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LONGITUDINAL MEASUREMENT OF SERVICE QUALITY IN INFORMATION SYSTEMS: A CASE STUDY

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ABSTRACT

Using SERVQUAL, IS service quality was measured twice, at a one year interval, in a large accounting and information management consulting firm. After the first measurement, IS management used the results to initiate several actions to improve service quality. The second measurement indicated that service quality improved. The managerial actions that preceded the increase in service quality are reported and discussed.

1. INTRODUCTION

IS departments have increased their range of responsibilities since the widespread introduction of personal computers in the last decade. They now provide a wide range of services to their clients (Pitt, Watson, and Kavan 1994). Traditionally, the role of IS in promoting productivity has been to design, build, and install systems to improve organizational performance. An army of acronyms is used to classify these systems — TPS, MIS, DSS, EIS, ES, and GSS are some examples. However, now that IS has an important service function, it needs to look beyond systems building as its major contribution to organizational productivity. IS departments need to examine how they can increase the quality of their service so that through better service they increase their customers' productivity and consequently that of the organization.

IS departments can increase customer productivity in a number of ways: providing services dependably and accurately; giving service promptly and willingly; employing knowledgeable, approachable, and affable service personnel; having the equipment appropriate for customers' needs; and providing individualized attention. Effective service means customers perform their work more efficiently. Their performance is not hindered by unreliable IS systems and unresponsive or unknowledgable IS personnel. Upgrading IS service can be an effective means of adding value to clients' activities and increasing organizational productivity.

In this paper, we discuss the use of SERVQUAL, an instrument developed by marketing academics for assessing service quality in general, for assessing IS service quality in an organization over a period of time. We show how changes in the delivery of service quality are indeed perceived as different by users. This reinforces the need for IS departments to give attention to service quality and vindicates the effort expended on making IS service more attuned to the expectations of users.

2. MEASURING IS SUCCESS

IS success is a multidimensional construct and there is no single, overarching measure. DeLone and McLean (1992) identify six categories into which these measures can be grouped, namely system quality, information quality, use, user satisfaction, individual impact, and organizational impact. The categories are linked to define an IS success model (see Figure 1).

As we pointed out previously, the IS department is also a service provider. For instance, personal computer users do not just want a machine; rather they seek a system that satisfies their personal computing needs. Thus the IS department's ability to supply installation assistance, product knowledge, software training and support, and on-line help are factors that will have an impact on the relationship between IS and users. Thus, Pitt, Watson and Kavan (1994) argue that service quality needs to be considered as

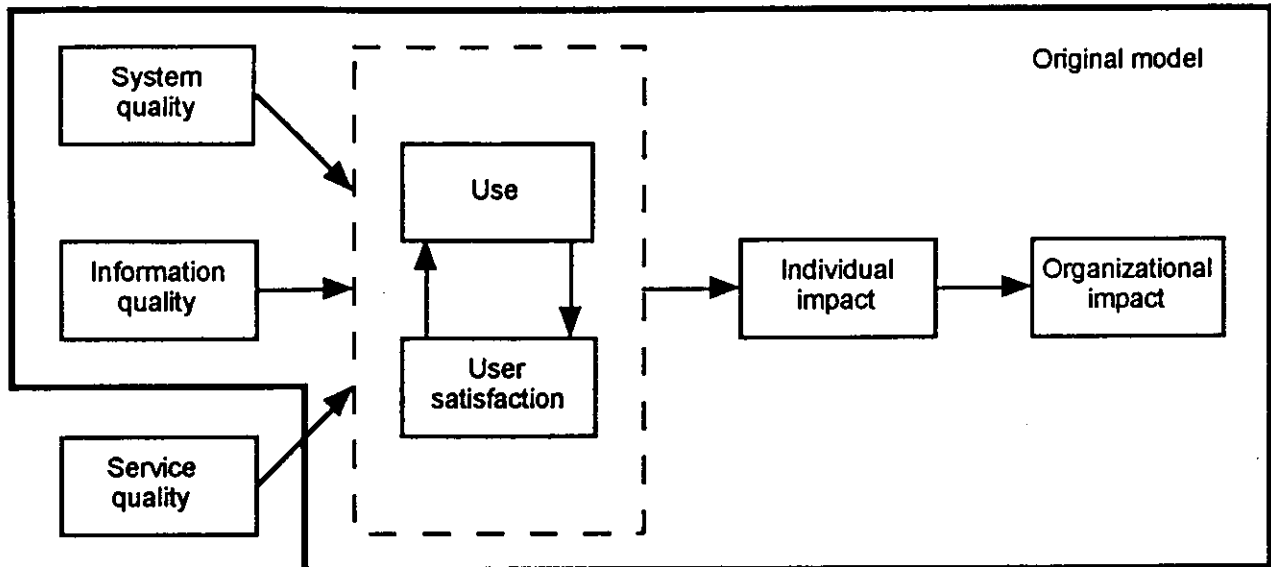


Figure 1. Augmented IS Success Model
(Pitt, Watson and Kavan 1994)

an additional measure of IS success and they augment the DeLone and McLean model. The revised model (see Figure 1) shows service quality affects both use and user satisfaction.

3. MEASURING SERVICE QUALITY

Service quality is based on a comparison between what the customer feels should be offered and what is provided (Parasuraman, Zeithaml and Berry 1985). Other marketing researchers (Sasser, Olsen, and Wyckoff 1978; Gronroos 1982) also support this notion that service quality is the discrepancy between customers' perceptions and expectations. There is also support for this argument in the IS literature. Conrath and Mignen (1990) report that the second most important component of user satisfaction, after general quality of service, is the match between users' expectations and actual IS service. Rushinek and Rushinek (1986) conclude that fulfilled user expectations have a strong effect on overall satisfaction.

Parasuraman and colleagues (Parasuraman, Berry and Zeithaml 1991; Parasuraman, Zeithaml and Berry 1985, 1988; Zeithaml, Parasuraman and Berry 1990) suggest that service quality can be assessed by measuring customers' expectations and perceptions of performance levels for a range of service attributes. Then the difference between

expectations and perceptions of actual performance can be calculated and averaged across attributes. As a result, the gap between expectations and perceptions can be measured. Managers then have a clear target for improving effectiveness: reduce the gap between expectations and perceptions.

Parasuraman, Zeithaml and Berry (1988) operationalized their conceptual model of service quality by making extensive use of focus groups to identify dimensions of service quality. Their work resulted in a 45-item instrument, SERVQUAL, for assessing customer expectations and perceptions of service quality in service and retailing organizations. The first part consists of 22 questions for measuring expectations. Questions are framed in terms of the performance of an excellent provider of the service being studied. The second part consists of 22 questions for measuring perceptions. Questions are framed in terms of the performance of the actual service provider. The final part is a single question to assess overall service quality. Underlying the 22 items are five dimensions that the developers claim are used by customers when evaluating service quality, regardless of the type of service. These dimensions are:

- Tangibles* Physical facilities, equipment, and appearance of personnel.
- Reliability* Ability to perform the promised service dependably and accurately.

Table 1

EDP Staff and Services questions	Possible service quality factors
Relationship with the EDP staff	Empathy
Processing of requests for changes to existing systems	Responsiveness
Attitude of the EDP staff	Empathy
Determination of priorities for allocation of EDP resources	?
Convenience of access (to utilize the computer capability)	Tangibles
Communication with the EDP staff	Empathy
Time required for new systems development	Responsiveness
Personal control of EDP services received	?
Flexibility of systems	Responsiveness

Responsiveness Willingness to help customers and provide prompt service.

Assurance Knowledge and courtesy of employees and their ability to inspire trust and confidence.

Empathy Caring, individualized attention the service provider gives its customers.

Service quality for each dimension is captured by a difference score G (representing perceived quality for that item), where

$$G = P - E$$

and P and E are the average ratings of a dimension's corresponding perception and expectation statements respectively.

As Figure 1 suggests, service quality is a determinant of user satisfaction. The most common measure of user satisfaction, User Information Satisfaction (UIS) (Ives, Olson and Baroudi 1983), includes a factor called "EDP Staff and Services." This suggests that UIS includes some measures of service quality. Now that we have examined the factors underlying service quality, it is useful to link the questions comprising the factor "EDP Staff and Services" to service quality factors (see Table 1). The comparison suggests that "EDP Staff and Services" focuses on empathy and responsiveness and ignores the dimensions of reliability and assurance. Thus, SERVQUAL appears to tap a broader range of concepts than "EDP Staff and Services." Also, the marketing literature, which is the basis of the augmented IS success model (see Figure 1), indicates that service quality precedes satisfaction (Pitt, Watson and Kavan 1993). Thus, we conclude that UIS only partially addresses the issue of service quality and it is desirable to separate measures of service and satisfaction.

In a recent paper, Pitt, Watson and Kavan assessed the validity of SERVQUAL for measuring the service quality of IS departments. Their research, conducted in the United States, United Kingdom, and South Africa, supports the use of SERVQUAL in the IS domain. They report that practitioners find SERVQUAL a useful tool for assessing service quality and determining actions for raising service quality. In particular, some managers considered SERVQUAL was suitable for continued monitoring of IS service quality. Consequently, in this paper we examine the longitudinal use of SERVQUAL.

4. MEASURING CHANGE IN SERVICE QUALITY OVER TIME

Service quality was measured twice, at a precisely one year interval, within the British national office of a major international accounting and information management consulting firm. The standard SERVQUAL questionnaire was administered, with minor appropriate changes as suggested by Pitt, Watson and Kavan, to internal computer users. Respondents were also required to give an overall rating of the IS department's service quality: in the first study on a four-point scale, ranging from 1 through 4 (1 = poor, 2 = fair, 3 = good, 4=excellent); and in the second study on a 5-point scale, whether the service delivery of the IS department had got much worse (1), worse (2), stayed the same (3), got better (4), got much better (5).

Respondents were the internal clients of the information systems department throughout the organization. The gamut ranged from partners to clerical staff; they came from disciplines as varied as auditing and human resources. They were required to disclose their geographic location, position, extent of exposure to the IS department, and an assessment of their own expertise in matters related to IS, IT and computers. In both the studies, the questionnaires

were dispatched to a random sample of 800 users (from a total of around 8,000) by means of the internal mail system. In the first study, 181 usable responses had been received by the cutoff date, for a response rate of 22.6%, while in the follow-up study 169 usable responses were received by the cutoff date, for a response rate of 21.13%.

5. RESPONSE TO INITIAL USE OF SERVQUAL

The initial study received an extremely favorable response from the firm's managers. Some of their comments were:

I can't believe the value we have got from this survey. I was really skeptical at first, but let the project go ahead. It has given us insights into our users and our business that we have not had before. This is a worthwhile initiative which we can use to track IS service quality. We will do it again. [Managing Partner with responsibility for IS]

The SERVQUAL study has given us meaningful service goals to strive for, and insights into targeting IS efforts, as well as a good indication of users' perceptions of the quality of service they receive. [The manager commissioning the study]

As the results were presented, we seemed to go through distinct phases:

Anticipation — what are we going to get that we can use?

Dismay — are we really this bad?

Disbelief — we don't believe these results, there must have been something wrong in the way you did the study

Acceptance — OK, we believe them

Resignation — OK we accept them

Some optimism — we can do something about them.

[A senior IS manager]

The firm took several actions as a result of the study. A conference of IS managers was convened to analyze the results and instigate plans for improving service and developing a service culture within IS. The Managing Partner for IS insisted that henceforth every IS management meeting should include "Service Excellence" on the agenda. The IS department commenced drafting a "Mark of Quality

Charter," which informed users of what they could rightfully expect from the IS department. Other actions included dissemination of the results of the initial study to all IS personnel and users. The IS manager convened six meetings of what he called CATs (Customer Action Teams). These were small groups (an average size of ten members) of influential users, who met with managers of the IS department to discuss service issues, problems, and the latest developments. IS managers also used these meetings as vehicles for informing users of the IS department's plans and problems. The IS department commenced the quarterly publication of a newsletter, in which service quality issues were featured in each edition.

An internal IS suggestion scheme was implemented, with "good" ideas rewarded by book vouchers signed by the Managing Partner. He commented on the scheme:

This is not to say that these are good or bad ideas, or theoretically sound. I think they are interesting and useful because at least they say something has been done.

The Managing Partner for IS believed that, if these actions were to have any benefit, they would result in reducing the service quality gaps as measured by SERVQUAL, as well as an independent measure of improvement in service quality. The second administration of SERVQUAL, a year later, was intended to track whether these actions had improved service quality.

6. RESULTS OF THE SECOND STUDY

Initial data analysis focused on changes in expectations and perceptions between the two measurement periods. For each dimension, the expectation and perception scores were computed. As can be seen from Figure 2, there is an increase in expectations for each of the five dimensions between 1992 and 1993. The usual t-test for each dimension shows no significant change in expectations between periods. However, consider the case where there are no differences for the five dimensions between expectations in 1992 and 1993, then the value of the differences would be randomly distributed, and one would expect both positive and negative values for the difference between 1993 and 1992. In this case, the probability of getting five positive changes purely by chance is $(0.5)^5 = 0.03$. Furthermore, when the 22 items making up the five dimensions are examined, there are 20 positive changes. Under the same assumptions, the probability of this happening purely by chance is $< .0001$.¹ Application of a 5% significance level leads us to reject the hypothesis that there is no overall change in expectations, and we conclude expectations have increased.

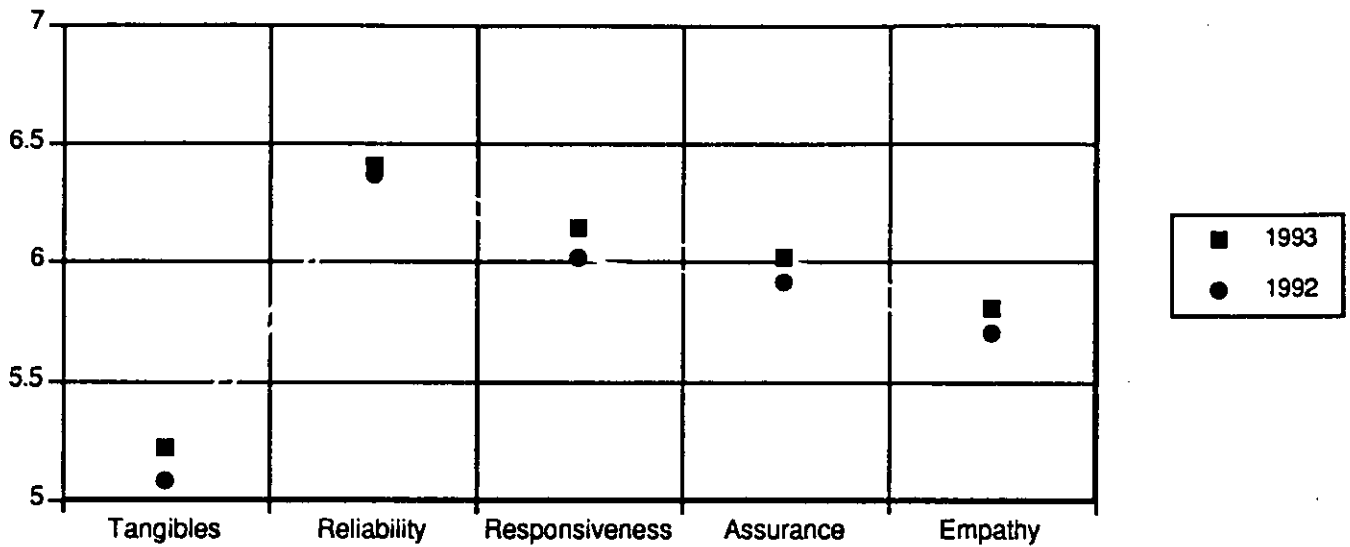


Figure 2. Change in Expectations

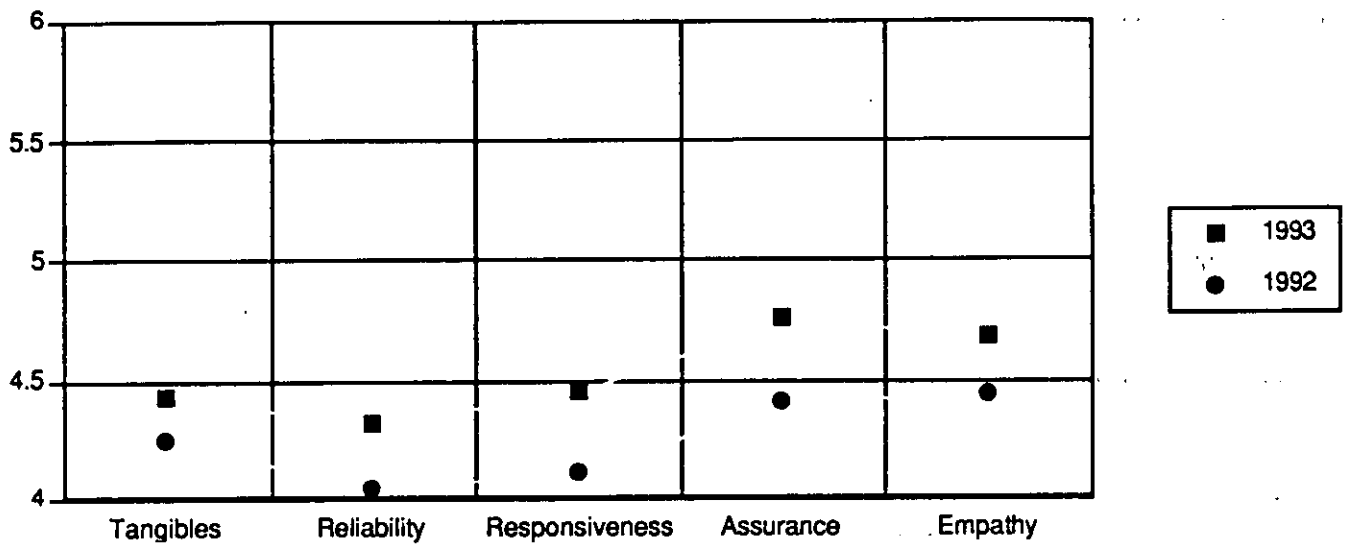


Figure 3. Change in Perceptions

It is not surprising that there is an increase in expectations. Once the IS department shows an interest in service quality by administering an instrument such as SERVQUAL, it sends a clear message that service is important. What is measured is deemed to be significant. In addition, the actions taken by the firm to improve service quality undoubtedly raised expectations. What is probably surprising is that expectations were raised so little. This suggests the firm managed successfully to keep users' expectations

within reasonable limits, perhaps by communicating effectively with the CATs on problems experienced by the IS department.

Perceptions were also increased (see Figure 3), the change being statistically significant in every case. The least significant change was for Tangibles ($p = .03$) and the most significant for Assurance ($p = 0.0028$). Clearly, the firm's actions to improve service quality had an impact. Users' perceptions were increased for every dimension.

Table 2. Changes in Dimensions: 1992-1993

Dimension	1992 Gap	1993 Gap	Size of change	Significance*
Tangibles	-0.82	-0.78	0.04	.35
Reliability	-2.32	-2.08	0.24	.03
Responsiveness	-1.90	-1.69	0.21	.05
Assurance	-1.51	-1.27	0.24	.03
Empathy	-1.26	-1.12	0.14	.13

*One tail test that 1993 gap is greater than 1992 gap

The usual calculation of the gap between expectations and perceptions was performed and then the five dimensions of service quality were computed (see Table 2). A one-tail t-test was then used to compare the scores on the five dimensions for 1992 and 1993. A one-tail t-test was used because our general proposition was that service quality had improved since the first measurement in 1992.

Examination of Table 2 shows that there has been a significant increase (the gap has been reduced) in the service dimensions of reliability, responsiveness, and assurance. The largest changes are for the dimensions of reliability and assurance. We gain further understanding of the relevance of these changes by considering the respondents' assessment of the importance of each dimension.

In both studies, respondents were asked to assign weights to the dimensions, using a 100 point constant-sum scale for allocating importance across the five dimensions. The weights for 1992 and 1993 are reported in Table 3, which shows that reliability is clearly the most important dimension, followed by responsiveness. Interestingly, between the two measurement points there is a highly significant decrease ($t(339) = 3.01, p = .0028$) in the weight allocated to reliability. This decrease seems to be spread over the other dimensions, with a statistically significant change occurring in empathy. Respondents seem to have decided that reliability is not as important as they thought in the initial administration of SERVQUAL. A possible explanation is that after CATs discussions respondents began to understand that reliability is an outcome, rather than a process. It is not possible to be totally reliable all the time, but it is possible to be constantly responsive, empathetic, offer assurance and have near-perfect tangibles (Berry and Parasuraman 1991).

The weights assigned to each dimension by each respondent were used to calculate a weighted service quality index

$$\left(\sum_{j=1}^5 w_j d_j \right) / 100 \text{ for 1992 and 1993, where } w_i \text{ and } d_i$$

are the weight and score for the i^{th} dimension. The results of this calculation are reported in Table 4.

As mentioned previously, the users' perceptions of the change in service quality were also assessed with a single question based on a five-point scale. The average score for this overall measure was 3.40. As the midpoint of this scale was 3 (stayed the same), we tested whether the mean score was different from 3.00. The analysis indicates a significant increase in perceived service quality ($t(167) = 8.90, p < .0001$).

The evidence presented demonstrates the IS department successfully improved the quality of its service. Perceptions were improved despite an increase in expectations. The key question is what particular actions were most effective in raising service quality.

7. ACTIONS TO CHANGE SERVICE QUALITY

The IS department made many changes to improve service quality and it is not possible to isolate, in a rigorous fashion, the change or changes that were most effective in raising service quality. After discussions with IS managers within the firm, we conclude that the following changes were probably most influential in closing the gap:

1. **Changed IS attitudes.** The findings of the first study were communicated to all members of the IS department, the great majority of whom took them very seriously. The need to improve service quality was reiterated throughout the year.
2. **Changed user attitudes.** Continuous efforts were made over the year to inculcate an improved awareness among users about what the IS department was, what it did, and who worked in it. Managers believe that the CATs were invaluable and attribute the shrinking of the reliability gap to users' improved understanding of the IS department and its problems. This was simply

Table 3. Weights for Dimensions: 1992-1993

Dimension	1992 Weight	1993 Weight	Size of change	Significance*
Tangibles	9.49	10.98	1.49	.06
Reliability	39.21	34.75	-4.46	.0028
Responsiveness	22.93	23.33	0.40	.72
Assurance	16.93	18.20	1.27	.56
Empathy	11.50	12.78	1.28	.04

*Two tail test that 1993 weight is different from 1992 weight.

Table 4. Weighted Service Quality Index: 1992-1993

Dimension	1992	1993	Size of change	Significance*
SQI	-1.77	-1.53	0.24	.015

*One tail test that 1993 weighted SQI is smaller than 1992 gap

because users now grasped the fact that the IS department had its problems like all others within the firm and that it was generally doing its best despite resource, time and human restrictions. Managers consider they were able to reach opinion leaders among users. A better understanding of IS meant that users' expectations were more in tune with what IS could deliver.

3. **Managers emphasized that staff should set expectations they could deliver.** Great care was taken to ensure that unrealistic promises were not made. Senior IS managers constantly told staff that they would prefer a disappointed customer (i.e., one who wanted something today and was told they could only get it next week) to an angry one (one who was told they would get it today and only then received it next week).
4. **Improved communications with users.** IS managers believe that their communication with users, through newsletters, bulletin boards etc., has paid off: users know who they are, and how to contact them. In this case, familiarity has not bred contempt, but just the opposite.
5. **IS service improved.** IS management used the results of the first study to identify some causes of poor service and rectified these problems. Also, they had successfully communicated to IS personnel the need to improve service quality.

Lewin's (1947) three-phase model of organizational change is a framework for understanding the sequence of processes that facilitated the change in service. Change requires (1) unfreezing — being receptive to change; (2) moving — making the change; (3) refreezing — stabilizing the change.

7.1 Unfreezing

The results of the first study provided feedback that IS was not providing a quality service. This set the scene for unfreezing IS personnel so that they were ready to change their behavior. Also, IS management took some steps to unfreeze users' attitudes. Meeting with the key users was a successful endeavor to change users' attitudes towards the IS department. These meetings indicated that IS wanted to improve service. They unfroze some of the communication barriers between IS and users. Thus, IS management prepared both its staff and users for change.

7.2 Moving

There were several actions that moved service quality to a higher plain. First, IS personnel were instructed to set realistic expectations. The gap between expectations and perceptions was narrowed by reducing expectations. Second, IS management rectified problems identified during the first survey. The quality of service was positively changed. Third, continuous communication with users was established through a variety of media and an enhanced level of cooperation emerged.

7.3 Refreezing

IS management has established new attitudes toward service, but the second survey suggests there is still a need for improvement. Thus, IS management wants its staff refrozen in terms of its attitude to service — high quality IS service is a key objective — but it does not want them refrozen at a slightly higher level of service. Rather, it wants them to keep changing their behavior to improve service. It wants IS staff to remain in the moving phase (e.g., it keeps reiterating the need to improve service) so that service quality is continually improving.

8. CONCLUSION

This paper demonstrates that service quality, as measured by SERVQUAL, provides valuable information for IS managers. In the IS department studied, managers found the results informative and used them as a foundation for making decisions to improve the quality of service provided. As the follow-up administration of SERVQUAL demonstrates, the IS department was able to reduce the gap between expectations and perceptions.

The findings suggest that it is important for IS managers to first recognize their service mission and then ensure that staff understand their service function. The IS department sent clear, consistent, and repeated signals that service matters. Once recognition of the service role is achieved, the answer is very simple: provide better service.

As well as providing better service, IS managers need to set expectations they can achieve. Impossible promises only lead to disaffected customers. The power of SERVQUAL is that it clearly links expectations and perceptions, and managers get a clear picture of the gap between what customers expect and get. Working with customers to set realistic expectations and then meeting these reduces the gap. This means IS managers must spend time building rapport with their customers and ensuring accurate communication of what IS can deliver.

IS is a service provider and IS managers ignore this dimension of their business at their peril. Discontented customers will look for alternative providers who promise better service. The white knight for many dissatisfied customers comes charging in on a steed called outsourcing. Irrespective of the source of IS services, quality IS service lets customers pursue the goals of the business with a minimum of disruption. Thus, high quality IS service can make an important contribution to organizational productivity.

9. REFERENCES

Berry, L. L., and Parasuraman, A. *Marketing Services: Competing Through Quality*. New York: The Free Press, 1991.

Conrath, D. W., and Mignen, O. P. "What is Being Done to Measure User Satisfaction with EDP/MIS." *Information and Management*, Volume 19, Number 1, 1990, pp. 7-19.

DeLone, W. H., and McLean, E. R. "Information Systems Success: The Quest for the Dependent Variable." *Information Systems Research*, Volume 3, Number 1, 1992, pp. 60-95.

Gronroos, C. *Strategic Management and Marketing in the Service Sector*. Helsingfors, Finland: Swedish School of Economics and Business Administration, 1982.

Ives, B.; Olson, M. H.; and Baroudi, J. J. "The Measurement of User Information Satisfaction." *Communications of the ACM*, Volume 26, Number 10, 1983, pp. 785-793.

Lewin, K. "Frontiers in Group Dynamics." *Human Relations*, Volume 1, 1947, pp. 5-41.

Parasuraman, A.; Berry, L. L.; and Zeithaml, V. A. "Refinement and Reassessment of the SERVQUAL Scale." *Journal of Retailing*, Volume 67, Number 4, 1991, pp. 420-450.

Parasuraman, A.; Zeithaml, V. A.; and Berry, L. L. "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing*, Volume 49, Fall 1985, pp. 41-50.

Parasuraman, A.; Zeithaml, V. A.; and Berry, L. L. "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality." *Journal of Retailing*, Volume 65, Number 1, 1988, pp. 12-40.

Pitt, L. F.; Watson, R. T.; and Kavan, C. B. "Measuring Service Quality in Information Systems." Working Paper, Department of Management, University of Georgia, 1994.

Rushinek, A., and Rushinek, S. F. "What makes Users Happy?" *Communications of the ACM*, Volume 29, Number 7, 1986, pp. 549-598.

Sasser, W. E.; Olsen, R. P.; and Wychoff, D. D. *Management of Service Operations: Text and Cases*. Boston: Allyn and Bacon, 1978.

Zeithaml, V.; Parasuraman, A.; and Berry, L. L. *Delivering Quality Service: Balancing Customer Perceptions and Expectations*. New York: The Free Press, 1990.

10. ENDNOTE

1. Prob (20 or more positive values) =

$$\sum_{i=20}^{22} C_i^{22} * (.05)^{22} \text{ where } C_p^n = \frac{n!}{p!(n-p)!}$$

APPENDIX

SERVICE QUALITY EXPECTATIONS

Directions: This survey deals with your opinion of the Information Systems Department (IS). Based on your experiences as a user, please think about the kind of IS unit that would deliver excellent quality of service. Think about the kind of IS unit with which you would be pleased to do business. Please show the extent to which you think such a unit would possess the feature described by each statement. If you strongly agree that these units should possess a feature, circle 7. If you strongly disagree that these units should possess a feature, circle 1. If your feeling is less strong, circle one of the numbers in the middle. There are no right or wrong answers – all we are interested in is a number that truly reflects your expectations about IS.

Please respond to ALL the statements

	Strongly disagree	Strongly agree
E1 They will have up-to-date hardware and software	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E2 Their physical facilities will be visually appealing	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E3 Their employees will be well dressed and neat in appearance	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E4 The appearance of the physical facilities of these IS units will be in keeping with the kind of services provided	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E5 When these IS units promise to do something by a certain time, they will do so	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E6 When users have a problem, these IS units will show a sincere interest in solving it	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E7 These IS units will be dependable	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E8 They will provide their services at the times they promise to do so	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E9 They will insist on error-free records	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E10 They will tell users exactly when services will be performed	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E11 Employees will give prompt service to users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E12 Employees will always be willing to help users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E13 Employees will never be too busy to respond to users' requests	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E14 The behavior of employees will instill confidence in users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E15 Users will feel safe in their transactions with these IS units employees	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E16 Employees will be consistently courteous with users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E17 Employees will have the knowledge to do their job well	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E18 These IS units will give users individual attention	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E19 These IS units will have operating hours convenient to all their users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E20 These IS units will have employees who give users personal attention	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E21 These IS units will have the users' best interests at heart	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
E22 The employees of these IS units will understand the specific needs of their users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	

SERVICE QUALITY PERCEPTIONS

Directions: The following set of statements relate to your feelings about ABC corporation's IS unit. For each statement, please show the extent to which you believe ABC corporation's IS has the feature described by the statement. Once again, circling a 7 means that you strongly agree that ABC corporation's IS has that feature, and circling 1 means that you strongly disagree. You may circle any of the numbers in the middle that show how strong your feelings are. There are no right or wrong answers – all we are interested in is a number that best shows your perceptions about ABC corporation's IS unit.

Please respond to ALL the statements

	Strongly disagree	Strongly agree
P1 IS has up-to-date hardware and software	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P2 IS's physical facilities are visually appealing	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P3 IS's employees are well dressed and neat in appearance	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P4 The appearance of the physical facilities of IS is in keeping with the kind of services provided	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P5 When IS promises to do something by a certain time, it does so	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P6 When users have a problem, IS shows a sincere interest in solving it	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P7 IS is dependable	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P8 IS provides its services at the times it promises to do so	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P9 IS insists on error-free records	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P10 IS tell users exactly when services will be performed	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P11 IS employees give prompt service to users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P12 IS employees are always willing to help users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P13 IS employees are never be too busy to respond to users' requests	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P14 The behavior of IS employees instills confidence in users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P15 Users will feel safe in their transactions with IS's employees	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P16 IS employees are consistently courteous with users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P17 IS employees have the knowledge to do their job well	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P18 IS gives users individual attention	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P19 IS has operating hours convenient to all its users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P20 IS has employees who give users personal attention	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P21 IS has the users' best interests at heart	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	
P22 Employees of IS understand the specific needs of its users	1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7	

Now please complete the following:

- Overall**, how would you rate the quality of service provided by IS? Please indicate your assessment by circling one of the points on the scale below:

Poor Excellent

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7