Chapter 5

Measuring ROI in an eLearning Sales Program

United Petroleum International

by Patrick Whalen

This case addresses measuring the effectiveness and return on investment of an e-learning solution in an international sales environment. This can be especially challenging when management wants the program to pay for itself in the first year. This case demonstrates that, with a proper needs assessment and support from the organization, a well-designed e-learning program can influence business measures significantly. The program contribution to sales and other business measures determined by using one or more methods to isolate the effects of the program. The $500,000 projected price tag of the training was a key factor in management's decision to support an impact study to determine the return on investment.

BACKGROUND

United Petroleum International (UPI) is an international organization headquartered in the southwestern United States. UPI operates several refineries and engages in the sales and service of petroleum products worldwide. UPI has approximately 17,500 employees. International sales of petroleum products have plummeted during the last three quarters, and the outlook shows this trend will continue.

Increased competition abroad and a diminishing quality of sales relationships with customers/prospects were determined to be the major reasons for the lack of performance. The results from quarterly customer

This case was prepared to serve as a basis for discussion rather than to illustrate either effective or ineffective administrative and management practices. The authors, dates, places, names and organizations may have been disguised at the request of the author or organization.

satisfaction surveys revealed specific areas of low performance. The executive vice president (EVP) of international sales asked for an assessment of the performance improvement needs of the UPI International Sales Organization (ISO). International Sales has 117 sales engineers and eight sales managers. They are supported by 50 administrative employees who maintain the customer/prospect database, develop sales quotes for the sales engineers, maintain pricing and inventory lists, and provide HR services.

A senior representative from corporate HR and two of UPI's internal consultants teamed with an external consultant to implement the Performance Assessment and Analysis Process to identify problems, opportunities, and solutions in ISO. The report provided to the EVP identified overall findings, performance gaps, and recommended solutions. At the end of the presentation, the EVP agreed to fund an intense improvement effort, including sales training and restructuring of the ISO incentive pay plan, which was no longer competitive in the changing markets. Funding was also made available for the consultant to design and implement a comprehensive evaluation system to determine business impact and return on investment. The EVP was particularly interested in knowing the ROI for the program. A business objective was established to improve three business measures. Measures to be tracked were identified as sales, monthly closing ratios, and customer satisfaction. Because measurement is an inherent component of the process, the methods and timing were designed and put into place. Baseline data were collected from UPI's performance records.

Designing and Implementing the Solutions

The HR department worked with the design team to design and implement a more appropriate and competitive incentive plan. This new incentive plan was designed after a review of several models and an analysis of application to UPI's markets. The plan was approved and scheduled for implementation in June.

The second solution, addressing the skill and knowledge needs within the sales force, was more difficult to design and implement. Client workload, time constraints, and the scattered locations of the sales engineers were impediments to implementing traditional instructor-led learning. Electronic learning methods were considered a viable alternative. A plus for this delivery method at ISO was that all sales engineers had online capabilities

on their laptop computers. Another plus was that the flexibility of the electronic delivery method allowed it to be available at any time of the day. This flexibility is attractive to participants who are compensated principally through incentive pay and who desire to spend their available time making customer contacts. The decision was made that the 117 sales engineers and eight sales managers would receive an electronically delivered interactive program to improve their skills and effectively achieve the business objectives. During the performance analysis, it was discovered that the corporate HR group had identified sales competencies from a previous project and had already begun developing a curriculum. Much of this in-work product served as an important input for the new initiative and greatly assisted the on-time completion of the project.

The design called for a more focused e-learning effort, paying specific attention to the sales relationships engaged by sales engineers and allowing for significant practice of the required skills. The program had to present numerous job scenarios and challenges currently being encountered in the marketplace. The EVP of International Sales assigned the project to the manager of sales training, who subsequently established a project team to provide the coordination, design, and development of this project.

Several modules were developed with the support of corporate professionals, including technical writers, learning technology specialists, graphic designers, information technology specialists, and consultants. The team consisted of five full-time employees and four external consultants. Given the short timeframe for completion (management allowed a few months to design and implement the program), work began immediately to develop focused e-learning programs based on the desired business impact (the business objectives), job performance competencies, and field sales encounters. Several members of the design team were concerned that traditional face-to-face learning methods could not be replaced by an interactive e-learning program. The learning technology specialists addressed these concerns, and field testing established the design as a success in achieving learning goals. The e-learning program that was developed for the sales engineers became known affectionately as the TLC program, the Technology Learning Competency program. After design completion, it was implemented in June and July, shortly after the new incentive plan was implemented.

The Technology Learning Competency (TLC) Program

The TLC program was an interactive, self-paced learning process designed to assess current skill level and needs of the sales engineer. Each module was designed to build on a specific set of UPI sales skills (that is, client partnerships, product pricing and contracting, selling more profitable products, uncovering objections, handling objections, defining product features as unique benefits for the customer, expanding existing contracts, handling dissatisfied customers, building community awareness of UPI, and UPI product awareness/knowledge).

The TLC program was designed to allow the participant to respond to various sales relationship scenarios and to determine the appropriate decision to move closer to a sale. Each decision made by the engineer activated another scenario, which allowed additional choices or decisions to be made. The program continued on a predetermined path initiated by the engineer until a string of choices confirmed the responses as appropriate or until the decision was redirected. Video of a subject matter expert provided analysis of decision choices and helpful suggestions. This took maximum advantage of learning opportunities presented when a participant worked through the program. The engineer experienced real-world issues and situations, had the help of an expert, and was able to learn from mistakes in a nonthreatening manner.

A pretest at the beginning of each module was used to determine the skill areas that needed improvement and to load the appropriate learning modules. All the 117 sales engineers were pretested to establish a baseline. The program then linked participants to recommended modules that addressed their skill gaps. Each engineer was allowed a two-month window to complete the required e-learning, either during or after hours as his schedule allowed. So that they could be more effective coaches, the eight managers completed all modules plus a coaching module.

The TLC program contained a programmed mechanism that captured the results from the various decision paths chosen by the participant. After each learning module, an individual report was generated, which highlighted the learning achievement and the decisions made by the engineer. This report was provided to each participant and his manager for discussion in the follow-up coaching session. This provided additional learning opportunities

and a means for recognition and feedback. Sales engineers were asked to schedule the follow-up planning and coaching meeting with their managers to occur within two weeks of their TLC program implementation.

MEASUREMENT METHODS AND DATA ANALYSIS

Measures to evaluate the effectiveness of a program can be designed and tracked through five distinct levels, as shown in Table 5-1. In addition to the five levels of data illustrated in this table, intangible benefits are reported for important outcomes that cannot be converted to monetary values.

The executive vice president of international sales requested that the return on investment (Level 5) be calculated for this program because of the high cost and potential business impact of the TLC program. Therefore, it became necessary to analyze data at the five levels, plus any intangible benefits.

Table 5-1. Five Levels of Data

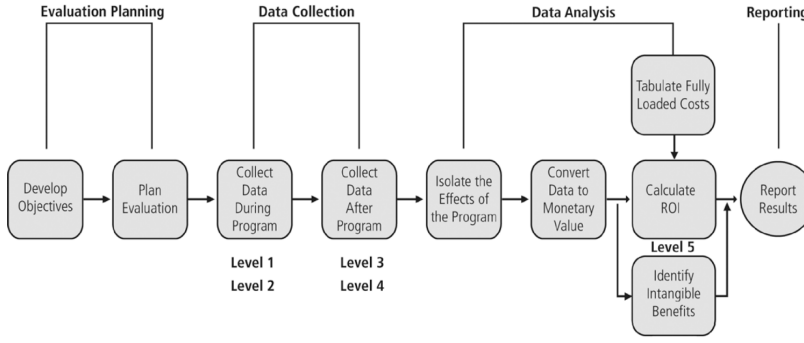
Level and Type of Measure	Measurement Focus
Level 1. Reaction/Planned Action	Measures participant satisfaction and captures planned actions
Level 2. Learning	Measures changes in knowledge, skills, and attitudes
Level 3. Application	Measures changes in on-the-job behavior
Level 4. Business Impact	Measures changes in business impact variables
Level 5. Return on Investment	Compares program benefits with the costs

ROI Model and Process

Executive management expressed concern that the process used to evaluate TLC was a credible process. Figure 5-1 explains the process used to address this concern. This process has been applied in virtually every industry and in numerous international settings to evaluate training programs, HR programs, technology initiatives, and performance improvement programs. The process flows sequentially from step to step until the ROI is developed. The impact study captures both Level 3 (application) and Level 4 (business impact) data. The ROI (Level 5) is developed from Level 4 data. Improvements

that cannot be converted to monetary values are reported as intangible benefits. A conservative approach is used to ensure that only benefits that can be legitimately attributed to the program are captured.

Figure 5-1. ROI Methodology ™ Process Model



The Data Collection Plan and ROI Analysis Plan

After the business measures were determined and the framework for the TLC training program was known, the data collection plan focusing on Level 3 (application) and Level 4 (business impact) measures was developed. The Level 3 measures were behavior changes and frequency of application linked to the TLC program objectives. After exploring performance data availability in the ISO unit, the quality of the specific data, and the perceived linkage to the TLC program, the Level 4 measures were targeted and included in the data collection plan, which is presented in Figure 5-2.

The Level 4 data items were then transferred to the ROI analysis plan so that the planning process could be completed. The methods for isolation, data conversion, cost categories, and other items were determined and documented on the ROI analysis plan, which is presented in Figure 5-3.

RESULTS

Reaction and Learning Data

Level 1 data were captured through an online feedback questionnaire that assessed course content, usefulness of the TLC program, and job applicability. Participants rated questions on a Likert-type scale from 1 to 7. Participant average for the overall course content was 6.6, and overall usefulness of the system was 6.5. Applicability of the course to the job was rated 6.8. Level 1 data are consolidated in the first three columns of Table 5-2.

Figure 5-2. Data Collection Plan United Petroleum International

Program: Technology Learning Competency Program (TLC) **Responsibility:** _____ **Date:** _____

Level	Objective(s)	Measures/Data	Data Collection Method	Data Sources	Timing	Responsibilities
Level I Reaction and Satisfaction	Employee positive reaction to: • Appropriateness of the technology delivery program • Usefulness of the TLC • TLC application to the job	• Participants perception and attitude	• Online questionnaire	• Participant	• End of each segment (3-5 modules) • End of program	• Program coordinator
Level II Learning	Module learning assignments-based on knowledge/skill gaps: • Client partnerships • Product pricing & contracting • Identification & handling objections	1. Skill gaps identified 2. Learning occurs as gaps closed through each module implemented	1. Online pre-test questionnaire on all modules 2. Online post-test by module	• Participant	1. Prior to training to establish baseline 1. Prior to each module as required 2. At end of each module	• Program coordinator
Level III Application & Implementation	1. Review post-course report and participate in follow-up planning meeting with manager 2. Application of skills to achieve business posts	1. Goals set and achieved 2. Skills applied in sales planning and sales situations	1. And 2. follow-up questionnaire	1. And 2. Participants 1. And 2. Managers	1. Coaching and planning session within two weeks of TLC 1. And 2. Follow-up questionnaire four months after TLC	• Program coordinator initiates follow-up • Manager and participant initiate planning and coaching
Level IV Business Impact	1. Improved closing ratio 2. Increased revenue 3. Customer satisfaction	1. Increase in monthly closes 2. Increase in profit margin 3. Customer satisfaction index	1. Performance monitoring 2. Performance monitoring 3. Customer survey (existing)	1. Sales record–marketing 2. Sales record–marketing 3. Customer quarterly survey	1. Monthly 2. Monthly 3. Monthly	• Program coordinator
Level V ROI	*Because of the strict requirement for development costs (see comments) an ROI at 20% will be acceptable.*	**Comments:** *Because training will be completed for all current engineers within first year of roll-out, management desires to achieve a return on investment during the first year. Therefore, development costs will not be prorated over the life of the program as is customary.*				

Figure 5-3. ROI Analysis Plan United Petroleum International

Program: Technology Learning Competency Program (TLC) **Responsibility:** _____ **Date:** _____

Data Items (Usually Level 4)	Methods for Isolating the Effects of the TLC Program	Methods of Converting Data to Monetary Values	Cost Categories	Intangible Benefits	Communication Targets for Final Report	Other Influences/ Issues During Application	Comments
Closes per month	•Participant estimates •Manager estimates	N/A; captured in monthly revenue below	•Development costs •Materials and software •Equipment •Time of subject matter experts •Salaries and benefits during training (while on company time) •Analysis and evaluation costs	•Recruiting tool •Increase in employee satisfaction •Improved partnership and communication between manager and sales engineer	•Sales engineers •Leadership of sales organization •UPI executive management	•Customers may not be able to identify if or how "engineer skills" impact their satisfaction •Influence of other factors on the three measures •Quality of coaching/ expectations session •Short time frame inhibited ability to field test the TLC modules	• Must capture % of time that training occurs on company time
Monthly revenue	•Participant estimates •Customer estimates	Profit margin of revenue					
Customer satisfaction index		Executive management estimate					

Level 2 data were assessed using pre- and post-testing. The pre- and post-testing for TLC was designed based on job performance expectations. Subject matter experts (SMEs) determined the testing components, which were then validated by sales managers.

The SMEs, working with the program designers, validated program content based on competency requirements and skill gaps of the sales organization. They also provided input to design pre- and post-tests. Pretests were administered electronically at the beginning of each learning module to determine individual knowledge and skill gaps. The results showed that participants averaged a 50 percent knowledge level on the pretest and averaged a 91 percent knowledge level on the post-test. These Level 2 data are consolidated in the last two columns of Table 5-2.

Application Data

Level 3 (application) included three components to evaluate results: 1) follow-up planning and coaching sessions between sales engineers and sales managers, (2) self-assessment of skill application using a follow-up questionnaire, and (3) managers' assessment of skill application using a follow-up questionnaire.

Engineers completed follow-up planning and discussion meetings with their respective managers within two weeks of completing the TLC program. A plan including goals and expectations was created as a result of each discussion. To allow appropriate time for evaluation and application of skills, it was imperative for managers to have these planning and coaching sessions as close to the end of the training as possible. The sessions occurred during July and August and averaged two hours in length. Because of the dispersed locations of the engineers and managers, some of these meetings were conducted face-to-face and some by telephone or video conferencing.

Table 5-2. Reaction and Learning Results—1 to 7 Scale

Reaction: Overall Course	Reaction: Overall Usefulness of TLC	Reaction: Job Applicability	Learning: Pre-test Overall Score	Learning: Post-test Overall Score
6.6	6.5	6.8	50%	91%

The follow-up questionnaire was developed during the program design phase and field-tested with a random sample of sales engineers and sales managers. By advice of the sales managers, the questionnaire was administered four months after the completion of the TLC program. Four months was deemed an appropriate timeframe to determine the successful application of skills. A series of questions on the follow-up questionnaire also focused on engineers' progress with the improvement goals established in the follow-up discussions between managers and sales engineers. In addition, sales managers each received a follow-up questionnaire focusing on the performance of sales engineers and isolating the effects of the TLC program. These performance data were consolidated and documented in the final evaluation report. Figure 5-4 presents a summary of the follow-up questions from the sales engineers' questionnaire.

Business Impact Data

Business impact data (Level 4) were monitored by reviewing the quarterly customer satisfaction index scores, the monthly sales closing averages, and the profit margin of monthly sales revenue. These data were readily available within the organization, and all but customer satisfaction were used in the determination of business impact and the return on investment of the TLC program. Customer satisfaction data were reviewed for progress, but a standard monetary value did not exist for improvements; therefore, there was no conversion to a monetary value.

Figure 5-4. Summary of Follow-Up Questions

1. Did you have a follow-up coaching session with your sales manager?
2. Did you complete a follow-up plan and set related goals?
3. How do you rate the quality of the planning and discussion session with your manager?
4. Based on the discussion and planning session you had with your manager, what specific improvement goals have you completed? What improvement goals still need to be completed?
5. How have you and your job changed as a result of participating in TLC?
6. How are you specifically applying what you learned as a result of participating in TLC?

Figure 5-4. Summary of Follow-Up Questions (*continued*)

7. What is the impact of these changes for the customer and the ISO organization?

8. Rank (estimate the percentage) the effect each of the following had on any improvement in your sales performance. Allocate from 0 to 100% to the appropriate factors (the total percentage of all items selected must equal 100%):

   TLC Training Program Influence _____%
   Market Influences _____%
   Manager Coaching Incentives _____%
   Other (specify) _____%

9. What barriers (if any) were a deterrent as you applied what you learned?

10. List any skills you did not have an opportunity to apply during the evaluation time-frame?

11. Estimate the total hours you were involved in accessing/completing TLC training during regular company work hours:____hours.

Isolating the Effects of the Program

To assess the Level 4 and 5 data accurately, it was imperative that the various influences on any improvement in sales performance be isolated. To isolate the effects of how each factor influenced sales (that is, TLC training, the new incentive plan, market changes, management influence, and so on), each had to be assessed by a credible source. The influence of each factor was determined by using participant and manager estimates regarding each factor. Because the managers work closely with the sales engineers (participants), it was felt that managers could respond credibly to these issues. The data were gathered from the participants in the Level 3 and 4 follow-up questionnaires and from the managers in a separate follow-up questionnaire. Table 5-3 reports the consolidated data.

Design and Implementation Costs

The development costs of $354,500 for this project included the salaries for development time of one project manager, five full-time employees, and four contract consultants. The costs associated with time spent in meetings and interviews with executive management, senior sales staff, and SMEs were also included. This included the time of the interviewer, as well as

the people being interviewed. The cost of travel, meals, and lodging during development was also included.

Table 5-3. Consolidated Estimates—Isolating the Effects

Influencing Factor	Sales Engineers Average from 104 Respondents	Sales Managers Average from 8 Respondents	Combined Average
New Incentive Plan	35%	37%	36%
TLC Training Program	38%	36%	37%
Executive Management Influence	8%	6%	7%
Coaching by Sales Manager	16%	18%	17%
Other (market changes, new products, product improvements, etc.)	3%	3%	3%

The material costs of $68,500 included a comprehensive workbook for participants, distribution of tutorial CDs, and some additional networking software.

The equipment cost of $91,000 included upgrades (systems, processors, and video/graphics capability) to the specified hardware setup. This cost category also included the purchase of several new laptops for the sales engineers, digital editing equipment for editing the video and graphics in each module, and two platform servers capable of handling the multi-operational usage.

Eight SMEs were assigned to the project. These eight lead sales engineers were paid their sales average ($150 per day) for the 18 days each spent on the module designs, video shoots, and other project duties.

The analysis and evaluation costs of $71,000 included all costs associated with the initial performance analysis and evaluation process (for example, employee time during interviews and questionnaires). This cost category also included the use of an outside consulting firm to plan and implement the performance analysis and evaluation methodology for this project.

All the 117 sales engineers reported completing all modules during their personal time. Because they were compensated mostly by commissions, they usually spent their work hours conducting sales planning and call activities. Table 5-4 summarizes the fully loaded costs for the TLC program.

Because no sales were occurring for SMEs during the 18 project days, the commission payments may represent a cost to the sales bottom line. The management team felt the lead sales engineers would be able to maintain their average sales throughout the year even with their involvement in this project. Therefore, they did not feel that lost sales should be included as an opportunity cost. Salaries and benefits and opportunity costs for the "actual training time" are not included in the calculations because none of the 104 sales engineers reported implementing the TLC training during normal company work hours.

Table 5-4. Fully Loaded Costs

Development Costs	$354,500
Materials/Software	$68,500
Equipment	$91,000
SME Time (commission paid to expert sales engineers for lost opportunity) eight people @ $150/day X 18 days	$21,600
Analysis and Evaluation Costs	$71,000
TOTAL	**$606,600**

Analysis

The results of the initiative were encouraging. Prior year sales records revealed that sales engineers' overall performance showed an average of 14 closes per month at $980 profit margin per close. Six months after the implementation of TLC, the engineers averaged 16.65 closes per month at $1,350 profit margin per close. From the previous year, this was an average increase of 2.65 closes per month and an additional $370 profit margin on revenue.

The design team decided to use the ROI Methodology's conservative process when calculating the ROI based on revenue generated from new or increased closes. This decision helped to enhance the credibility of the data because participant and manager estimates were the only methods used

to isolate the impact of training. The profit margin portion of the revenue increase attributable to the training (TLC) was used as a basis for the ROI calculation.

The Level 5 data were calculated by comparing the cost with the net benefits attributable to the TLC implementation. The benefit attributed to the use of TLC for improvement was considered to be 37 percent, based on the lowest value of the two estimates (manager estimates) from Table 5-3.

The benefits, except for improved customer satisfaction, were then converted to a monetary value, and a return on investment was calculated. Customer satisfaction improvements and other data that could not be converted to monetary values were captured as intangible benefits. Level 3 and 4 performance data and intangible benefits were documented in the final evaluation report.

ROI Results

Monitoring the performance records revealed the total increase in sales attributable to all influencing factors was $5,022,810. There was an average of 2.65 additional closes per month (16.65 – 14.0). However, based on the lowest estimates, only 37 percent of this increase in sales was influenced by the TLC program.

The conservative adjustment of benefits resulting from the TLC program was a factor of 0.98 additional closes per month (2.65 × 0.37). This resulted in an average of $1,323 profit margin per close ($1,350 × 0.98). Multiplied by 12 months and 117 engineers to annualize, this produced $1,857,492 in monetary benefits attributable to TLC.

- 2.65 closes × 0.37 = 0.98 factor for additional closes attributable to TLC program
- 0.98 × $1,350 per close = $1,323
- $1,323 × 12 months = $15,876 × 117 sales engineers = $1,857,492

The total cost of the TLC training program was $606,600. After rounding the benefits from the program, the ROI for the TLC program was calculated as follows:

$$\text{ROI (\%)} = \frac{\$1{,}857{,}000 - \$606{,}000}{\$606{,}600} \times 100 = 206\%$$

In addition to the impact of the TLC training, participants and managers reported the new incentive plan implemented in June had influenced an increase in sales by 36 percent, or $1,808,000.

Intangible Benefits

The results from quarterly customer satisfaction surveys were used to compare the previous year with the current year. Positive improvements and trends were identified. These data were not converted to a monetary value because management had no standard monetary value for an increase in customer satisfaction. It was also difficult to determine how much the skills and behavior from the training actually influenced the improvement in customer satisfaction. Data to isolate and substantiate this would need to come directly from customers because many factors could influence their satisfaction level. When using estimates, only customers are likely to know the extent of such influences. However, executive management felt the customer satisfaction scores were a good indicator of how the organization was responding to the market.

The customer satisfaction scores showed an average improvement of 23 percent since the previous year. Sales engineers and sales managers reported additional intangible benefits, such as increased job satisfaction, better understanding of expectations, reduced turnover, and increased recruiting effectiveness of future sales engineers.

Lessons Learned

This program demonstrated favorable results. The results can be attributed to several things: a comprehensive front-end analysis process that accurately identified the appropriate gaps and solutions, the support of corporate HR, the support of executive management, and the sales organization providing the resources and clarification of expected outcomes prior to designing this initiative.

A major learning issue involved meeting management's requirement for a short lead time to design and implement the program. Executive management expected the program to be implemented within a few months because the competitive environment and need for improved skills were having a negative impact on sales. This created little time to conduct a pilot program. Also, there was not enough time to create all the modules needed for the full range of competency and skill needs of the sales organization. The most salient competencies were targeted and given development priority.

The need to more accurately isolate the effects of this initiative was another learning issue. Several factors influenced the results. Although participant estimates can be effective (participants know what influences their performance), additional methods, like a control group arrangement or trend-line analysis, can often isolate the impact more convincingly.

REPORTING TO STAKEHOLDER GROUPS

The target population for this initiative included four groups: the sales engineers, the leaders of the sales organization, the SMEs, and the executive management team of UPI. All played a critical role in the success of the TLC program. All were provided a final report showing the results from the impact study.

The primary group was the 117 sales engineers who actually participated in the TLC program. They were the most instrumental of the groups in creating the success enjoyed by TLC. They dedicated the time to the system and took full advantage of the opportunity to improve performance based on what they learned from the technology-supported training. They also provided tremendous constructive feedback to enhance the system for future engineers.

The second group consisted of the leaders of the sales organization, who were responsible and accountable for the success of sales at UPI. Ten people—including one executive vice president, one director, and eight sales managers—were key factors in the success. They supported the up-front analysis and the validation of the job skills and gaps that were to be measured. By conducting planning and coaching sessions with sales engineers and by discussing expectations, the leaders of the sales organization were essential factors in the transfer and application of skills on the job.

The third group was the SMEs, who provided timely and accurate feedback about each module being developed, and the corporate professionals and consultants, who demonstrated diligence and expertise. On frequent occasions, they worked beyond normal work hours to keep the project on track.

The fourth group was the members of the executive management team of UPI, who funded the project and showed interest in the entire training process. The executive management team supported the project by allocating the necessary resources and setting the expectations for outcomes.

Questions for Discussion

1. Identify the influencing factors that contributed to the success of the TLC program.
2. How would you convince management that a control group arrangement would be beneficial to the study?
3. What recommendations would you make to management to convert customer satisfaction improvements to a monetary value?
4. How credible are the estimates in this evaluation?
5. How credible is this study?