working as planned prior to making it available to the masses. Make adjustments to the solution as they become obvious from the pilot study.

### *Step 7: Prepare for Continuous Solution Improvement*

As happens with all technological solutions, the solution will go through phases requiring improvements, adjustments, or enhancements that extend the life of the technology. Eventually, because of changes in the environment in which the technology operates, the technological solution will evolve into a problem requiring replacement solutions and the process of identifying a solution to a problem will repeat itself.

## Conclusion

Effective technological solutions to problems can arise from careful planning by bringing a team of experts together to collaborate, think through the problem, and develop expected outcomes that lead the researchers to the identification of technological solutions to the problem. The seven step method described can provide the structure to assist others in the application of technology to solve higher education problems.