

A FORMULA FOR THE COMPREHENSIVE EVALUATION OF LOCAL TELEPHONE
SERVICE QUALITY: REPORT TO THE FLORIDA PUBLIC SERVICE COMMISSION

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FINAL REPORT

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EXECUTIVE SUMMARY

In order to evaluate local telephone companies operating within the State of Florida, the Public Service Commission (FPSC) monitors the performance of companies on 69 dimensions with published rules or standards of performance. Forty of these pertain to residential services and twenty-nine to public telephone service. Historically, all companies evaluated fail at least some of the 69 standards, and all companies exceed some of the standards. In order to have a consistent method for evaluating the overall quality of service being provided by a given company, the FPSC contracted with the author of this report to develop a weighted index of local telephone service quality.

This document reports such a weighted index, based upon a study of the evaluation policies of 10 telecommunications experts within the Florida Public Service Commission, and 10 telecommunications experts at the State of Florida Department of General Services (DGS). These experts were asked to evaluate profiles of telephone companies achieving combinations of high and low scores on dimensions covered by the 69 rules. A methodology called "conjoint analysis" was used to determine the trade-offs experts made between levels of performance on the 69 dimensions. This analysis derived the FPSC and DGS experts' implicit weights placed on each of the 69 criteria, and distilled them into a single formula. This formula allows a telephone company's performance on each of the 69 rules to be combined into a single number on a scale from 0 (worst possible performance) to 100 (best possible performance). Using this formula, a company exactly meeting FPSC standards on all 69 criteria would receive an overall rating of 75 (i.e., barely satisfactory). For each criterion, points are added to the base of 75 for each 1%-point above the published standard, and points are subtracted for each 1%-point below the standard. The exact number of points was

determined by FPSC and DGS experts' weights on the 69 dimensions.

A similar weighted index had been developed by the author and Dr. Thomas Buzas in a report submitted to the FPSC in January of 1988. The current work differs from the earlier work in four primary respects.

- a. The previous report covered only 38 of the 69 rules, making the current index more comprehensive.
- b. The previous report included 911 answer time among the criteria, and experts rated this as a very important dimension. However, it was pointed out that 911 answer time is beyond the control of the local telephone companies, who can only be held responsible for whether the call to 911 is completed and not for whether the county responds to the emergency appropriately once they receive a call. Therefore, the current survey dropped 911 answer time as a criterion, and replaced it with 911 call completions.
- c. The previous report assumed that a 1%-point increase for a firm operating below the FPSC standard was no more valuable than a 1%-point increase for a firm already operating above the standard. For example, the standard for Dial Tone Delay is 95%. In the earlier work, improvements from 90% to 91%, or from 94% to 95%, or from 98% to 99% were all assumed to be equally valuable. The current method allows for the possibility that the former change is more valuable than the latter. Results of the current study confirmed that this was in fact true in the experts' judgment. Presumably this is because experts felt that the benefits of increases in performance beyond a certain level would be outweighed by the incremental costs of improvement.

- d. The previous weighted index had been based upon the opinions of expert FPSC staff members. Studies conducted had demonstrated that the weights of the FPSC experts agreed very closely with those of experts within the telephone companies being regulated. However, no data had been collected from knowledgeable telecommunications consumers. The current study surveyed both FPSC experts and experts within the DGS who are responsible for purchasing telecommunications services for the State of Florida. Because most DGS experts had little expertise relevant to evaluating public telephone service, they completed only those portions of the survey pertaining to the 40 dimensions of quality of residential telephone service. Results of the current study showed that the weights these experts placed on 40 dimensions agreed closely with the weights derived from FPSC experts.

The portion of the survey covering residential telephone service included one other major innovation. Experts were asked to trade off performance on the 40 dimensions of residential service against variations in the price of basic monthly service. This allowed an estimate of the monetary value that the expert would attach to a 1%-point improvement along each dimension. Here, the results of the two groups were less in agreement. Compared to experts within the FPSC, the DGS experts indicated that they would be willing to sacrifice over three times more in terms of quality to get a \$1 reduction in the cost of basic monthly phone service.

The formula revealed that the criteria for which a 1%-point change in compliance has the greatest effect on overall evaluations are:

1. Dial Tone Delay (when operating) below the 95% standard -- 4.96

points;

2. Intra-Office Call Completions below 95% standard -- 2.35 points;
3. Dial Tone Delay above 95% standard -- 2.22 points;
4. 911 Service Call Completion below 100% standard -- 1.68 points;
5. Billing Accuracy of Intra-LATA calls below 97% standard -- 1.67 points;
6. Inter-Office Call Completions below 95% standard -- 1.23 points;
7. 24-Hour Restoral below 95% standard -- 0.78 points;
8. EAS Call Completions below 95% standard -- 0.58 points;
9. Operator Answer Time below 90% standard -- 0.49 points;
10. Primary Service Appointments below 90% standard -- 0.48 points;

Note that 9 of the 10 largest weights were for below-standard performance, highlighting the merit of estimating a separate weight for 1% changes above and below standards for those dimensions with standards of less than 100%.

This report is accompanied by a LOTUS 1-2-3 spreadsheet that will allow FPSC staff to automatically compute an overall weighted quality index for any company being evaluated. A company always begins with a base of 75, reflecting the presumption that all standards are being met exactly. One enters the numerical scores for a company on the dimensions for which evaluation data have been collected in either the "above standard" cell for that dimension or the "below standard" cell. The spreadsheet takes the difference between the obtained score and the standard and multiplies it by the weight of a 1%-point change on that dimension, resulting in an adjustment up for above-standard performance and an adjustment down for below-standard performance. The same operations are performed for all dimensions for which evaluation data have been obtained. By adding all of these weighted adjustments to the base of 75, an

overall quality index is calculated.

The use of this index implies two major departures from the current regulatory regime. First, in using this index, a company achieving a weighted index score higher than 75 should be treated as providing "satisfactory" service, even if this score results from exceeding some standards while failing others. The weights given here reflect the experts' tradeoffs. These imply that a company can provide a mixture of super-standard and sub-standard performance and still be providing quality superior to a company that meets all standards exactly.

Second, this index makes it possible for the FPSC to reward systematically companies providing superior quality by allowing preferential rates of return. Inferior quality can be punished by allowing lower rates of return. By publishing the weights, the FPSC can communicate clearly how it defines quality, leaving each company free to attain its desired target level of overall quality by whatever mixture of sub-standard and super-standard performance that is most efficient given its cost structure.

PROBLEM STATEMENT

The Florida Public Service Commission evaluates local telephone companies on 69 dimensions that are covered by either published or proposed rules mandating a specified standard of performance. For example, 95% of all calls should receive a dial tone within 3 seconds. Periodically, each company's performance relative to these standards is measured in service evaluation taking up to 6 weeks to complete. Exhibit 1 shows a summary of such an evaluation for the Florala telephone company.

EXHIBIT 1 -- Summary of Service Evaluation of Florala Telephone Company

<u>Category</u>	<u>Percent Rule/Order Requirement</u>	<u>Evaluation Results</u>	<u>Rule Satisfied</u>		<u>Exhibit Number</u>
			<u>Yes</u>	<u>No</u>	
a. Dial Tone Delay	95	99.7	X		1
b. Call Completions					
(1) Intra-Office	95	98.4	X		2
(2) Inter-Office	95	0.0	N/A		2
(3) EAS	95	98.7	X		2
(4) DDD-Intra-LATA	92	95.2	X		2
(5) DDD-Inter-LATA	90	(by carrier - next page)			2
ATT	90	97.5	X		2
Please refer to Attachment #1 for the full names of the listed IXC's.					
c. Answer Time					
(1) Operator Answer Time	90	96.0	X		3A
(2) Directory Assistance	90	92.6	X		3A
(3) Repair Service	90	98.0	X		3B
(4) Business Office	80	100.0	X		3C
d. Adequacy of Directory and Directory Assistance					
(1) Directory Service	100	100.0	X		4A
(2) New Numbers	100	100.0	X		4A
(3) Numbers in Directory	NP/99	100.0	Satisfactory		4B

NOTE: 'NP' as used on this and subsequent pages indicates "No specific percentage is specified in the Rule, Order or Statute". Target values chosen by staff represent established standards or practical and desirable objectives.

Exhibit 1 (Contd...)

<u>Category</u>	<u>Percent Rule/Order Requirement</u>	<u>Evaluation Results</u>	<u>Rule Satisfied</u>		<u>Exhibit Number</u>
			<u>Yes</u>	<u>No</u>	
e. Adequacy of Intercept Services					
(1) Changed Numbers	90	100.0	X		5
(2) Disconnected Service	80	100.0	X		5
(3) Vacation Disconnects	80	NA			5
(4) Vacant Numbers	80	100.0	X		5
(5) Disconnects Non-Pay	100	NA			5
f. Public Telephone Service					
A. Each Exchange, 1 Pay Station	100	100.0	X		6
B. (1) Serviceability	100	100.0	X		6
(2) H'cap/Hearing imp.	100	100.0	X		6
(3) Glass	NP/95	100.0	Satisfactory		6
(4) Door	NP/95	100.0	Satisfactory		6
(5) Level	NP/95	100.0	Satisfactory		6
(6) Wiring	NP/95	100.0	Satisfactory		6
(7) Cleanliness	95	100.0	X		6
(8) Lights	100	100.0	X		6
(9) Telephone Number	100	100.0	X		6
(10) Name or Logo	100	0.0	X		6
(11) Enclosure	NP/95	100.0	Satisfactory		6
(12) Dial Instructions	100	100.0	X		6
(13) Transmission	NP/95	75.0	Unsatisfac.		6
(14) Dialing	NP/95	75.0	Unsatisfac.		6
(15) Coin Return, Auto	100	100.0	X		6
(16) Coin Return, Opr.	NP/95	100.0	Satisfactory		6
(17) Opr. I.D. Coins	NP/95	100.0	Satisfactory		6
(18) Access LD's	100	100.0	X		6
(19) Ring-back, Opr.	NP/95	75.0	Unsatisfac.		6
(20) Coin Free, Operator	100	100.0	X		6
(21) Coin Free/Rtn. D.A.	100	100.0	X		6
(22) Coin Free, 911	100	100.0	X		6
(23) Coin Free/Rtn Repair	100	100.0	X		6
(24) Coin Free/Rtn Bus.Off	100	100.0	X		6
(25) Directories	100	100.0	X		6
(26) Directory Security	NP/95	100.0	Satisfactory		6
(27) Address/Location	100	100.0	X		6

NOTE: 'NP' as used on this and subsequent pages indicates 'No specific percentage is specified in the Rule, Order, or Statute'. Target values chosen by staff represent established standards or practical and desirable objectives.

Exhibit 1 (Contd...)

<u>Category</u>	<u>Percent Rule/Order Requirement</u>	<u>Evaluation Results</u>	<u>Rule Satisfied</u>		<u>Exhibit Number</u>
			<u>Yes</u>	<u>No</u>	
g. Toll Timing and Billing Accuracy	NP/97				7A & B
(1) DDD					
ATT		99.1	Satisfactory		7A
(2) Intra-LATA		100.01	Satisfactory		7A
(3) Credit Card ATT		100.0	Satisfactory		7B
(4) Directory Assistance		100.0	Satisfactory		7B
h. Incorrectly Dialed Calls	NP/95	100.0	Satisfactory		8
i. Availability of Service					
(1) 3-day Primary Service	90	100.0	X		9
(2) Appointments	90	100.0	X		9
j. 911 Service					
(1) Answer Time	95	100.0	X		10
(2) 911 Service	NP/100	100.0	Satisfactory		10
k. Power and Generators	100	100.0	X		11
l. Central Office					
(1) Scheduled Routine Program	NP/95	100.0	Satisfactory		12
(2) Frame	NP/95	100.0	Satisfactory		12
(3) Facilities	NP/95	100.0	Satisfactory		12
m. Repair Service					
(1) Restoral - Same Day	NP/80	93.0	Satisfactory		13
(2) Restoral - 24 Hours	95	96.5	X		13
(3) Appointments	95	100.0	X		13
(4) Rebates - Over 24 Hour	100	0.0	X		14
n. Test Numbers: 3-line Rotary per Central Office	100	0.0	X		15

Exhibit 1 (Contd...)

<u>Category</u>	<u>Percent Rule/Order Requirement</u>	<u>Evaluation Results</u>	<u>Rule Satisfied Yes No</u>	<u>Exhibit Number</u>	
o. Transmission: (Proposed Rules)					
(1) <u>Central Office</u>					
(a) Dial Tone Level	100	100.0	Satisfactory	16A	
(b) C. O. Loss	100	100.0	Satisfactory	16A	
(c) M. W. Frequency	100	100.0	Satisfactory	16A	
(d) C.O. Noise, Metallic	100	100.0	Satisfactory	16A	
(e) C.O. Noise, Impulse	100	0.0	Unsatisfactory	16A	
(2) <u>Subscriber Loops</u>	98	100.0	Satisfactory	16B	
(3) <u>IXC DDD</u>	(by carrier)			16C	
<u>IXC Name</u>	<u>Noise (Metallic)</u>	<u>Noise (Impulse)</u>	<u>Insertion Loss</u>	<u>Rule Satisfied</u>	<u>Exhibit No.</u>
ATT	7	344	3.2	Unsatisfactory	16C
p. Safety					
(1) Recent Installations					
(a) Recent Installations	NP/100		Satisfactory	17	
(b) Older Existing Loops	NP/92		Satisfactory	17	
(2) Safe Plant Conditions and Practices					
(a) From Service Evaluation	NP/100		Satisfactory	18	
(b) Within past 12 mths	NP/100		Satisfactory	18	
q. Periodic Reports					
(1) Rec'vd Complete/Timely	100	100.0	X	19	
(2) In Compliance of All Rules (From Report):					
(a) As shown by company			Unsatisfactory	19	
(b) Staff's Conclusion			Unsatisfactory	19	
(3) Accuracy:					
Reports vs. Service Eval.			Satisfactory	19	
r. Customer Service Complaints					
(1) Justified/1000 lines		Exceeds the State Average		20	

Exhibit 1 (Contd...)

s. Additional Observations, Suggestions and Comments: Appendix 'B'

No response is required for categories meeting the rules or where a rating of 'satisfactory' is shown. Where rules are not being satisfied or the results were unsatisfactory, we request you respond within thirty days from the date of this letter, outlining the action taken to correct. If you have any questions, please contact Frank Williamson at (904) 488-1280.

Sincerely,

Walter D'Haeseleer
Director
Division of Communications

Attachments

cc: William Talbott
Richard Tudor
Alan Taylor

The results of these service evaluations are used in two primary ways. First, in the short run, the evaluated company is directed to take specific steps to meet standards that are failed in the service evaluation. Second, in the longer term, the company's record of overall quality provides input in the subsequent rate-hearing for that company. Inferior quality can be sanctioned by lowering allowed rates of return or by disallowing certain items of expense for inclusion in the rate base. Conversely, superior quality can be rewarded using similar tools. Under alternatives to rate-of-return, rate-base regulation, Public Service Commissions can allow caps on prices that may be charged to customers to be tied to overall quality (Buzas, Lynch, and Berg 1989; Noam 1989).

The very large number of standards prescribed by FPSC rules reflects the greater activism of the FPSC in comparison with other commissions in other states, arguably leading to higher service quality in comparison with other states. While facilitating the short-term performance monitoring described above, the large number of rules makes longer-term assessments of overall quality especially difficult. This may be one reason for the historical lack of activism of the FPSC in punishing inferior quality and rewarding superior quality in rate hearings.

Negative Effects of Task Complexity on Expert Decision Making

Consider the problem of an FPSC commissioner faced with the task of assessing the overall quality of service provided by the firm shown in Exhibit 1. This is clearly an extraordinarily difficult task, mainly due to the very large amount of information that must be processed and distilled. An extensive literature exists in behavioral decision making that shows that when decision makers are given information on more and more dimensions relevant to some

judgment, three deleterious changes in their decision making result (Buzas, Lynch, and Berg 1989, in press).

First, they become more inconsistent in their decision making. That is, the weights that they attach to various cues change from case to case, and as a consequence they become more prone to rendering very different decisions when faced with two highly similar cases to evaluate (Einhorn 1971, Scott and Wright 1976; Ogilve and Schmitt 1979. This may result from the fact that decision makers often use a smaller percentage of the available information as the number of dimensions increases (Jacoby, Speller, and Kohn 1974; Payne 1976). Part of this stems from a tendency as information increases to "manage by exception." For example, the reader judging the firm shown in Exhibit 1 may have focussed on only those dimensions where standards were failed. This leads to inconsistency, because different dimensions receive weight in evaluations in different cases, because different standards are failed from case to case.

Second, decision makers become more confident of the accuracy of their impressions (Payne 1982) as the number of dimensions of information increases, even when the added information is normatively irrelevant (Ronis and Yates 1987). This is ironic given the evidence that decision quality and consistency decrease with increasing amounts of information, but it makes sense given that decision makers believe that they have "all the facts" with more information.

Third, as the number of dimensions of information increases, decision makers are driven to reduce the mental complexity of their decision task by adopting "simplifying heuristics" -- i.e., decision strategies that they would not follow under less stressful conditions, but that require less cognitive effort than a strategy that fully processes all of the available information. (Biggs et al. 1985; Payne 1980; cf. Einhorn 1971 and Payne 1976).

Simplifying Heuristics

For example, a regulator looking at a report like that shown in Exhibit 1 might follow one of two simplifying heuristics that involve "managing by exception." He or she could say that any firm meeting all standards is providing "satisfactory" quality, while any firm failing one or more standards is providing "unsatisfactory" quality. The problem with this is that, as the number of standards grows, the likelihood of meeting all standards shrinks to zero. In fact, no company has met all standards in all the evaluations of which the author is aware. Second, the regulator might simply count the number of standards failed, reasoning that firms failing fewer standards must be doing a better job than those failing more. There are several problems with this strategy. It ignores differences in the importance of the various dimensions, whether a standard was failed by a little or a lot, and the degree to which the company might have exceeded other, more important standards.

To see the fallacy of both strategies, consider three firms, A, B, and C, and their scores on three different dimensions of quality: Dial Tone Delay, EAS Call Completions, and Cleanliness of Public Telephones. All of these have FPSC standards of 95%.

COMPANY A

Dial Tone Delay	95%
EAS Call Completions	95%
Cleanliness of Public Telephones	95%

COMPANY B

Dial Tone Delay	96%
EAS Call Completions	96%
Cleanliness of Public Telephones	90%

COMPANY C

Dial Tone Delay	99%
EAS Call Completions	94%
Cleanliness of Public Telephones	93%

Because Company A meets all standards, if we simply count the number of standards passed as an index of quality, Company A would be rated as providing the best service of the three companies. Company B fails one standard, and Company C fails two, so that Company B would be rated as providing better service than C under the same simplifying heuristic.

Most experts, however, would say that they would prefer Company B to Company A. Dial Tone Delay and EAS Call Completions are so much more important than Cleanliness of Public Telephones that the 1 point advantage of B over A on each of the former dimensions outweighs the fact that B failed the latter standard. Moreover, most experts would prefer C to B, despite the fact that C failed two standards and B only one. Because C exceeded the very important Dial Tone Delay standard by 4%, this outweighs failing the somewhat less important EAS standard by 1% and the much less important Cleanliness of Public Telephones standard by 2%.

Implications for Regulation

Thus, when given only these three dimensions to consider so that the decision maker is not overloaded with information, the ordering of quality ratings is exactly opposite to that which would emerge if one applied the simplifying heuristic of counting the number of passed standards. I asserted above that the counting strategy is something expert regulators might be driven to when faced with 69 dimensions to integrate. The large number of dimensions makes it very difficult to keep in mind the relative importance of the various

dimensions, and the degree to which various standards have been passed or failed.

The discussion to this point has focussed on how the large number of dimensions makes it difficult to assess overall quality as an input to more long-run decisions about what rate of return to allow the evaluated company. Our example, however, also points to important logical inconsistencies in how the short-run performance monitoring operations of the FPSC are carried out. Note that Company A would receive a clean bill of health, while the latter two companies would be directed to take specific steps to remedy their deficiencies, despite the fact that FPSC experts concur that Companies B and C are providing higher overall quality than A.

The approach advocated in this report is that the FPSC should direct the evaluated company to take specific steps when its overall level of quality dips below the level that would be associated with meeting all standards exactly (or some alternative target overall level of quality). We will call this level of overall quality Q^* . Under this logic, both Companies B and C would not be directed to take remedial steps, because their overall quality levels would be judged to exceed Q^* .

Need for a Weighted Index of Overall Telephone Service Quality

The considerations above point to a need for an objective, numerical index of overall telephone service quality. Such an index would solve three deficiencies of unaided intuitive expert judgment. Unlike unaided intuitive judgment, the validity of this index would not decline when many dimensions were simultaneously considered. Second, it would be consistent in the weights applied to various dimensions, rather than giving weight only to below standard dimensions. Third, it would make use of information in a way that it is

consistent with experts' judgments of quality when they are not burdened by too much information. That is, it would be sensitive to differences in the relative importance of the 69 dimensions of quality, and to the degree to which each standard is passed or failed.

Measuring Importance Weights

The method used to develop an index with these properties is described below. It would seem that the most obvious approach to determining the relative weights to be placed on various dimensions would be to ask experts to rate the importance of the 69 dimensions directly. Buzas, Lynch, and Berg (1989) explain that this approach is inadequate, because it falsely assumes that people have sufficient insight into their own evaluation processes to produce valid ratings of importance. However, research shows that the importance weights that people report differ dramatically from what they use (Slovic, Fleisner, and Bauman 1972). The insight that does exist declines as the number of attributes increases (Scott and Wright 1976). With 69 rules, the self-insight of any individual can be expected to be slight. Second, there are several ways to ask people to rate importance. Unfortunately, these methods produce very different results (Jaccard, Brinberg, and Ackerman 1986). Third, respondents rating the relative importance of dimensions tend to confuse the issue of the weight applied to a 1%-point change in a criterion with the issue of how much the objects to be rated vary on that dimension (Lynch 1985; Myers and Alpert 1977). Finally, importance ratings tend to be nearly equal across dimensions that can be shown by behavioral methods to differ widely in the effects of 1%-point changes on them (Slovic & Lichtenstien, 1971). Thus, direct ratings of importance tend fail to discriminate effectively between the most and least important attributes.

The alternative approach used here for determining the weights is described below.

METHODOLOGY

Division of the 69 Rules into Rule Clusters

The 69 rules were first divided into two groups. The first group of 40 pertained to dimensions of residential service, and the second group of 29 pertained to public telephone service. Because only 1 of the 10 experts within the DGS had extensive knowledge of public telephone service quality, the 29 rules covering pay phones were broken out into a separate questionnaire that was completed only by the 10 FPSC experts plus the pay phone expert from the DGS.

Residential Service Questionnaire

The questionnaire covering the 40 dimensions of residential service was comprised of 10 smaller questionnaires. The first 9 of these further divided those 40 rules into nine major "rule clusters:"

- Questionnaire 1: Dial Tone Delay;
- Questionnaire 2: Call Completions and Billing;
- Questionnaire 3: Answer Time;
- Questionnaire 4: Adequacy of Directory and Directory Assistance;
- Questionnaire 5: Intercept Services;
- Questionnaire 6: Central Office;
- Questionnaire 7: Installation and Repair Services;
- Questionnaire 8: Transmission;
- Questionnaire 9: Customer Complaints;
- Questionnaire 10: Overall Evaluation of Residential Service.

These groupings were formed by beginning with the groupings currently used by the FPSC in its service evaluations, as shown in Exhibit 1, then combining related rules in order to minimize the number of clusters, subject to the constraint that no single cluster included more than 8 rules. The clusters and the rules included within each can be found in Exhibit 2.

EXHIBIT 2: Rule Clusters for 40 FPSC Rules for Residential Service

Rule Cluster 1: Dial Tone Delay

1. Dial Tone Delay: 95% of calls receive dial tone in 3 seconds

Rule Cluster 2: Call Completions And Billing

2. Intra-office: 95% of calls completed
3. Inter-office: 95% of calls completed
4. EAS: 95% of calls completed
5. Intra-LATA DDD: 95% of calls completed
6. Inter-LATA DDD: 90% of calls completed by your provider
7. 911 Service: 100% of calls delivered to the 911 authority
8. Billing Accuracy: 97% of Intra-LATA calls are timed accurately

Rule Cluster 3: Answer Time

9. Operator Answer Time: 90% of calls answered in 10 seconds
10. Directory Assistance: 90% of calls answered in 20 seconds
11. Repair Service: 90% of calls answered in 20 seconds
12. Business Office: 80% of calls answered in 20 seconds

Rule Cluster 4: Directory And Directory Assistance

13. Directory Service: 100% of the 18 rules about directory are met.
14. New Numbers: 100% of all new numbers are available in 48 hours.
15. Numbers in Directory: 99% of all numbers in directory can be verified by the directory assistance operator.
16. Billing Accuracy: 97% of calls for directory assistance are billed correctly.

Rule Cluster 5: Intercept Services

17. Changed Numbers: 90% of calls answered in 20 seconds
18. Disconnected Service: 80% of calls answered in 20 seconds
19. Vacation Disconnects: 80% of calls answered in 20 seconds
20. Vacant Numbers: 80% of calls answered in 20 seconds
21. Disconnects Non-Pay: 100% of calls answered in 20 seconds
22. Incorrectly Dialed Calls: 95% of 7 error types intercepted. An exchange where all 7 types of errors are intercepted is in 100% compliance.
23. Power and Generators: 100% An exchange with backup power or a generator is in 100% compliance.

Exhibit 2 (Contd...)

Rule Cluster 6: Central Office

- | | | | |
|-----|----------------------------|-----|---|
| 24. | Scheduled Routine Program: | 95% | An exchange on a Scheduled Routine Maintenance Program is in 100% compliance. One without such a program scores 0%. |
| 25. | Frame: | 95% | A frame in satisfactory condition is in 100% compliance; otherwise, 0%. |
| 26. | Facilities: | 95% | An exchange facility in satisfactory condition is in 100% compliance; otherwise, 0%. |

Rule Cluster 7: Installation And Repair Services

- | | | | |
|-----|-------------------------------|-----|--|
| 27. | Same Day Restoral: | 80% | restored on same day |
| 28. | 24 Hour Restoral: | 95% | restored within 24 hours |
| 29. | Repair Appointments: | 95% | of appointments kept |
| 30. | Rebates - Over 24 hour: | | Provides rebates 100% of time |
| 31. | 3-Day Primary Service: | | 90% of service installations must occur within 3-days of the request for service |
| 32. | Primary Service Appointments: | 90% | of appointments kept |

Rule Cluster 8: Transmission

- | | | | |
|-----|---------------------------------|------|--|
| 33. | Dial Tone Level: | 100% | An exchange with Dial Tone Level between -5 to -22 dBm is in 100% compliance. |
| 34. | Central Office Loss: | 100% | An exchange with C.O. Loss of 0 to -2.5 dB is in 100% compliance. |
| 35. | M.W. Frequency: | 100% | An exchange operating at a MW Frequency between 994 to 1014 Hz is in 100% compliance. |
| 36. | Central Office Noise, Metallic: | 100% | An exchange operating with C.O. Noise, Metallic, of 20 dBm or less is in 100% compliance. |
| 37. | Central Office Noise, Impulse: | 100% | An exchange operating C.O. Noise, Impulse, of no more than 5 counts above 59 dBm in 5 minutes is in 100% compliance. |
| 38. | Test Numbers: | 100% | An exchange with 3-line rotary test numbers is in 100% compliance. |
| 39. | Subscriber Loops: | 98% | of subscriber loops have acceptable transmission performance. |

Rule Cluster 9: Customer Complaints

- | | | | |
|-----|----------------------|--|---|
| 40. | Customer Complaints: | | The average number of complaints per 1000 customers for the entire State of Florida is 0.074. |
|-----|----------------------|--|---|

Procedures Used

Determination of within-cluster weights. For each rule cluster shown in Exhibit 2, experts within the FPSC and Department of General Services were asked to fill out a separate short questionnaire, rating profiles of companies that had varying patterns of high and low scores on the dimensions within that cluster. They were asked to rate these profiles from the perspective of a knowledgeable residential customer.

In each questionnaire, experts were asked to make an overall rating of each company on a scale from 1 (worst possible performance) to 10 (best possible performance) on dimensions within that cluster. Each dimension within a cluster took on one of three levels in the profile companies rated. Some companies exactly met the standard, some had below-standard scores matching the worst performances in recent FPSC records, and some had above-standard scores matching the best performances in recent FPSC records. Dimensions with a standard of 100% included only at-standard and below-standard levels. Profiles were constructed such that the scores on each dimension were uncorrelated with the scores on the other dimensions. Experts within the FPSC and the DGS were given slightly different versions of Residential Service Questionnaires 2-8, with the FPSC versions made slightly longer to allow more stable estimation of the weights, and to allow certain analyses to test the validity of the assumptions underlying the measurement approach used. Copies of the questionnaires used appear in this report as Appendices A (FPSC version) and B (DGS version).

By analyzing how differences in profile ratings covaried with the levels were present for each attribute, it was possible to estimate the effect on these ratings of a 1%-point increase above the standard and the effect of a 1%-point increase below that same standard. For example, the rule for Intra-Office Call

Completions is 95%. In Questionnaire 2, covering Call Completions and Billing, the companies rated had levels of Intra-Office Call Completions of either 100%, 95%, or 94%. Suppose that, for a given subject, the average ratings of profiles with these levels were 7, 5, and 4, respectively, on a scale from 1 to 10. The weight of a 1%-point change above the standard would be calculated as $(7-5)/(100-95) = .4$, while the weight of a 1%-point change below the standard would be $(5-4)/(95-94) = 1.0$.

Similar calculations for each other dimension within the cluster allowed a measurement of the relative weights of various dimensions within the cluster, with a separate weight for above-standard and below standard performance on each dimension. This technique for measuring importance weights is called "full profile conjoint analysis" (Green and Srinivasan 1978, 1990). Because no more than 8 dimensions had to be integrated concurrently, this task would not prompt the use of the simplifying heuristics identified earlier.

Linking task to determine between-cluster weights. The procedures described above are sufficient to determine the relative sizes of weights for above-standard and below-standard performance on dimensions occurring within the same rule cluster. However, they are insufficient to determine the comparative sizes of weights in different clusters, because getting a 9 out of 10 on Call Completions and Billing may be more important than getting a 9 out of 10 on, e.g., Transmission.

To determine how 1 to 10 ratings on each rule cluster would combine to affect overall quality assessments, a "linking task" was included in Questionnaire 10. Here, experts were asked to rate the overall performance of 16 telephone companies characterized by varying patterns of high (10, 9, or 8) and low (5, 4, or 3) scores on the 9 rule clusters (Dial Tone Delay, Call

Completions and Billing, etc.). In addition, the profiles varied in the price of basic monthly service, with prices given as either \$12 or \$6. The profiles were constructed so that scores on each of these 10 dimensions were uncorrelated with each other across the 16 companies. Experts were asked to rate each company on a scale from 1 (Very Bad Overall Performance) to 10 (Very Good Overall Performance).

By analyzing how differences in profile ratings covaried with the levels were present for each rule cluster, it was possible to estimate the effect on overall performance ratings of a 1-point increase in any given cluster (Louviere 1984). For example, companies rated in Questionnaire 10 had scores of either 10 or 4 on Call Completions and Billing. Suppose that, for a given subject, the average overall performance ratings of profiles with these levels were 7 and 5, respectively, on a scale from 1 to 10. The weight of a 1-point change on Call Completions and Billing would be calculated as $(7-5)/(10-4) = .333$. Similar calculations for each other rule cluster allowed a measurement of the relative between-cluster weights of the 9 clusters, as well as a trade-off of these weights against price.

Determining the weights of individual rules on overall quality of residential service. To determine the weight of a 1% point change in any one of the 40 dimensions of residential service on overall residential service quality, simply multiple to weight of a 1% point change on that dimension on 1 to 10 cluster ratings times the weight of a 1 point change on that cluster on overall residential service quality ratings (Louviere 1984). To follow along with the example given above, recall that for Intra-Office Call Completions had a standard of 95%. In our example, the weight of a 1%-point change above the standard was calculated from Questionnaire 2 as $(7-5)/(100-95) = .4$, while the

weight of a 1%-point change below the standard was $(5-4)/(95-94) = 1.0$. These within cluster weights would then be multiplied times the weight of a 1-point change in Call Completions and Billing on Overall Evaluations of Residential Service from Questionnaire 10, calculated as $(7-5)/(10-4) = .333$. Thus, in this illustrative example, the effect on overall quality of residential service of a 1%-point change in Call Completions and Billing would be $.4 * .333 = .1333$ for scores above the 95% standard. A 1%-point change below that standard would have a weight of $1.0 * .333 = .333$. Similar procedures were used to calculate weights for all 40 dimensions for each of the 20 experts within the FPSC and the DGS.

Pay Phone Questionnaire

Recall that because only 1 of the 10 experts within the DGS had extensive knowledge of public telephone service quality, the 29 rules covering pay phones were broken out into a separate questionnaire that was completed only by the 10 FPSC experts plus the pay phone expert from the DGS.

The general structure of the Public Telephone Service Survey covering the 29 pay phone rules (see Appendix C) was very similar to that described for residential service. The questionnaire was comprised of 7 smaller questionnaires. The first 5 of these further divided those 29 rules into five major "rule clusters."

Pay Phone Questionnaire 1:	Functioning: Outgoing Calls;
Pay Phone Questionnaire 2:	Functioning: Incoming Calls and Conversation;
Pay Phone Questionnaire 3:	Enclosure of Public Telephones;
Pay Phone Questionnaire 4:	Coin Operations;
Pay Phone Questionnaire 5:	Directory and Directory Security;
Pay Phone Questionnaire 6:	Overall Evaluation of Public Telephone Service;
Pay Phone Questionnaire 7:	Overall Evaluation of Local Phones.

These clusters and the rules included in each are shown in Exhibit 3.

EXHIBIT 3: Rule Clusters for 29 PFSC Rules for Public Telephones

Pay Phone Rule Cluster 1: Functioning of Public
Telephones: Outgoing Calls

- | | | |
|----|---------------------------------------|---------------------------|
| 1. | At Least One Pay Phone per Exchange: | 100% of exchanges |
| 2. | Address/Location: | 100% of public telephones |
| 3. | Serviceability: | 100% of public telephones |
| 4. | Dial Instructions: | 100% of public telephones |
| 5. | Access to All Long Distance Carriers: | 100% of public telephones |
| 6. | Dialing: | 95% of public telephones |
| 7. | Operator I.D. Coins: | 95% of public telephones |

Pay Phone Rule Cluster 2: Functioning of Public
Telephones: Incoming Calls and Conversation

- | | | |
|-----|-------------------------|---------------------------|
| 8. | Telephone Numbers: | 100% of public telephones |
| 9. | Receives Calls: | 100% of public telephones |
| 10. | Hearing Aid Compatible: | 100% of public telephones |
| 11. | Transmission: | 95% of public telephones |

Pay Phone Rule Cluster 3: Enclosure of Public Telephones

- | | | |
|-----|-------------------------------|---------------------------|
| 12. | Accessibility to Handicapped: | 100% of public telephones |
| 13. | Cleanliness: | 95% of public telephones |
| 14. | Lights: | 100% of public telephones |
| 15. | Glass: | 95% of public telephones |
| 16. | Doors: | 95% of public telephones |
| 17. | Level: | 95% of public telephones |
| 18. | Wiring: | 95% of public telephones |
| 19. | Name or Logo: | 100% of public telephones |

Pay Phone Rule Cluster 4: Coin Operations of Public Telephones

- | | | |
|-----|--|---------------------------|
| 20. | Pre-pay: | 100% of public telephones |
| 21. | Coin Return Automatic: | 100% of public telephones |
| 22. | Coin Return Operator: | 100% of public telephones |
| 23. | Coin Free Access - Operator: | 100% of public telephones |
| 24. | Coin Free Access - 911: | 100% of public telephones |
| 25. | Coin Free Access - Directory Assistance: | 100% of public telephones |
| 26. | Coin Free Access - Repair Service: | 100% of public telephones |
| 27. | Coin Free Access - Business Office: | 100% of public telephones |

Pay Phone Rule Cluster 5: Directory And
Directory Security of Public Telephones

- | | | |
|-----|---------------------|------|
| 28. | Directory: | 100% |
| 29. | Directory Security: | 95% |

The method used to determine weights within this questionnaire was exactly the same as in the residential telephone service questionnaire, with one exception. As before, first within-cluster weights of 1%-point changes were calculated for above and below standard performance on each dimension within each of the five rule clusters (from Pay Phone Questionnaires 1-5). Then, in Pay Phone Questionnaire 6, experts were shown companies with varying patterns of high (9 or 10) and low (3, 4, or 6) scores on the five pay phone clusters, and asked to rate "Overall Evaluation of Public Telephone Service" on a scale from 1 to 10. This allowed the derivation of between-cluster weights of the effect of 1-point changes in (1 to 10) cluster ratings on Overall Evaluations of Public Telephone Service. By multiplying the within-cluster weight of a 1% point change on each of the 29 dimensions of public telephone service times the between-cluster weight for that cluster, we calculated the weight of a 1%-point change on each of the 29 dimensions on Overall Evaluations of Public Telephone Service.

The one change from the Residential Telephone Service Questionnaire was that we still needed a way to compare the weights of 1%-point changes on dimensions of public telephone service with the weights of 1%-point changes in residential service. To accomplish this, Pay Phone Questionnaire 7 asked experts to rate the "Overall Evaluation of Local Phones" for companies that were described by varying patterns of 1 to 10 cluster scores on the 9 clusters from Overall Quality of Residential Service. This questionnaire was similar to Residential Service Questionnaire 10, except that the profiles varied in terms of their 1 to 10 scores on Public Telephone Service rather than on the price of basic monthly service. This allowed us to estimate the effect of 1-point changes on Public Telephone Service, and to compare this to the effect of

1-point changes in the clusters of residential service.

The cluster weights for the 9 Residential Service clusters that emerged from an analysis of each expert's data from this Pay Phone Questionnaire 7 correlated closely with the weights derived from Residential Service Questionnaire 10. Thus, we recalculated the weight of 1% point changes in dimensions of residential service quality using these new cluster weights from Pay Phone Questionnaire 7. To continue the example given earlier, suppose that the expert's weight on Call Completions and Billing was .3 in Pay Phone Questionnaire 7, rather than .333 as in Residential Service Questionnaire 10. In this illustrative example, the effect on overall quality of local service of a 1%-point change in Call Completions and Billing would be .4 (Derived from Residential Questionnaire 2) * .300 (Derived from Pay Phone Questionnaire 7 = .120 for scores above the 95% standard. Similar procedures were used to calculate weights for all 40 dimensions for each of the 10 experts within the FPSC and the 1 DGS expert who complete the Public Telephone Service Questionnaire.

Weights for Pay Phone dimensions were calculated similarly, but with one additional step. Suppose that on Pay Phone Questionnaire 1, 1% change below the standard for Dialing Instructions produced a .5 point change on 1 to 10 ratings of Functioning of Public Telephones: Outgoing Calls. Further, assume that on Pay Phone Questionnaire 6, a 1 point change in 1 to 10 ratings of Functioning of Public Telephones produced a .7 change in 1 to 10 ratings of the Overall Evaluation of Public Telephones. Finally, on Pay Phone Questionnaire 7, a 1-point change in Overall Public Telephone ratings produced a .4 change in Overall Evaluations of Local Telephone Service.

In this case, the weight of a 1%-point change in Dialing Instructions on

Overall Evaluations of Local Telephone Service would be $.5 * .7 * .4 = .14$. In other words, three numbers are multiplied together to determine weights for each of the 29 dimensions of public telephone service, while only two numbers are multiplied to determine weights of 1% point changes on the 40 dimensions of residential telephone service.

RESULTS: RESIDENTIAL TELEPHONE SERVICE QUESTIONNAIRE

As noted above, the Residential Telephone Service questionnaires were distributed to ten staff members in the Telecommunications division of the Florida Public Service Commission, and 10 experts in the Division of Communications of the Department of General Services of the State of Florida.

Weights of 1%-Point Changes: Residential Telephone Service

For each expert, the effect of a 1%-point change was calculated separately for each of the 40 dimensions. For dimensions with standards below 100%, effects of 1%-point changes were calculated separately for changes above the standard and for changes below the standard. This yielded a total of 62 weights. The mean values of these weights are shown in Exhibit 4.¹ These calculated weights were then submitted to a split plot analysis of variance, where Weight Estimated was treated as a 62-level repeated measures factor, and Source (FPSC vs. DGS) was treated as a 2 level, between subjects factor.

¹ Exhibit 4 also includes estimates of the dollar value of 1%-point changes along each dimension. These will be discussed later in this report.

EXHIBIT 4: Weights And Dollar Values of 1%-Point Changes

Criterion	PSC Weight From Q10	\$ Value 1%-Point Change	DGS Weight From Q10	\$ Value 1%-Point Change	PSC+DGS Weight From Q10	\$ Value 1%-Point Change
1. Dial Tone Del +	0.0984	\$1.69	0.1234	\$0.56	0.1110	\$0.79
Dial Tone Del -	0.2344	\$4.02	0.1922	\$0.87	0.2133	\$1.52
2. Call Completion & Billing						
Intra-Office +	0.0098	\$0.17	0.0133	\$0.06	0.0116	\$0.08
Intra-Office -	0.1539	\$2.64	0.0712	\$0.32	0.1126	\$0.80
Inter-Office +	0.0057	\$0.10	0.0193	\$0.09	0.0125	\$0.09
Inter-Office -	0.0995	\$1.71	0.0609	\$0.27	0.0802	\$0.57
EAS +	0.0027	\$0.05	0.0057	\$0.03	0.0042	\$0.03
EAS -	0.0433	\$0.74	0.0303	\$0.14	0.0368	\$0.26
Intra-Lata DDD +	0.0093	\$0.16	0.0122	\$0.05	0.0107	\$0.08
Intra-Lata DDD -	0.0318	\$0.54	0.0106	\$0.05	0.0212	\$0.15
Inter-Lata DDD +	0.0072	\$0.12	0.0105	\$0.05	0.0089	\$0.06
Inter-Lata DDD -	0.0266	\$0.46	0.0086	\$0.04	0.0176	\$0.13
911 Service -	0.1591	\$2.73	0.1023	\$0.46	0.1307	\$0.93
Billing Accuracy +	0.0221	\$0.38	0.0314	\$0.14	0.0267	\$0.19
Billing Accuracy -	0.1060	\$1.82	0.1082	\$0.49	0.1071	\$0.76
3. Answer Time						
Operator +	0.0045	\$0.08	0.0107	\$0.05	0.0076	\$0.05
Operator -	0.0444	\$0.76	0.0204	\$0.09	0.0324	\$0.23
Dir. Assist +	0.0036	\$0.06	0.0047	\$0.02	0.0041	\$0.03
Dir. Assist -	0.0333	\$0.57	0.0833	\$0.38	0.0583	\$0.42
Repair Service +	0.0029	\$0.05	0.0097	\$0.04	0.0063	\$0.04
Repair Service -	0.0051	\$0.09	-0.0007	(\$0.00)	0.0022	\$0.02
Bus. Office +	0.0029	\$0.05	0.0042	\$0.02	0.0036	\$0.03
Bus. Office -	0.0079	\$0.14	0.0081	\$0.04	0.0080	\$0.06
4. Directory						
Dir. Service -	0.0134	\$0.23	0.0072	\$0.03	0.0103	\$0.07
New Numbers -	0.0065	\$0.11	0.0064	\$0.03	0.0065	\$0.05
Num. in Dir. +	0.0353	\$0.60	0.0142	\$0.06	0.0247	\$0.18
Num. in Dir. -	0.0872	\$1.50	0.0354	\$0.16	0.0613	\$0.44
Billing Accuracy +	0.0493	\$0.84	0.0225	\$0.10	0.0359	\$0.26
Billing Accuracy -	0.0289	\$0.50	-0.0375	(\$0.17)	-0.0043	(\$0.03)
5. Intercept Services						
Changed Num. +	0.0019	\$0.03	0.0031	\$0.01	0.0025	\$0.02
Changed Num. -	-0.0044	(\$0.08)	0.0005	\$0.00	-0.0020	(\$0.01)
Disconnected +	0.0013	\$0.02	0.0027	\$0.01	0.0020	\$0.01
Disconnected -	-0.0017	(\$0.03)	0.0091	\$0.04	0.0037	\$0.03
Vacation +	0.0016	\$0.03	0.0036	\$0.02	0.0026	\$0.02
Vacation -	-0.0049	(\$0.08)	-0.0031	(\$0.01)	-0.0040	(\$0.03)

Exhibit 4 (Contd...)

Criterion	PSC Weight From Q10	\$ Value 1%-Point Change	DGS Weight From Q10	\$ Value 1%-Point Change	PSC+DGS Weight From Q10	\$ Value 1%-Point Change
Vacant +	0.0003	\$0.01	0.0030	\$0.01	0.0017	\$0.01
Vacant -	0.0080	\$0.14	0.0051	\$0.02	0.0065	\$0.05
Non-Pay -	0.0073	\$0.13	0.0115	\$0.05	0.0094	\$0.07
Incor Dialed +	0.0031	\$0.05	0.0047	\$0.02	0.0039	\$0.03
Incor Dialed -	0.0031	\$0.05	0.0047	\$0.02	0.0039	\$0.03
6. Central Office						
Power & Gener. -	0.0020	\$0.03	0.0011	\$0.01	0.0016	\$0.01
Sched. Routine -	0.0018	\$0.03	0.0002	\$0.00	0.0010	\$0.01
Frame -	0.0015	\$0.03	0.0009	\$0.00	0.0012	\$0.01
Facilities -	0.0016	\$0.03	0.0015	\$0.01	0.0016	\$0.01
7. Installation & Repair Service						
Same Day Rest +	0.0019	\$0.03	0.0037	\$0.02	0.0028	\$0.02
Same Day Rest. -	0.0048	\$0.08	0.0084	\$0.04	0.0066	\$0.05
24 Hour Restoral +	0.0081	\$0.14	0.0183	\$0.08	0.0132	\$0.09
24 Hour Restoral -	0.0395	\$0.68	-0.0010	(\$0.00)	0.0193	\$0.14
Repair Appts. +	0.0001	\$0.00	0.0095	\$0.04	0.0048	\$0.03
Repair Appts. -	0.0086	\$0.15	0.0040	\$0.02	0.0063	\$0.05
Reb. Over 24 Hour -	0.0020	\$0.03	0.0006	\$0.00	0.0013	\$0.01
3 Day Primary +	0.0044	\$0.07	0.0025	\$0.01	0.0034	\$0.02
3 Day Primary -	0.0072	\$0.12	0.0033	\$0.01	0.0052	\$0.04
Prim Serv Appt +	-0.0017	(\$0.03)	0.0078	\$0.04	0.0030	\$0.02
Prim Serv Appt -	0.0354	\$0.61	0.0143	\$0.06	0.0249	\$0.18
8. Transmission						
Dial Tone Lev -	0.0008	\$0.01	0.0017	\$0.01	0.0012	\$0.01
C. O. Loss -	0.0008	\$0.01	0.0013	\$0.01	0.0010	\$0.01
M. W. Frequency -	0.0008	\$0.01	0.0011	\$0.01	0.0010	\$0.01
C. O. Noise Met -	0.0009	\$0.02	0.0014	\$0.01	0.0012	\$0.01
C. O. Noise Imp -	0.0009	\$0.01	0.0009	\$0.00	0.0009	\$0.01
Test Numbers -	0.0008	\$0.01	0.0007	\$0.00	0.0008	\$0.01
Subscr Loops +	-0.0035	(\$0.06)	0.0213	\$0.10	0.0089	\$0.06
Subscr Loops -	0.0226	\$0.39	0.0309	\$0.14	0.0267	\$0.19
9. Cust Complaint +	-0.8333	(\$14.29)	-1.3068	(\$5.89)	-1.0701	(\$7.64)
Cust Complaint -	-0.3902	(\$6.69)	-0.0202	(\$0.09)	-0.2052	(\$1.46)
10. Price +	-0.0583		-0.2219		-0.1401	

Tests for significant differences in mean weights between FPSC & DGS. The test for Weight Estimated was highly statistically significant ($F(61,1098) = 6.53$, $p < .0001$), meaning that the 62 weights were very different from each other.² The relative magnitudes of these 62 weights did not differ significantly between the FPSC and the DGS experts ($F(61,1068) = 0.50$, $p > .999$, showing that the two groups agreed closely in their weights. Another measure of this agreement was that the correlation between the mean weights from the two groups was $r = .88$, where $r = 1.0$ indicates perfect agreement.

Tests for differences between the weight of a 1%-point change above versus below standards. A second analysis included only the 23 dimensions in the original set of 40 that had standards below 100%. For these dimensions, it was possible to measure whether the weight of a 1%-point change above the standard was different from the weight of a 1%-point change below the same standard. In this analysis, Dimension was treated as a 23-level repeated measures factor, Above vs. Below was treated as a 2 level repeated measures factor, and Source (FPSC vs. DGS) was treated as a 2 level between subjects factor.

Results showed that, averaging across the 23 dimensions, weights were significantly larger for changes below the standards than for corresponding changes above the standard ($F(1,18) = 7.84$, $p < .02$). There were significant differences among the 23 dimensions in the degree to which the below-standard weight exceeded its above-standard counterpart ($F(22,396) = 2.93$, $p < .0001$). However, there were no significant disagreements between the FPSC and the DGS in

² It should be noted that weights for Customer Complaints and Price of Basic Monthly Service were not included in this analysis or the next two reported below. Neither weight reflects the effect of a 1%-point change, as was true for all dimensions included in these analyses. The weights for Customer Complaints show the effect of an increase of 1 justified customer complaint per 100 lines - a very large change by industry standards. The weight for Price shows the effect of a \$1 increase in price.

either of these trends ($p > .25$ for the first trend, and $p > .98$ for the second trend). This analysis supports the wisdom of estimating separate above-standard versus below standard weights for each dimension, which was one of the major motivations for conducting the current study.

Reliability of the scale of weights: tests for agreement in relative weights among individuals in each group. The "reliability" of the weights measures the proportion of variance in the observed 62 mean weights accounted for by variance in the "true" 62 weights that would emerge if we were to measure and average the weights of the complete population of experts. Thus, reliability ranges from 0 to 1. If differences found among the average weights assigned to the 62 different weights are large relative to comparable weight differences among individual experts, reliability will approach 1 even with a relatively small sample as shown here.³

In this analysis, the reliability of the weights was .85, which is considered very reliable by accepted standards (Nunnally 1967). However, it should be noted that in the previous study conducted for the FPSC, reliability was .96. Within the FPSC, there was more disagreement in the weights assigned than was found in previous studies, and within the DGS, disagreements were slightly larger than had been found in past surveys of experts employed by the regulated telephone companies. It is not clear what the reason is for the lower reliability in the current survey. However, supplementary analyses are available from the author that identify which experts exhibited very low agreement with their colleagues.

This lower reliability can also be seen in the weights estimated for various dimensions. Several of the less important dimensions had weights that

³ See Buzas, Lynch, and Berg, 1989, for the exact formula.

were actually negative, though in no case did these differ significantly from zero. These weights imply that quality would actually be rated as (trivially) higher the lower scores were on these dimensions. It is recommended that in application of the weighted index, these negative weights be arbitrarily set to some trivially small positive number (.e.g, .000001).

Dollar value attached to 1%-point improvements along each dimension. The final analysis from the Residential Service survey attached a dollar value to 1%-point changes along each dimension. Recall that the profiles of Questionnaire 10 varied in the price of basic monthly service (\$6 vs. \$12). If, for example, the mean (1 to 10) ratings of Overall Evaluation of Residential Service for profiles with prices of \$6 was 8 and the mean for profiles with prices of \$12 was 6, this implies that a difference in price of (\$12 - \$6 =) \$6 is worth 2 points in overall quality, so a \$1 change in price is worth 2 points / \$6 = .333 points.

Thus, a dollar reduction in price can be compared to the utility associated with a 1% point increase in any of the 40 dimensions. If, for example, a 1%-point increase in Intra-Office Call Completions below the 95% standard was worth .111 points and a dollar reduction in price was worth .333 points, this implies that the monetary value of a 1%-point increase in intra-office call completions is $.111 / .333 = \$0.33$ per month to the customer.

Exhibit 4 shows the weights of 1%-point changes above and below the standard above and below the standard for each of the 40 dimensions for the FPSC experts, for the DGS experts, and for the average of these two. In the column to the right of each set of weights is the calculated implied monetary value of 1% point changes on each dimension. While it was stated earlier that the two groups showed very similar weights of 1%-point changes, the FPSC and DGS experts

differed markedly in the monetary value they attached to these changes. This is because the FPSC experts viewed a \$1 increase in the price of basic monthly service to be equivalent in value to only a small increase in overall residential quality (0.0583 points on a 1 to 10 scale), whereas the DGS experts viewed a \$1 reduction in price to be worth over three times as many quality points (0.2219). Exhibit 4 also shows the weight of a \$1 change in price for each group and for the average of the two groups.

Though these results on monetary value attached to 1%-point changes must be considered very tentative, because experts were not asked to consider cost or price until the final questionnaire. However, they make some sense intuitively. Experts within the DGS are charged with responsibility both for assessing quality of service and for purchasing telephone services and making trade-offs of quality against cost. Regulators within the FPSC spend most of their time concerned with the quality side of the equation, with a focus on enforcement of quality standards. It is conceivable that this might cause them to overestimate the worth of small improvements in quality to the consumer. We will discuss the implications of this speculation after presenting the results from the Public Telephone Service Questionnaire.

RESULTS: PUBLIC TELEPHONE SERVICE QUESTIONNAIRE

Recall that the Public Telephone Service Questionnaire was completed by the 10 FPSC experts and one of the experts from the DGS. Results from combining Pay Phone Questionnaires 1 - 5 with Pay Phone Questionnaire 6 were combined to determine the weights of 1% point changes on these dimensions on (1 to 10) Overall Evaluations of Public Telephone Service.

Tests for Agreement in Weights of 1%-Point Changes in Dimensions of Public Telephone Service

Because only 1 expert was surveyed from the DGS, it was not possible to test for significant differences between the FPSC and the DGS in the relative magnitudes of the weights of 1%-point changes of the 29 dimensions of public telephone service on Overall Evaluation. These weights differed significantly from each other. However, considering just these weights, the reliability of the weights derived from averaging the 11 experts responses was only .62. This is considered barely acceptable by conventional standards. Thus, there were more disagreements among experts in their assessments of the relative importance of various dimensions of Public Telephone Service than in assessments of the importance of dimensions of Residential Service Quality

Comparisons Among Weights for All 69 Dimensions of Quality

The final -- and most important -- set of analyses compared the weights of 1%-point changes for the 40 dimensions of Residential Telephone Service quality as well as of the 29 dimensions of Public Telephone Service Quality. These analyses were conducted using only the data from the 11 experts who completed both Residential Telephone Service and Public Telephone Service questionnaires.

In this stage, weights of 1%-point changes in individual dimensions of residential service quality were re-computed by multiplying the within-cluster weights derived from Residential Telephone Service Questionnaires 1 - 9 times the weight of a 1 point change on the corresponding cluster on (1 to 10) ratings of Overall Evaluation of Local Telephone Service from Pay Phone Questionnaire 7. Weights of 1% point changes in individual dimensions of public telephone service were computed by multiplying the within-cluster weights derived from Pay Phone Questionnaires 1 - 5 times the weight of a 1-point change in each cluster on

Overall Evaluation of Public Telephones from Pay Phone Questionnaire 6 times the weight of a 1 point change in Overall Evaluation of Public Telephones on Overall Evaluations of Local Telephone Service from Pay Phone Questionnaire 7. For dimensions with standards below 100%, effects of 1%-point changes were calculated separately for changes above the standard and for changes below the standard. This yielded a total of 100 weights. The mean values of these weights are shown in Exhibit 5.

These calculated weights were then submitted to an analysis of variance, where Weight Estimated was treated as a 100-level repeated measures factor. The test for Weight Estimated was highly statistically significant ($F(99,990) = 7.82, p < .0001$), showing that the weights differed markedly from each other. Note that for the subset of weights pertaining to residential telephone service, the relative values of the average weights re-derived here using the linking task data from Pay Phone Questionnaire 7 agreed closely with the average value of the same weights when derived from the linking task data in Residential Telephone Service Questionnaire 10.

EXHIBIT 5: Weights Derived From Pay Phone Questionnaire 7

Criterion	Weight From Pay Q7	PSC + DGS Weight From Q10	Adjusted Weight Pay Q7
RESIDENTIAL TELEPHONE SERVICE QUESTIONNAIRE			
1. Dial Tone Del +	0.1605	0.1110	2.2168
Dial Tone Del -	0.3594	0.2133	4.9649
2. Call Completion & Billing			
Intra-Office +	0.0065	0.0116	0.0895
Intra-Office -	0.1698	0.1126	2.3462
Inter-Office +	0.0100	0.0125	0.1384
Inter-Office -	0.0892	0.0802	1.2320
EAS +	0.0030	0.0042	0.0410
EAS -	0.0421	0.0368	0.5818
Intra-Lata DDD +	0.0136	0.0107	0.1879
Intra-Lata DDD -	0.0233	0.0212	0.3215
Inter-Lata DDD +	0.0053	0.0089	0.0732
Inter-Lata DDD -	0.0276	0.0176	0.3819
911 Service -	0.1217	0.1307	1.6818
Billing Accuracy +	0.0182	0.0267	0.2507
Billing Accuracy -	0.1208	0.1071	1.6695
3. Answer Time			
Operator +	0.0022	0.0076	0.0304
Operator -	0.0355	0.0324	0.4902
Directory Assistance +	0.0046	0.0041	0.0634
Directory Assistance -	0.0162	0.0583	0.2233
Repair Service +	0.0011	0.0063	0.0157
Repair Service -	0.0029	0.0022	0.0407
Bus. Office +	0.0026	0.0036	0.0353
Bus. Office -	0.0032	0.0080	0.0445
4. Directory			
Directory Service -	0.0038	0.0103	0.0518
New Numbers -	0.0017	0.0065	0.0233
Number in Directory +	0.0106	0.0247	0.1465
Number in Directory -	0.0239	0.0613	0.3297
Billing Accuracy +	0.0203	0.0359	0.2803
Billing Accuracy -	0.0033	-0.0043	0.0454

Exhibit 5 (Contd...)

Criterion	Weight From Pay Q7	PSC + DGS Weight From Q10	Adjusted Weight Pay Q7
5. Intercept Services			
Changed Number +	0.0054	0.0025	0.0752
Changed Number -	0.0131	-0.0020	0.1816
Disconnected +	0.0021	0.0020	0.0286
Disconnected -	0.0091	0.0037	0.1257
Vacation +	0.0014	0.0026	0.0188
Vacation -	0.0025	-0.0040	0.0342
Vacant +	0.0012	0.0017	0.0162
Vacant -	0.0088	0.0065	0.1215
Non-Pay -	0.0070	0.0094	0.0964
Incor. Dialed +	0.0044	0.0039	0.0610
Incor. Dialed -	0.0044	0.0039	0.0610
6. Central Office			
Power & Gener. -	0.0034	0.0016	0.0467
Sched. Routine -	0.0021	0.0010	0.0284
Frame -	0.0023	0.0012	0.0321
Facilities -	0.0032	0.0016	0.0443
7. Installation & Repair Services			
Same Day Rest +	0.0038	0.0028	0.0531
Same Day Rest -	0.0056	0.0066	0.0771
24 Hr. Restoral +	0.0156	0.0132	0.2154
24 Hr. Restoral -	0.0565	0.0193	0.7802
Repair Appts. +	0.0056	0.0048	0.0770
Repair Appts. -	0.0082	0.0063	0.1131
Reb. over 24 Hr. -	0.0013	0.0013	0.0177
3 Day Primary +	0.0014	0.0034	0.0195
3 Day Primary -	0.0102	0.0052	0.1406
Prim. Serv. Appt. +	0.0055	0.0030	0.0763
Prim. Serv. Appt. -	0.0344	0.0249	0.4750
8. Transmission			
Dial Tone Lev. -	-0.0005	0.0012	0.0001
C. O. Loss -	-0.0005	0.0010	0.0000
M. W. Frequency -	-0.0001	0.0010	0.0000
C. O. Noise Met. -	-0.0001	0.0012	0.0000

Exhibit 5 (Contd...)

Criterion	Weight From Pay Q7	PSC + DGS Weight From Q10	Adjusted Weight Pay Q7
C. O. Noise Imp. -	-0.0002	0.0009	0.0000
Test Numbers -	0.0000	0.0008	0.0006
Subscr. Loops +	0.0118	0.0089	0.1630
Subscr Loops -	-0.0252	0.0267	0.0000
9. Cust. Complaint +	-6.0090	-1.0701	-87.0162
Cust. Complaint -	-0.4391	-0.2052	-6.0663

PUBLIC TELEPHONE SERVICE QUESTIONNAIRE

1A. Function of Public Phones Outgoing Calls

1 Phone/Exch. -	-0.0000	0.0000
Addr./Location -	0.0053	0.0732
Servicability -	0.0002	0.0028
Dial Instructions -	0.0037	0.0505
Acc. All Ld. Car. -	0.0001	0.0014
Dialing +	-0.0008	0.0000
Dialing -	0.0003	0.0036
Oper. ID Coins +	-0.0002	0.0000
Oper. ID Coins -	0.0013	0.0176

2A. Functioning of Public Phones Incoming Calls

Phone Numbers -	0.0022	0.0306
Receives Calls -	-0.0001	0.0000
Hear. Aid. Comp. -	-0.0000	0.0000
Transmission +	0.0011	0.0156
Transmission -	0.0001	0.0016

3A. Enclosure of Public Telephones

Handicapped -	0.0005	0.0066
Cleanliness +	0.0000	0.0003
Cleanliness -	0.0015	0.0212
Lights -	0.0009	0.0131
Glass +	0.0002	0.0032
Glass -	-0.0006	0.0000
Doors +	0.0002	0.0030
Doors -	0.0000	0.0004

Exhibit 5 (Contd...)

Criterion	Weight From Pay Q7	PSC + DGS Weight From Q10	Adjusted Weight Pay Q7
Level +	0.0003		0.0044
Level -	0.0003		0.0036
Wiring +	0.0003		0.0035
Wiring -	0.0006		0.0082
Name or Logo -	0.0000		0.0005
4A. Coin Operations of Public Telephones			
Pre-Pay -	0.0027		0.0372
Coin Return Auto -	0.0002		0.0021
Coin Return Oper. -	0.0008		0.0104
C. Free Acc. Ope. -	0.0004		0.0056
C. Free Acc. 911 -	0.0004		0.0054
C. Free Acc. D. A. -	0.0002		0.0025
C. Free Acc. R. S. -	0.0001		0.0020
C. Free Acc. B. O. -	0.0001		0.0016
5A. Directory & Directory Security of Public Phones			
Directory -	0.0001		0.0008
Directory Security +	0.0022		0.0298
Directory Security -	-0.0002		0.0000

Tests for differences in weights above versus below standards. A second analysis was conducted on the 32 dimensions that had standards below 100%, so that separate weights could be estimated for 1%-point changes above versus below the standard. This analysis treated Dimension as a 32 level repeated measures factor and Above versus Below Standard as a 2 level repeated measures factor. Here, the difference in the weight given to 1% point changes below versus above the standards was highly significant ($F(1,10) = 18.57, p < .002$), but this difference in weights for above versus below standard changes varied significantly across the 32 dimensions ($F(31,310) = 4.12, p < .0001$). Again, this supports the merit of estimating a separate weight for 1%-point changes above versus below the standards.

The fact that changes below the standards are considered generally more important than changes above the corresponding standards is also shown by inspection of the largest weights in Exhibit 5. The formula revealed that the criteria for which a 1%-point change in compliance has the greatest effect on overall evaluations are: Dial Tone Delay (when operating) below the 95% standard; Intra-Office Call Completions below 95% standard; Dial Tone Delay above 95% standard; 911 Service Call Completion below 100% standard; Billing Accuracy of Intra-LATA calls below 97% standard; Inter-Office Call Completions below 95% standard; 24-Hour Restoral below 95% standard; EAS Call Completions below 95% standard; Operator Answer Time below 90% standard; Primary Service Appointments below 90% standard. Only 1 of the 10 largest weights pertains to changes above the relevant standard. This weight, for Dial Tone Delay, is still less than half the size of its counterpart for changes below the same standard.

Reliability of the final scale of weights. The reliability of the scale of 100 weights averaged across the responses of the 11 experts was computed.

Recall that this measures the proportion of variance in the observed 100 mean weights accounted for by variance in the "true" 100 weights that would emerge if we were to measure and average the weights of the complete population of experts.

In this analysis, the reliability of the weights was .87, which is considered very reliable by accepted standards (Nunnally 1967). This is encouraging, especially given the lower reliability of the subset of weights pertaining to public telephone service. Despite this generally high reliability, several of the less important dimensions again had weights that were actually negative. In no case, though, did these differ significantly from zero. Again, the reader is reminded that in application of the weighted index of telephone service quality, these negative weights should be arbitrarily set to some trivially small positive number (.e.g, .000001).

Translating the Weights Into a Weighted Index of Overall Telephone Service Quality

To translate the weights into a usable index of telephone service quality, assume that all companies begin with a certain Base Score that would correspond to meeting all rules exactly. For each dimension, calculate the difference between the company's score on that dimension and the standard. If the difference is positive, multiply that positive difference times the weight of a 1%-point change above the standard on that dimension and add that positive adjustment factor to the base. If the difference is negative, multiply that negative difference times the weight of a 1%-point change below the standard on that dimension, and add that negative adjustment factor to the base. This is done for all dimensions for which data are available.

When all adjustment factors have been added to the base, the resulting

score is a valid measure of overall telephone service quality. Any firm with a total score higher than the base should be treated as providing overall quality higher than that of a firm that meets all standards exactly.

Note that under this method, dimensions for which evaluation data are unavailable yield neither an increase nor a decrease in the weighted index relative to the base of 75. Put differently, missing dimensions are treated as if the company met those standards exactly.

Note that the weights for 1% point changes given up to this point have corresponded to ratings on a 1 to 10 scale of overall quality. In a memorandum from Gene Ferguson, it was suggested that the Commission would be more comfortable with an index from 0 to 100. Moreover, it was suggested that the Base Score if all standards are met exactly should be set at 75. The spirit of this suggestion was that such performance is merely "satisfactory" rather than "excellent" -- the equivalent of "C".

Translating the weights to meet these requirements is straightforward. We arbitrarily set the Base Score to 75, then set Adjusted Weights = Weight from Pay Phone Questionnaire 7 * Multiplier. The value of the multiplier is chosen so that a firm that scored 100% on all dimensions of service quality would receive a weighted index of overall service quality equal to 100%. The rightmost column in Exhibit 5 shows the values of these Adjusted Weights that have the properties requested by the FPSC.⁴

This report is accompanied by a LOTUS 1-2-3 spreadsheet to automate calculation of the weighted index of telephone service quality. This

⁴ The reader is cautioned, however, that the "letter grade" metaphor cannot be taken too far here. For example, there is nothing that guarantees that an "A" grade of 90% is technologically possible, so it would not necessarily be fair to reserve the label of "excellent" for companies performing above that level.

spreadsheet uses the adjusted weights from the rightmost column of Exhibit 5. The user enters the numerical scores for a company on the dimensions for which evaluation data have been collected in either the "above standard" cell for that dimension or the "below standard" cell. The spreadsheet takes the difference between the obtained score and the standard and multiplies it by the weight of a 1%-point change on that dimension, resulting in an adjustment up for above-standard performance and an adjustment down for below-standard performance. The same operations are performed for all dimensions for which evaluation data have been obtained. By adding all of these weighted adjustments to the base of 75, an overall quality index is calculated.

CONCLUSIONS: USE OF THE WEIGHTED INDEX OF QUALITY IN REGULATION

Regulating Overall Quality Rather than 69 Dimensions of Quality

Short-run performance monitoring. The use of this index implies two major departures from the current regulatory regime. First, in using this index, a company achieving a weighted index score higher than 75 should be treated as providing "satisfactory" service, even if this score results from exceeding some standards while failing others. The weights given here reflect the experts' tradeoffs. These imply that a company can provide a mixture of super-standard and sub-standard performance and still be providing quality superior to a company meet all standards exactly.

Degradation in overall service quality if Q* set at 75? It should be noted that because all companies are currently striving to meet all standards, if companies were now told that they only had to achieve a weighted index score of 75 -- with standards on individual dimensions now relegated to a secondary role -- the overall level of telephone service quality in the State of Florida might be expected to decline. The solution to this dilemma is simply to state

that the required level of overall quality, Q^* , is not the score of 75 associated with meeting all standards exactly, but some higher score -- perhaps the score that separates the bottom third of all companies recently evaluated from the top two-thirds.

Penalties for failing X number of standards? In contracting for the development of this index, it was suggested that we investigate the possibility of establishing an additional penalty to the calculated overall index of telephone service quality if more than a certain number of standards are failed. This suggestion was prompted by FPSC discomfort at the idea that a company could, in principal, fail a third of the standards, and yet still achieve an acceptable overall score (i.e., a score greater than the Base of 75).

After careful analysis, my colleagues and I have concluded that such a penalty would be unwise and completely contrary to the concept of a weighted index. The example given earlier (pages 17 & 18) comparing Companies A, B, and C shows the inappropriateness of such an adjustment. In that example, Company A met 3 out of three standards, Company B met 2 out of the three, and Company C met only 1 out of the three. However, most experts would agree that the best overall quality was provided by C, with A providing the poorest quality. Moreover, one can envision similar examples in which the costs of providing a pattern of service like Company A may significantly exceed the costs of providing service like Company C. It would be clearly dysfunctional for the FPSC to encourage both lower quality and higher costs by forcing Companies B and C to be like A.

The whole concept of using a weighted index is to allow tradeoffs among dimensions. By regulating only the "bottom line," companies that face different cost structures are free to reallocate resources to reach the target overall

quality, Q^* , in whatever way is most cost-effective.

This is very much in the spirit of current regulatory developments in other domains. For example, the new Clean Air Bill just passed by Congress allows companies that are heavy polluters to buy "pollution credits" from companies whose costs and technologies make them lighter polluters. From the viewpoint of Congress and the citizenry, what is important is the overall level of pollution in an area, not whether it comes from one company or another. Therefore, it makes sense to regulate the overall without micro-managing how this is to be achieved. This system can be shown to lower costs of compliance without increasing overall levels of pollution, compared to a system that requires each companies to meet the same pollution standard in its own plant's operations.

Use of the weighted index of telephone service quality in rate-hearings.

This index makes it possible for the FPSC to reward systematically companies providing superior quality by allowing preferential rates of return, and to punish inferior quality by allowing lower rates of return. Because, in the past, regulators within the Florida Public Service Commission had no consistent and valid mechanism for measuring the overall quality of service provided by the company for which a rate hearing was being held, it has been very difficult politically to justify differential rates of return for companies depending upon the level of quality of service provided.

This index now provides the required mechanism for such a change in regulatory policy if the FPSC is so inclined. By publishing the weights, the FPSC can communicate clearly how it defines quality, leaving each company free to attain its desired target level of overall quality by whatever mixture of sub-standard and super-standard performance that is most cost-efficient given its cost structure.

Creating incentives for too much quality? In contracting for the present work, the FPSC expressed the concern that it may be undesirable to encourage improvements on some dimensions above the level of the published standards. Such improvements might represent "gold-plating" -- providing a level of quality higher than consumers really need given the cost. For this reason, the contract for the present report expressly requests "establishing a cap for categories where performance at or near 100% is not cost-effective."

The current project responded to this request by estimating (for dimensions with standards less than 100%) separate weights for improvements above the levels of standards and below those same standards. The fact that 1%-point changes above the standards were valued less than 1%-point changes below the same standards undoubtedly reflects the experts assessments of costs versus benefits. In this respect, the current weighted index is clearly superior to that which emerged from our earlier work that forced weights above and below the same standard to be treated as equal.

However, it is my perception that despite their expertise, respondents in the present study are not in possession of detailed data about the marginal costs of improvement along the various regulated dimensions. In any case, those costs are likely to differ among companies. Rather than placing the FPSC in the position of setting a single standard based upon assumptions about what those costs are, what seems to be required is a detailed study of the monetary value consumers attach to 1%-point changes in quality above and below the current standards, much in the spirit of the dollar value estimates shown for dimensions of Residential Telephone Service in Exhibit 4.

If such data were available, the FPSC should encourage companies to exceed the standard whenever the firm-specific costs (passed on to consumers) of such

improvement are less than the (aggregated) dollar value consumers attach to these improvements. However, when the costs of such improvements are greater than the aggregated dollar value to consumers, such improvements should be discouraged. It should be noted, however, that these same principles should be obeyed when considering improvements in firms below the level of the standard.

SUMMARY

In contracting for the present work the FPSC asked the Public Utility Research Center to: "1) resurvey with expanded criteria, 2) survey disinterested by knowledgeable communications managers of large corporate telecommunications systems, 3) delete 911 answer time from the criteria, 4) establish a cap for categories where performance at or near 100% is not cost-effective, and 5) develop revised weights." All of these objectives have been accomplished.

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APPENDIX A

FPSC Residential Service Survey

1

Dear Participant:

The Public Service Commission is developing methods for evaluating local telephone companies in the State of Florida. As you know, the PSC evaluates how well each phone company is meeting Service Evaluation Rules covering a large number of topics. The PSC wants to determine how to combine a phone company's scores to assign a single number reflecting the PSC's overall evaluation of that utility. While this evaluation should represent the interests of telephone customers, those customers lack the technical expertise to trade off strengths and weaknesses that a telephone company might have in the different areas covered by the PSC's service evaluations. Therefore the PSC has asked us to survey experts like you to determine what weights should be placed on each topic. We are asking you to take the perspective of a knowledgeable residential customer.

A series of short questionnaires is attached, pertaining to nine major topics governed by Service Evaluation Rules: Dial Tone Delay, Call Completions and Billing, Answer Time, Directory and Directory Assistance, Intercept Services, Central Office, Installation and Repair Services, Transmission, and Customer Complaints. The PSC would like to develop criteria for rating phone companies on a 1 to 10 scale for each of these areas.

The cover page for each questionnaire will present the Service Evaluation Rules governing that topic. For example, the standard on dial tone delay is "95% of calls receive a dial tone within 3 seconds." On the second page of each questionnaire, you will be shown several hypothetical utilities that vary in how well they meet these specific rules in an exchange. You will be asked to rate each one on a scale from 1 to 10, reflecting your evaluation of the utility in that area:

1	2	3	4	5	6	7	8	9	10
Worst Possible									Best
Performance									Possible
									Performance

(This evaluation should reflect the consumer's perspective, ignoring company cost considerations.)

To illustrate your task, you might be asked to rate two phone companies on "Answer Time" given the following evaluation results:

1. Operator Answer Time	90%	2. Operator Answer Time	89%
Directory Assistance	89%	Directory Assistance	90%
Repair Service	90%	Repair Service	98%
Business Office	80%	Business Office	67%

By analyzing how you evaluate utilities that differ in their performance on these 4 criteria, we can infer what relative weights you think should be assigned to each in giving it an overall rating on "Answer Time."

By combining your responses with those of other experts, we will be able to propose a formula for weighting performance scores to provide evaluations of each local telephone company. This formula captures the evaluation policies of experts like yourself, allowing the PSC an easy and accurate method of evaluating phone companies in the future. This technique has proved to be extremely effective in performance evaluation in many areas.

If you have any questions or concerns please call either:

John Lynch (Office: 904-392-0121; Home: 904-374-8991) or
Thomas Buzas (Office: 313-487-3323; Home: 313-429-3042).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing
University of Florida

Dr. Thomas Buzas
Associate Professor of Marketing
Eastern Michigan University

TB/JL/vjd

P.S. This questionnaire will take about four hours in total to finish. It need not (and probably should not) be completed in a single sitting, although we ask that you complete all parts within a week's time. Please fill out the questionnaires in the order in which they are stapled in the booklet. Thank you.

Questionnaire 1

DIAL TONE DELAY

On the following page, you will be asked to rate the overall performance of each of 5 exchanges on Dial Tone Delay.

For each exchange, you will be provided with the percentage of time that a call received a dial tone within 3 seconds.

The rule requirement is:

Dial Tone Delay	95% of calls receive dial tone in 3 seconds
-----------------	---

Questionnaire 1 - Dial Tone Delay

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10	
Worst										Best
Possible										Possible
Performance										Performance
On Dial Tone										On Dial Tone
Delay										Delay

		<u>Company's</u> <u>Score</u>	<u>PSC</u> <u>Rule</u>	
1.	Dial Tone Delay	98%	95%	Your Rating _____
2.	Dial Tone Delay	94%	95%	Your Rating _____
3.	Dial Tone Delay	100%	95%	Your Rating _____
4.	Dial Tone Delay	97%	95%	Your Rating _____
5.	Dial Tone Delay	95%	95%	Your Rating _____

Questionnaire 2

CALL COMPLETIONS AND BILLING

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Call Completions and Billing.

For each exchange, you will be given the percentage of calls that are completed 1) Intra-office, 2) Inter-office, 3) EAS, 4) Intra-LATA DDD, 5) Inter-LATA DDD, and 6) 911 Service. You will also be given 7) the percentage of calls that are timed accurately for the purpose of billing the customer.

The standards are:

Intra-office	95% of calls completed
Inter-office	95% of calls completed
EAS	95% of calls completed
Intra-LATA DDD	95% of calls completed
Inter-LATA DDD	90% of calls completed by your provider
911 Service	100% of calls delivered to the 911 authority
Billing Accuracy	97% of Intra-LATA calls are timed accurately

Notes:

A telephone call to a valid number is considered completed if it encounters "an audible ring, line busy signal or non-working number intercept facility (operator or recording) after completion of dialing."

An Intra-office call is a call to a number with the same first three (3) digits as your own.

Inter-office calls are calls to numbers with different 3-digit codes but within your home exchange.

EAS calls are to different home exchanges within your calling area (non-toll calls).

Intra-LATA DDD are toll calls carried by your local company.

Inter-LATA DDD are toll calls carried by a long-distance carrier, such as AT&T or MCI. Assume the long-distance carrier operates at 100% for purposes of this survey, so that Inter-LATA DDD score reflects only the local phone companies' performance in the link.

All 911 Calls must be delivered to the 911 authority, which is then responsible for answering and responding to the calls.

Billing Accuracy refers to the proportion of Intra-LATA calls that are accurately timed.

Questionnaire 2 - Call Completions and Billing

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst Possible Performance On Call Completions and Billing					Best Possible Performance On Call Completions and Billing				

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Intra-office	100%	95%	
	Inter-office	100%	95%	
	EAS	95%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	100%	97%	
	911 Service	99%	100%	Your Rating _____
2.	Intra-office	95%	95%	
	Inter-office	94%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	96%	97%	
	911 Service	99%	100%	Your Rating _____
3.	Intra-office	94%	95%	
	Inter-office	94%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	95%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	97%	97%	
	911 Service	100%	100%	Your Rating _____
4.	Intra-office	100%	95%	
	Inter-office	100%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	99%	95%	
	Inter-LATA DDD	88%	90%	
	Billing Accuracy	97%	97%	
	911 Service	100%	100%	Your Rating _____

- | | | | | |
|-----|------------------|------|------|-------------------|
| 5. | Intra-office | 94% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 6. | Intra-office | 100% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 7. | Intra-office | 95% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 8. | Intra-office | 95% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 9. | Intra-office | 95% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 10. | Intra-office | 100% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |

11.	Intra-office	95%	95%	
	Inter-office	95%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	90%	90%	
	Billing Accuracy	97%	97%	
	911 Service	100%	100%	Your Rating _____
12.	Intra-office	95%	95%	
	Inter-office	95%	95%	
	EAS	95%	95%	
	Intra-LATA DDD	95%	95%	
	Inter-LATA DDD	88%	90%	
	Billing Accuracy	100%	97%	
	911 Service	99%	100%	Your Rating _____
13.	Intra-office	94%	95%	
	Inter-office	100%	95%	
	EAS	93%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	90%	90%	
	Billing Accuracy	100%	97%	
	911 Service	100%	100%	Your Rating _____
14.	Intra-office	94%	95%	
	Inter-office	95%	95%	
	EAS	95%	95%	
	Intra-LATA DDD	99%	95%	
	Inter-LATA DDD	88%	90%	
	Billing Accuracy	96%	97%	
	911 Service	100%	100%	Your Rating _____
15.	Intra-office	95%	95%	
	Inter-office	95%	95%	
	EAS	93%	95%	
	Intra-LATA DDD	99%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	96%	97%	
	911 Service	99%	100%	Your Rating _____
16.	Intra-office	100%	95%	
	Inter-office	95%	95%	
	EAS	95%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	88%	90%	
	Billing Accuracy	97%	97%	
	911 Service	99%	100%	Your Rating _____

- | | | | | |
|-----|------------------|------|------|-------------------|
| 17. | Intra-office | 95% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 18. | Intra-office | 100% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 19. | Intra-office | 94% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 20. | Intra-office | 100% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 21. | Intra-office | 94% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 22. | Intra-office | 100% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |

- | | | | | |
|-----|------------------|------|------|-------------------|
| 23. | Intra-office | 94% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 24. | Intra-office | 94% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 25. | Intra-office | 95% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 26. | Intra-office | 100% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 27. | Intra-office | 94% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |

Questionnaire 3

ANSWER TIME

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Answer Time.

For each exchange, you will be given the percent of calls answered within a certain time frame by 1) Operator, 2) Directory Assistance, 3) Repair Service, and 4) Business Office.

The Answer Time standards established for each dimension are:

Operator Answer Time	90% of calls answered in 10 seconds
Directory Assistance	90% of calls answered in 20 seconds
Repair Service	90% of calls answered in 20 seconds
Business Office	80% of calls answered in 20 seconds

Notes:

The term "answered" means "more than an acknowledgment that the customer is waiting on the line. It shall mean that the operator or service representative is ready to render assistance and/or accept the information necessary to process the call." An exception is with calls to Business Office services "where company practice provides that such calls are directed to an operator position. In such cases, an additional twenty (20) seconds will be allowed to extend the call excluding the time required for the customer to provide sufficient information to the operator in order to process the call. In those cases where the call cannot be extended within the allotted interval, the calling party is to be given the option of placing the call again or providing a number by which a company representative will return the call within ten (10) minutes or at a time mutually convenient to the parties."

"All telephone companies are expected to answer their main published telephone number on a twenty-four (24) hour a day basis. Answering may be handled by a special operator at the toll center or directory assistance facility when the company offices are closed. Where after-hour calls are not handled as above, at least the first published Business Office number will be equipped with a telephone answering device which will notify callers after the normal working hours of the hours of operation for that business office. Where recording devices are used, the message shall include the telephone number assigned to handle urgent or emergency calls when the business office is closed."

Questionnaire 3 - Answer Time

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst					Best				
Possible					Possible				
Performance					Performance				
On Answer Time					On Answer Time				

		<u>Company's</u> <u>Score</u>	<u>PSC</u> <u>Rule</u>	
1.	Operator Answer Time	90%	90%	
	Directory Assistance	99%	90%	
	Repair Service	90%	90%	
	Business Office	80%	80%	Your Rating _____
2.	Operator Answer Time	100%	90%	
	Directory Assistance	89%	90%	
	Repair Service	98%	90%	
	Business Office	67%	80%	Your Rating _____
3.	Operator Answer Time	89%	90%	
	Directory Assistance	90%	90%	
	Repair Service	90%	90%	
	Business Office	80%	80%	Your Rating _____
4.	Operator Answer Time	100%	90%	
	Directory Assistance	90%	90%	
	Repair Service	90%	90%	
	Business Office	67%	80%	Your Rating _____
5.	Operator Answer Time	89%	90%	
	Directory Assistance	99%	90%	
	Repair Service	98%	90%	
	Business Office	100%	80%	Your Rating _____
6.	Operator Answer Time	90%	90%	
	Directory Assistance	99%	90%	
	Repair Service	98%	90%	
	Business Office	67%	80%	Your Rating _____
7.	Operator Answer Time	89%	90%	
	Directory Assistance	89%	90%	
	Repair Service	90%	90%	
	Business Office	100%	80%	Your Rating _____

8.	Operator Answer Time	90%	90%	Your Rating _____
	Directory Assistance	90%	90%	
	Repair Service	75%	90%	
	Business Office	67%	80%	
9.	Operator Answer Time	90%	90%	Your Rating _____
	Directory Assistance	90%	90%	
	Repair Service	98%	90%	
	Business Office	80%	80%	
10.	Operator Answer Time	89%	90%	Your Rating _____
	Directory Assistance	89%	90%	
	Repair Service	98%	90%	
	Business Office	80%	80%	
11.	Operator Answer Time	100%	90%	Your Rating _____
	Directory Assistance	99%	90%	
	Repair Service	75%	90%	
	Business Office	67%	80%	
12.	Operator Answer Time	100%	90%	Your Rating _____
	Directory Assistance	90%	90%	
	Repair Service	75%	90%	
	Business Office	80%	80%	
13.	Operator Answer Time	89%	90%	Your Rating _____
	Directory Assistance	99%	90%	
	Repair Service	75%	90%	
	Business Office	80%	80%	
14.	Operator Answer Time	89%	90%	Your Rating _____
	Directory Assistance	90%	90%	
	Repair Service	98%	90%	
	Business Office	67%	80%	
15.	Operator Answer Time	90%	90%	Your Rating _____
	Directory Assistance	89%	90%	
	Repair Service	90%	90%	
	Business Office	67%	80%	
16.	Operator Answer Time	89%	90%	Your Rating _____
	Directory Assistance	89%	90%	
	Repair Service	75%	90%	
	Business Office	67%	80%	
17.	Operator Answer Time	100%	90%	Your Rating _____
	Directory Assistance	99%	90%	
	Repair Service	90%	90%	
	Business Office	100%	80%	

- | | | | | |
|-----|----------------------|------|-----|-------------------|
| 18. | Operator Answer Time | 90% | 90% | Your Rating _____ |
| | Directory Assistance | 90% | 90% | |
| | Repair Service | 90% | 90% | |
| | Business Office | 100% | 80% | |
| 19. | Operator Answer Time | 90% | 90% | Your Rating _____ |
| | Directory Assistance | 89% | 90% | |
| | Repair Service | 98% | 90% | |
| | Business Office | 100% | 80% | |
| 20. | Operator Answer Time | 90% | 90% | Your Rating _____ |
| | Directory Assistance | 99% | 90% | |
| | Repair Service | 75% | 90% | |
| | Business Office | 100% | 80% | |
| 21. | Operator Answer Time | 100% | 90% | Your Rating _____ |
| | Directory Assistance | 89% | 90% | |
| | Repair Service | 90% | 90% | |
| | Business Office | 80% | 80% | |
| 22. | Operator Answer Time | 100% | 90% | Your Rating _____ |
| | Directory Assistance | 99% | 90% | |
| | Repair Service | 98% | 90% | |
| | Business Office | 80% | 80% | |
| 23. | Operator Answer Time | 100% | 90% | Your Rating _____ |
| | Directory Assistance | 89% | 90% | |
| | Repair Service | 75% | 90% | |
| | Business Office | 100% | 80% | |
| 24. | Operator Answer Time | 100% | 90% | Your Rating _____ |
| | Directory Assistance | 90% | 90% | |
| | Repair Service | 98% | 90% | |
| | Business Office | 100% | 80% | |
| 25. | Operator Answer Time | 90% | 90% | Your Rating _____ |
| | Directory Assistance | 89% | 90% | |
| | Repair Service | 75% | 90% | |
| | Business Office | 80% | 80% | |
| 26. | Operator Answer Time | 89% | 90% | Your Rating _____ |
| | Directory Assistance | 99% | 90% | |
| | Repair Service | 90% | 90% | |
| | Business Office | 67% | 80% | |
| 27. | Operator Answer Time | 89% | 90% | Your Rating _____ |
| | Directory Assistance | 90% | 90% | |
| | Repair Service | 75% | 90% | |
| | Business Office | 100% | 80% | |

Questionnaire 4

DIRECTORY AND DIRECTORY ASSISTANCE

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Directory and Directory Assistance.

For each exchange, you will be given the percentage of the 18 rules regarding Directory Service that a company meets. You will also be given the percentage of New Numbers that are available within 48 hours from directory assistance, the percentage of Numbers that are published in the Directory, the percentage of calls to directory assistance that are correctly billed, and the percentage of primary service installations that occur within 3-days of request.

The rule requirements are:

Directory Service	100% of the 18 rules about directory are met.
New Numbers	100% of <u>all</u> new numbers are available in 48 hours.
Numbers in Directory	99% of all numbers in directory can be verified by the directory assistance operator.
Billing Accuracy	100% of calls for directory assistance are billed correctly.

Notes:

A "Directory" must follow 18 rules.

1. An updated directory should be published normally every 12 months and, at least, within 15 months.
2. The directory shall list the name, address and telephone number of subscribers located in the area covered by the directory, excepting public telephones and unlisted numbers.
3. The directory shall list all subscribers (exceptions noted under 2 above) located in the calling area (toll free calls).
4. Upon request by any residential subscriber, the exchange company shall list an additional first name under the same address, telephone number and surname of the subscriber.
5. There shall be no charge for dual listings (3 above).
6. Listings shall be in alphabetical order.
7. Each subscriber served by a directory shall be provided with 1 copy for each access line.
8. Subject to availability, additional directories shall be provided by the exchange company, which may charge a reasonable fee.
9. The company name, area covered, month and year published shall be listed on the inside front cover of

- the directory.
10. Emergency numbers, including police, fire and ambulance services, and where available instructions for 911 service shall be published on the inside front cover.
 11. The following block shall be conspicuously displayed on the inside front cover or on the first page of the directory:

THE FLORIDA PUBLIC SERVICE COMMISSION
Office of Consumer Affairs
101 East Gaines Street
Tallahassee, Florida 32301-8153
Phone Toll Free 1-800-342-3552

12. Directions for using local exchange and long distance telephone services shall appear on the front pages of the directory preceding subscriber listings.
13. Directions for calling repair service and directory assistance shall also appear on the front pages of the directory preceding subscriber listings.
14. The location of the business office and instructions for calling the business office shall appear on the front pages of the directory preceding subscriber listings.
15. Special instructions for hearing/speech impaired also shall appear on the front pages of the directory preceding subscriber listings.
16. Telecommunications Devices for the Deaf (TDD) numbers for emergency and informational services shall appear on the front pages of the directory preceding subscriber listings.
17. Upon request by a subscriber, special notation indicating TDD user listings shall be provided at no extra charge.
18. There shall be no charge for non-published and non-listed TDD numbers requested by the subscriber.

A company's score on "Directory Service" reflects what percent of those 18 rules are met.

For New Numbers, "directory assistance operators shall maintain records of all telephone numbers (except for non-published telephone numbers) in the area for which they have the responsibility for furnishing service. All new or changed listings shall be provided to directory assistance operators within forty-eight (48) hours after connection of service, excluding Saturdays, Sundays and holidays."

Numbers in Directory refers to the percentage of numbers, excepting unlisted numbers and new numbers, randomly selected from the directory, that the directory assistance operator can verify.

Billing accuracy refers to the percentage of calls to directory assistance that for which the caller is billed or not billed, in accordance with its tariff.

Questionnaire 4 - Directory and Directory Assistance

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10
 Worst
 Possible
 Performance
 On Directory and
 Directory Assistance

10
 Best
 Possible
 Performance
 On Directory and
 Directory Assistance

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Numbers in Directory	98%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
2.	Numbers in Directory	99%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
3.	Numbers in Directory	98%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
4.	Numbers in Directory	99%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____
5.	Numbers in Directory	100%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
6.	Numbers in Directory	99%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
7.	Numbers in Directory	100%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____

8.	Numbers in Directory	100%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
9.	Numbers in Directory	98%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
10.	Numbers in Directory	98%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
11.	Numbers in Directory	98%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____
12.	Numbers in Directory	98%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
13.	Numbers in Directory	100%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
14.	Numbers in Directory	99%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
15.	Numbers in Directory	100%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
16.	Numbers in Directory	99%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
17.	Numbers in Directory	99%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____

18.	Numbers in Directory	100%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
19.	Numbers in Directory	98%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
20.	Numbers in Directory	98%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
21.	Numbers in Directory	98%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
22.	Numbers in Directory	100%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
23.	Numbers in Directory	99%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
24.	Numbers in Directory	100%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
25.	Numbers in Directory	99%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
26.	Numbers in Directory	100%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
27.	Numbers in Directory	99%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____

Questionnaire 5

INTERCEPT SERVICES

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Intercept Services. Intercept service is the service provided when a customer dialing an out-of-service or changed number or some other call which cannot be completed is answered automatically either by a recorded message or an operator.

For each exchange, you will be provided the percentage of calls answered automatically on 1) Changed Numbers, 2) Disconnected Service, 3) Vacation Disconnects, 4) Vacant Numbers and 5) Disconnects non-pay. You will also be provided with the percentage of rules covering 6) Incorrectly Dialed Calls that are satisfied by the company.

The rule requirements are:

Changed Numbers	90% of calls answered in 20 seconds
Disconnected Service	80% of calls answered in 20 seconds
Vacation Disconnects	80% of calls answered in 20 seconds
Vacant Numbers	80% of calls answered in 20 seconds
Disconnects Non-Pay	100% of calls answered in 20 seconds
Incorrectly Dialed Calls	95% of 7 error types intercepted.
	An exchange where all 7 types of errors are intercepted is in 100% compliance.

Notes:

For changed numbers, the caller is informed of the new number.

For Disconnected Service, the caller is informed that the number reached is not in service.

A Vacation Disconnect occurs when a number is temporarily disconnected at the customer's request.

For Vacant Numbers, the caller is informed that the number reached is not in service.

With Disconnects due to non-payment, the caller is told that the number has been temporarily disconnected.

The system must intercept 7 types of Incorrectly Dialed Calls, and indicate to the caller by recording, busy signal or other means that the call cannot be completed:

1. Toll Access Not Dialed on Toll Calls.
2. Toll Access and Home Area Code Dialed.
3. Toll Access and Invalid Office Code Dialed.
4. Toll Access and Non-Working Area Code Dialed.
5. Toll Access and Insufficient Digits Dialed.
6. Toll Access Dialed on EAS Call.
7. Area Code Dialed on EAS code.

Questionnaire 5 - Intercept Services

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10
 Worst
 Possible
 Performance
 On Intercept Services

Best
 Possible
 Performance
 On Intercept Services

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Changed Numbers	99%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
2.	Changed Numbers	88%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
3.	Changed Numbers	99%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
4.	Changed Numbers	88%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
5.	Changed Numbers	88%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____

6.	Changed Numbers	90%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
7.	Changed Numbers	99%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
8.	Changed Numbers	90%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
9.	Changed Numbers	88%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
10.	Changed Numbers	99%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
11.	Changed Numbers	99%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
12.	Changed Numbers	99%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____

13.	Changed Numbers	99%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
14.	Changed Numbers	90%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
15.	Changed Numbers	88%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
16.	Changed Numbers	90%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
17.	Changed Numbers	90%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
18.	Changed Numbers	88%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
19.	Changed Numbers	90%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____

20.	Changed Numbers	88%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	78%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
21.	Changed Numbers	90%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
22.	Changed Numbers	90%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
23.	Changed Numbers	90%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your Rating _____
24.	Changed Numbers	88%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
25.	Changed Numbers	88%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____
26.	Changed Numbers	99%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your Rating _____

27.	Changed Numbers	99%	90%
	Disconnected Service	78%	80%
	Vacation Disconnects	80%	80%
	Vacant Numbers	78%	80%
	Disconnects Non-Pay	96%	100%
	Incorrectly Dialed Calls	86%	95%

Your Rating _____

Questionnaire 6

CENTRAL OFFICE

On the following page, you will be asked to rate the overall performance of each of 8 exchanges on Central Office.

For each exchange, you will be told whether the exchange has Power or Generators, is on a Scheduled Maintenance Program, has a Frame in satisfactory condition and Facilities in satisfactory condition.

The standards for Central Office are:

Power and Generators	100%	An exchange with backup power or a generator is 100% compliance. Without these, the score is 0%.
Scheduled Routine Program	95%	An exchange on a Scheduled Routine Maintenance Program is in 100% compliance. One without such a program scores 0%.
Frame	95%	A frame in satisfactory condition is in 100% compliance; otherwise, 0%.
Facilities	95%	An exchange facility in satisfactory condition is in 100% compliance; otherwise 0%.

Notes:

Each exchange should have sufficient batteries to provide 3-5 hours of power or a standby generator on site.

Each exchange shall have a Scheduled Routine Program of maintenance "aimed at achieving efficient operation of its system so as to permit the rendering of safe, adequate and continuous service at all times."

Each exchange should have a frame that is judged to be in satisfactory operating condition "as to permit the rendering of safe, adequate and continuous service at all times."

The facilities of each exchange shall be judged to be in satisfactory operating condition "as to permit the rendering of safe, adequate and continuous service at all times." Facilities include restroom facilities with running water.

Questionnaire 6 - Central Office

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10
Worst Best
Possible Possible
Performance Performance
On Central Office

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Power and Generators	0%	100%	
	Scheduled Routine Program	0%	95%	
	Frame	100%	95%	
	Facilities	100%	95%	Your Rating _____
2.	Power and Generators	100%	100%	
	Scheduled Routine Program	0%	95%	
	Frame	100%	95%	
	Facilities	0%	95%	Your Rating _____
3.	Power and Generators	100%	100%	
	Scheduled Routine Program	0%	95%	
	Frame	0%	95%	
	Facilities	100%	95%	Your Rating _____
4.	Power and Generators	0%	100%	
	Scheduled Routine Program	0%	95%	
	Frame	0%	95%	
	Facilities	0%	95%	Your Rating _____
5.	Power and Generators	0%	100%	
	Scheduled Routine Program	100%	95%	
	Frame	0%	95%	
	Facilities	100%	95%	Your Rating _____
6.	Power and Generators	100%	100%	
	Scheduled Routine Program	100%	95%	
	Frame	100%	95%	
	Facilities	100%	95%	Your Rating _____
7.	Power and Generators	0%	100%	
	Scheduled Routine Program	100%	95%	
	Frame	100%	95%	
	Facilities	0%	95%	Your Rating _____

8.	Power and Generators	100%	100%
	Scheduled Routine Program	100%	95%
	Frame	0%	95%
	Facilities	0%	95%

Your Rating _____

Questionnaire 7

INSTALLATION AND REPAIR SERVICES

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Installation and Repair Services.

For each utility, you will be provided with information on the percentage of times that standards regarding Same-Day Restoral of Service, 24-hour Restoral of Service, Repair Appointments Kept, Primary Service Appointments Kept, 3-Day Primary Service Installation and Rebates for Interrupted Service are satisfied.

Repair Service standards are:

Same Day Restoral	80% restored on same day
24 Hour Restoral	95% restored within 24 hours
Repair Appointments	95% of appointments kept
Rebates - Over 24 hour	Provides rebates 100% of time
3-Day Primary Service	90% of service installations must occur within 3-days of the request for service
Primary Service Appointments	90% of appointments kept

Notes:

Service should be restored as soon as possible and, at least, within 24 hours of reported trouble.

Appointments are set within time frames of 7-12 A.M., 12-5 P.M., or 5-9 P.M., or for a specific hour of day. An appointment is considered to have been kept if the representative arrives within the time frame set.

When service is interrupted for more than 24 hours, customers will be given pro-rated rebates for the period of interrupted service.

Primary Service Appointments, like those for repair service are considered to have been kept if the representative arrives within the time frame set.

3-Day Primary Service means that installation of service must occur within 3-days from the request for immediate service or, if requested, at a later date.

1 2
Worst
Possible
Performance
On Dial Tone
Delay

9 10
Best
Possible
Performance
On Dial Tone
Delay

	Company's Score	PSC Rule	
1. Same Day Restoral	93%	80%	
24 Hour Restoral	93%	95%	
Repair Appointments	100%	95%	
Rebates - Over 24 Hours	0%	100%	
3-Day Primary Service	100%	90%	
Appointments for Primary Service Kept	100%	90%	Your Rating _____
2. Same Day Restoral	80%	80%	
24 Hour Restoral	95%	95%	
Repair Appointments	100%	95%	
Rebates - Over 24 Hours	0%	100%	
3-Day Primary Service	100%	90%	
Appointments for Primary Service Kept	90%	90%	Your Rating _____
3. Same Day Restoral	62%	80%	
24 Hour Restoral	95%	95%	
Repair Appointments	95%	95%	
Rebates - Over 24 Hours	0%	100%	
3-Day Primary Service	80%	90%	
Appointments for Primary Service Kept	90%	90%	Your Rating _____
4. Same Day Restoral	80%	80%	
24 Hour Restoral	100%	95%	
Repair Appointments	80%	95%	
Rebates - Over 24 Hours	100%	100%	
3-Day Primary Service	80%	90%	
Appointments for Primary Service Kept	90%	90%	Your Rating _____

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 5. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 6. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 7. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 8. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 9. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 10. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 11. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 12. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 13. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 14. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 15. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 16. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 17. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 18. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 19. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 20. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 21. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 22. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 23. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 24. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 25. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 26. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 27. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |

Questionnaire 8

TRANSMISSION

On the following page, you will be asked to rate the overall performance of each of 27 exchanges on Transmission.

For each exchange, you will be told whether the exchange meets the standard regarding Dial Tone Level, Central Office Loss, M.W. Frequency, Central Office Metallic Noise, Central Office Impulse Noise, Test Numbers, and Subscriber Loops.

The standards are:

Dial Tone Level	100%	An exchange with Dial Tone Level between -5 to -22 dBm is in 100% compliance. Outside of that range = 0%.
Central Office Loss	100%	An exchange with C.O. Loss of 0 to -2.5 dB is in 100% compliance. Outside of range = 0%.
Milliwatt Frequency	100%	An exchange operating at a Milliwatt Frequency between 994 to 1014 Hz and proper levels is in 100% compliance. Outside of range = 0%.
Central Office Noise, Metallic	100%	An exchange operating with C.O. Noise, Metallic, of 20 dBm or less is in 100% compliance. Outside of range = 0%.
Central Office Noise, Impulse	100%	An exchange operating C.O. Noise, Impulse, of no more than 5 counts above 59 dBm in 5 minutes is in 100% compliance. Outside of range = 0%.
Test Numbers	100%	An exchange with 3-line rotary test numbers and balance termination number is in 100% compliance. Otherwise, = 0%.
Subscriber Loops	98%	of subscriber loops have acceptable transmission performance.

Questionnaire 8 - Transmission

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
	Worst Possible Performance On Transmission								Best Possible Performance On Transmission		
									<u>Company's Score</u>	<u>PSC Rule</u>	
1.	C.O. Dial Tone Level								100%	100%	
	Central Office Loss								100%	100%	
	C.O. M.W. Frequency								0% (outside)	100%	
	Central Office Noise, Metallic								100%	100%	
	Central Office Noise, Impulse								0% (outside)	100%	
	Test Numbers								100%	100%	
	Subscriber Loops								100%	98%	Your Rating _____
2.	C.O. Dial Tone Level								0% (outside)	100%	
	Central Office Loss								0% (outside)	100%	
	C.O. M.W. Frequency								100%	100%	
	Central Office Noise, Metallic								100%	100%	
	Central Office Noise, Impulse								100%	100%	
	Test Numbers								0% (outside)	100%	
	Subscriber Loops								96%	98%	Your Rating _____
3.	C.O. Dial Tone Level								100%	100%	
	Central Office Loss								0% (outside)	100%	
	C.O. M.W. Frequency								100%	100%	
	Central Office Noise, Metallic								100%	100%	
	Central Office Noise, Impulse								0% (outside)	100%	
	Test Numbers								100%	100%	
	Subscriber Loops								100%	98%	Your Rating _____
4.	C.O. Dial Tone Level								100%	100%	
	Central Office Loss								0% (outside)	100%	
	C.O. M.W. Frequency								100%	100%	
	Central Office Noise, Metallic								0% (outside)	100%	
	Central Office Noise, Impulse								100%	100%	
	Test Numbers								0% (outside)	100%	
	Subscriber Loops								100%	98%	Your Rating _____

- | | | | | |
|----|--------------------------------|--------------|------|-------------------|
| 5. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |
| 6. | C.O. Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 7. | C.O. Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |
| 8. | C.O. Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 9. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |

- | | | | | |
|-----|--------------------------------|--------------|------|----------------------|
| 10. | C.O. Dial Tone Level | 0% (outside) | 100% | Your
Rating _____ |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 100% | 98% | |
| 11. | C.O. Dial Tone Level | 100% | 100% | Your
Rating _____ |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 96% | 98% | |
| 12. | C.O. Dial Tone Level | 100% | 100% | Your
Rating _____ |
| | Central Office Loss | 0% (outside) | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 96% | 98% | |
| 13. | C.O. Dial Tone Level | 100% | 100% | Your
Rating _____ |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 100% | 98% | |
| 14. | C.O. Dial Tone Level | 0% (outside) | 100% | Your
Rating _____ |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 100% | 98% | |

- | | | | | |
|-----|--------------------------------|--------------|------|-------------------|
| 15. | C.O. Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |
| 16. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | C.O. M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 17. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 18. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 19. | C.O. Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | C.O. M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 100% | 98% | Your Rating _____ |

20.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	100%	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	100%	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	100%	98%	Your Rating _____
21.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	0% (outside)	100%	
	Central Office Noise, Metallic	0% (outside)	100%	
	Central Office Noise, Impulse	0% (outside)	100%	
	Test Numbers	0% (outside)	100%	
	Subscriber Loops	98%	98%	Your Rating _____
22.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	100%	100%	
	Central Office Noise, Metallic	0% (outside)	100%	
	Central Office Noise, Impulse	0% (outside)	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	98%	98%	Your Rating _____
23.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	0% (outside)	100%	
	C.O. M.W. Frequency	0% (outside)	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	0% (outside)	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	96%	98%	Your Rating _____
24.	C.O. Dial Tone Level	0% (outside)	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	100%	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	100%	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	98%	98%	Your Rating _____

25.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	100%	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	100%	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	98%	98%	Your Rating _____
26.	C.O. Dial Tone Level	100%	100%	
	Central Office Loss	100%	100%	
	C.O. M.W. Frequency	0% (outside)	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	100%	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	96%	98%	Your Rating _____
27.	C.O. Dial Tone Level	0% (outside)	100%	
	Central Office Loss	0% (outside)	100%	
	C.O. M.W. Frequency	0% (outside)	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	100%	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	100%	98%	Your Rating _____

Questionnaire 9
CUSTOMER COMPLAINTS

On the following page, you will be asked to rate the overall performance of 3 exchanges on Customer Complaints. Customer complaints refers to the number of justified complaints by consumers to the PSC regarding a telephone company.

The average number of complaints per 1000 customers for the entire State of Florida is 0.074.

Questionnaire 9 - Justified Customer Complaints

Please Rate Each Utility

1
Worst
Possible
Performance
On Justified
Customer Complaints

10
Best
Possible
Performance
On Justified
Customer Complaints

Company's
Score

- | | | | |
|----|--|-------|-------------------|
| 1. | Justified Customer Complaint's per 1,000 lines | 1.003 | Your Rating _____ |
| 2. | Justified Customer Complaint's per 1,000 lines | 0.008 | Your Rating _____ |
| 3. | Justified Customer Complaint's per 1,000 lines | 0.074 | Your Rating _____ |

Questionnaire 10

Overall Evaluation of Residential Service

On the basis of your answers to Questionnaire 1 - 9, we can understand your criteria for evaluating exchanges in each of these nine areas. Now we need to know the relative weights you would place on these major areas in making an overall evaluation of an exchange.

Therefore, in the final questionnaire, you will be presented with hypothetical profiles of phone companies described in terms of scores from 1 to 10 on each of the major areas described above. In addition, you will be told a price for basic monthly service. For example:

1.	Dial Tone Delay	6
2.	Call Completions and Billing	5
3.	Answer Time	3
4.	Directory and Directory Assistance	9
5.	Intercept Services	4
6.	Central Office	10
7.	Installation and Repair Services	7
8.	Transmission	4
9.	Customer Complaints	9
10.	Price	\$12

The profiles will differ in the scores the exchanges receive on these nine major areas and the price of basic service. By seeing how your evaluations change in response to changes in scores on these criteria, we can infer the relative weight that you would assign to each.

On the next page, you will be presented with profiles of hypothetical exchanges which differ in the scores they received in each of the 9 major areas. Assume that you are the one who assigned these scores. In your capacity as an expert evaluating exchanges in the public interest, we will ask you to rate the overall performance within each exchange described. Again, we will be able to infer your relative weights by seeing how your overall ratings change in response to differences among the profiles on each of the 9 major areas.

What makes this task difficult is that, to make an overall rating of an exchange like the one in the example above, you must remind yourself each time what it means to have received a 6 on Dial Tone Delay, a 5 on Call Completions and Billing, etc. To do this, you will have to flip back to the earlier questionnaires. If you don't do this, the 1 to 10 ratings will seem too abstract, and you won't be able to accurately reflect your perceptions of the importance of each to overall performance.

By combining your responses with those of other experts, we will be able to propose a formula for weighting performance scores to provide overall evaluations of each exchange. This formula captures the evaluation policies of experts like yourself, allowing the PSC an easy and accurate method of

evaluating phone companies in the future. This technique has proved to be very effective in performance evaluation in many areas.

We very much appreciate your taking time from your busy schedule to complete this survey. Your inputs are extremely valuable.

If you have any questions or concerns please call either:

John Lynch (Office: 904-392-0121; Home 904-374-8991) or
Thomas Buzas (Office: 313-487-3323; Home 313-429-3042).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing
University of Florida

Dr. Thomas E. Buzas
Associate Professor of Marketing
Eastern Michigan University

TEB/JGL/vjd

Questionnaire 10 - Overall Evaluation of Residential Service

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10	
Very Bad										Very Good
Overall										Overall
Performance										Performance

1. Dial Tone Delay 5
 Call Completions 4
 Answer Time 5
 Directory and Directory Assistance 4
 Intercept Services 3
 Central Office 5
 Installation and Repair Services 4
 Transmission 5
 Customer Complaints 3
 Price on basic monthly service \$6.00

Your Rating _____

2. Dial Tone Delay 9
 Call Completions 10
 Answer Time 5
 Directory and Directory Assistance 9
 Intercept Services 9
 Central Office 5
 Installation and Repair Services 4
 Transmission 9
 Customer Complaints 8
 Price on basic monthly service \$6.00

Your Rating _____

3. Dial Tone Delay 9
 Call Completions 4
 Answer Time 5
 Directory and Directory Assistance 9
 Intercept Services 3
 Central Office 10
 Installation and Repair Services 4
 Transmission 5
 Customer Complaints 8
 Price on basic monthly service \$12.00

Your Rating _____

8. Dial Tone Delay 5
 Call Completions 10
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 3
 Central Office 10
 Installation and Repair Services 10
 Transmission 9
 Customer Complaints 3
 Price on basic monthly service \$6.00

Your Rating _____

9. Dial Tone Delay 5
 Call Completions 4
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 9
 Central Office 5
 Installation and Repair Services 10
 Transmission 5
 Customer Complaints 3
 Price on basic monthly service \$12.00

Your Rating _____

10. Dial Tone Delay 5
 Call Completions 10
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 3
 Central Office 5
 Installation and Repair Services 4
 Transmission 5
 Customer Complaints 8
 Price on basic monthly service \$12.00

Your Rating _____

11. Dial Tone Delay 9
 Call Completions 4
 Answer Time 10
 Directory and Directory Assistance 4
 Intercept Services 9
 Central Office 10
 Installation and Repair Services 10
 Transmission 5
 Customer Complaints 8
 Price on basic monthly service \$6.00

Your Rating _____

16.	Dial Tone Delay	9
	Call Completions	10
	Answer Time	10
	Directory and Directory Assistance	4
	Intercept Services	3
	Central Office	10
	Installation and Repair Services	4
	Transmission	5
	Customer Complaints	3
	Price on basic monthly service	\$6.00

Your Rating _____

APPENDIX B

Department of General Services Residential Service Survey

1

Dear Participant:

The Public Service Commission is developing methods for evaluating local telephone companies in the State of Florida. As you know, the PSC evaluates how well each phone company is meeting Service Evaluation Rules covering a large number of topics. The PSC wants to determine how to combine a phone company's scores to assign a single number reflecting the PSC's overall evaluation of that utility. While this evaluation should represent the interests of telephone customers, those customers lack the technical expertise to trade off strengths and weaknesses that a telephone company might have in the different areas covered by the PSC's service evaluations. Therefore the PSC has asked us to survey experts like you to determine what weights should be placed on each topic. We are asking you to take the perspective of a knowledgeable residential customer.

A series of short questionnaires is attached, pertaining to nine major topics governed by Service Evaluation Rules: Dial Tone Delay, Call Completions and Billing, Answer Time, Directory and Directory Assistance, Intercept Services, Central Office, Installation and Repair Services, Transmission, and Customer Complaints. The PSC would like to develop criteria for rating phone companies on a 1 to 10 scale for each of these areas.

The cover page for each questionnaire will present the Service Evaluation Rules governing that topic. For example, the standard on dial tone delay is "95% of calls receive a dial tone within 3 seconds." On the second page of each questionnaire, you will be shown several hypothetical utilities that vary in how well they meet these specific rules in an exchange. You will be asked to rate each one on a scale from 1 to 10, reflecting your evaluation of the utility in that area:

1	2	3	4	5	6	7	8	9	10
Worst Possible									Best
Performance									Possible
									Performance

(This evaluation should reflect the consumer's perspective, ignoring company cost considerations.)

To illustrate your task, you might be asked to rate two phone companies on "Answer Time" given the following evaluation results:

1. Operator Answer Time	90%	2. Operator Answer Time	89%
Directory Assistance	89%	Directory Assistance	90%
Repair Service	90%	Repair Service	98%
Business Office	80%	Business Office	67%

By analyzing how you evaluate utilities that differ in their performance on these 4 criteria, we can infer what relative weights you think should be assigned to each in giving it an overall rating on "Answer Time."

By combining your responses with those of other experts, we will be able to propose a formula for weighting performance scores to provide evaluations of each local telephone company. This formula captures the evaluation policies of experts like yourself, allowing the PSC an easy and accurate method of evaluating phone companies in the future. This technique has proved to be extremely effective in performance evaluation in many areas.

If you have any questions or concerns please call either:

John Lynch (Office: 904-392-0121; Home: 904-374-8991) or
Thomas Buzas (Office: 313-487-3323; Home: 313-429-3042).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing
University of Florida

Dr. Thomas Buzas
Associate Professor of Marketing
Eastern Michigan University

TB/JL/vjd

P.S. This questionnaire will take about three hours in total to finish. It need not (and probably should not) be completed in a single sitting, although we ask that you complete all parts within a week's time. Please fill out the questionnaires in the order in which they are stapled in the booklet. Thanks very much.

Questionnaire 1

DIAL TONE DELAY

On the following page, you will be asked to rate the overall performance of each of 5 exchanges on Dial Tone Delay.

For each exchange, you will be provided with the percentage of time that a call received a dial tone within 3 seconds.

The rule requirement is:

Dial Tone Delay	95% of calls receive dial tone in 3 seconds
-----------------	---

Questionnaire 1 - Dial Tone Delay

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10	
Worst										Best
Possible										Possible
Performance										Performance
On Dial Tone										On Dial Tone
Delay										Delay

		<u>Company's</u> <u>Score</u>	<u>PSC</u> <u>Rule</u>	
1.	Dial Tone Delay	98%	95%	Your Rating _____
2.	Dial Tone Delay	94%	95%	Your Rating _____
3.	Dial Tone Delay	100%	95%	Your Rating _____
4.	Dial Tone Delay	97%	95%	Your Rating _____
5.	Dial Tone Delay	95%	95%	Your Rating _____

Questionnaire 2

CALL COMPLETIONS AND BILLING

On the following page, you will be asked to rate the overall performance of each of 18 exchanges on Call Completions and Billing.

For each exchange, you will be given the percentage of calls that are completed 1) Intra-office, 2) Inter-office, 3) EAS, 4) Intra-LATA DDD, 5) Inter-LATA DDD, and 6) 911 Service. You will also be given 7) the percentage of calls that are timed accurately for the purpose of billing the customer.

The standards are:

Intra-office	95% of calls completed
Inter-office	95% of calls completed
EAS	95% of calls completed
Intra-LATA DDD	95% of calls completed
Inter-LATA DDD	90% of calls completed by your provider
911 Service	100% of calls delivered to the 911 authority
Billing Accuracy	97% of Intra-LATA calls are timed accurately

Notes:

A telephone call to a valid number is considered completed if it encounters "an audible ring, line busy signal or non-working number intercept facility (operator or recording) after completion of dialing."

An Intra-office call is a call to a number with the same first three (3) digits as your own.

Inter-office calls are calls to numbers with different 3-digit codes but within your home exchange.

EAS calls are to different home exchanges within your calling area (non-toll calls).

Intra-LATA DDD are toll calls carried by your local company.

Inter-LATA DDD are toll calls carried by a long-distance carrier, such as AT&T or MCI. Assume the long-distance carrier operates at 100% for purposes of this survey, so that Inter-LATA DDD score reflects only the local phone company's performance in the link.

All 911 Calls must be delivered to the 911 authority, which is then responsible for answering and responding to the calls.

Billing Accuracy refers to the proportion of Intra-LATA calls that are accurately timed.

Questionnaire 2 - Call Completions and Billing

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst					Best				
Possible					Possible				
Performance On					Performance On				
Call Completions					Call Completions				
and Billing					and Billing				

		<u>Company's</u> <u>Score</u>	<u>PSC</u> <u>Rule</u>	
1.	Intra-office	100%	95%	
	Inter-office	95%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	99%	95%	
	Inter-LATA DDD	88%	90%	
	Billing Accuracy	100%	97%	
	911 Service	99%	100%	Your Rating _____
2.	Intra-office	100%	95%	
	Inter-office	94%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	99%	95%	
	Inter-LATA DDD	90%	90%	
	Billing Accuracy	96%	97%	
	911 Service	99%	100%	Your Rating _____
3.	Intra-office	95%	95%	
	Inter-office	95%	95%	
	EAS	100%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	96%	97%	
	911 Service	100%	100%	Your Rating _____
4.	Intra-office	100%	95%	
	Inter-office	95%	95%	
	EAS	93%	95%	
	Intra-LATA DDD	95%	95%	
	Inter-LATA DDD	100%	90%	
	Billing Accuracy	97%	97%	
	911 Service	99%	100%	Your Rating _____

- | | | | | |
|-----|------------------|------|------|-------------------|
| 5. | Intra-office | 100% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 6. | Intra-office | 100% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 7. | Intra-office | 94% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 8. | Intra-office | 100% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 9. | Intra-office | 95% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 90% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 10. | Intra-office | 94% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |

- | | | | | |
|-----|------------------|------|------|-------------------|
| 11. | Intra-office | 94% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 100% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 12. | Intra-office | 95% | 95% | |
| | Inter-office | 94% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 100% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 13. | Intra-office | 94% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 90% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 100% | 100% | Your Rating _____ |
| 14. | Intra-office | 95% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 93% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 97% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 15. | Intra-office | 94% | 95% | |
| | Inter-office | 100% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 99% | 95% | |
| | Inter-LATA DDD | 100% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |
| 16. | Intra-office | 95% | 95% | |
| | Inter-office | 95% | 95% | |
| | EAS | 95% | 95% | |
| | Intra-LATA DDD | 95% | 95% | |
| | Inter-LATA DDD | 88% | 90% | |
| | Billing Accuracy | 96% | 97% | |
| | 911 Service | 99% | 100% | Your Rating _____ |

17.	Intra-office	95%	95%	
	Inter-office	94%	95%	
	EAS	95%	95%	
	Intra-LATA DDD	95%	95%	
	Inter-LATA DDD	90%	90%	
	Billing Accuracy	100%	97%	
	911 Service	99%	100%	Your Rating _____
18.	Intra-office	94%	95%	
	Inter-office	95%	95%	
	EAS	93%	95%	
	Intra-LATA DDD	90%	95%	
	Inter-LATA DDD	90%	90%	
	Billing Accuracy	100%	97%	
	911 Service	99%	100%	Your Rating _____

Questionnaire 3

ANSWER TIME

On the following page, you will be asked to rate the overall performance of each of 9 exchanges on Answer Time.

For each exchange, you will be given the percent of calls answered within a certain time frame by 1) Operator, 2) Directory Assistance, 3) Repair Service, and 4) Business Office.

The Answer Time standards established for each dimension are:

Operator Answer Time	90% of calls answered in 10 seconds
Directory Assistance	90% of calls answered in 20 seconds
Repair Service	90% of calls answered in 20 seconds
Business Office	80% of calls answered in 20 seconds

Notes:

The term "answered" means "more than an acknowledgment that the customer is waiting on the line. It shall mean that the operator or service representative is ready to render assistance and/or accept the information necessary to process the call." An exception is with calls to Business Office services "where company practice provides that such calls are directed to an operator position. In such cases, an additional twenty (20) seconds will be allowed to extend the call excluding the time required for the customer to provide sufficient information to the operator in order to process the call. In those cases where the call cannot be extended within the allotted interval, the calling party is to be given the option of placing the call again or providing a number by which a company representative will return the call within ten (10) minutes or at a time mutually convenient to the parties."

"All telephone companies are expected to answer their main published telephone number on a twenty-four (24) hour a day basis. Answering may be handled by a special operator at the toll center or directory assistance facility when the company offices are closed. Where after-hour calls are not handled as above, at least the first published Business Office number will be equipped with a telephone answering device which will notify callers after the normal working hours of the hours of operation for that business office. Where recording devices are used, the message shall include the telephone number assigned to handle urgent or emergency calls when the business office is closed."

Questionnaire 3 - Answer Time

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst					Best				
Possible					Possible				
Performance					Performance				
On Answer Time					On Answer Time				

		<u>Company's</u> <u>Score</u>	<u>PSC</u> <u>Rule</u>	
1.	Operator Answer Time	90%	90%	
	Directory Assistance	89%	90%	
	Repair Service	90%	90%	
	Business Office	80%	80%	Your rating _____
2.	Operator Answer Time	89%	90%	
	Directory Assistance	89%	90%	
	Repair Service	75%	90%	
	Business Office	67%	80%	Your rating _____
3.	Operator Answer Time	100%	90%	
	Directory Assistance	89%	90%	
	Repair Service	98%	90%	
	Business Office	100%	80%	Your rating _____
4.	Operator Answer Time	90%	90%	
	Directory Assistance	90%	90%	
	Repair Service	98%	90%	
	Business Office	67%	80%	Your rating _____
5.	Operator Answer Time	89%	90%	
	Directory Assistance	90%	90%	
	Repair Service	90%	90%	
	Business Office	100%	80%	Your rating _____
6.	Operator Answer Time	90%	90%	
	Directory Assistance	99%	90%	
	Repair Service	75%	90%	
	Business Office	100%	80%	Your rating _____
7.	Operator Answer Time	100%	90%	
	Directory Assistance	99%	90%	
	Repair Service	90%	90%	
	Business Office	67%	80%	Your rating _____

8.	Operator Answer Time	89%	90%	Your rating _____
	Directory Assistance	99%	90%	
	Repair Service	98%	90%	
	Business Office	80%	80%	
9.	Operator Answer Time	100%	90%	Your rating _____
	Directory Assistance	90%	90%	
	Repair Service	75%	90%	
	Business Office	80%	80%	

Questionnaire 4

DIRECTORY AND DIRECTORY ASSISTANCE

On the following page, you will be asked to rate the overall performance of each of 9 exchanges on Directory and Directory Assistance.

For each exchange, you will be given the percentage of the 18 rules regarding Directory Service that a company meets. You will also be given the percentage of New Numbers that are available within 48 hours from directory assistance, the percentage of Numbers that are published in the Directory, the percentage of calls to directory assistance that are correctly billed, and the percentage of primary service installations that occur within 3-days of request.

The rule requirements are:

Directory Service	100% of the 18 rules about directory are met.
New Numbers	100% of <u>all</u> new numbers are available in 48 hours.
Numbers in Directory	99% of <u>all</u> numbers in directory can be verified by the directory assistance operator.
Billing Accuracy	100% of calls for directory assistance are billed correctly.

Notes:

A "Directory" must follow 18 rules.

1. An updated directory should be published normally every 12 months and, at least, within 15 months.
2. The directory shall list the name, address and telephone number of subscribers located in the area covered by the directory, excepting public telephones and unlisted numbers.
3. The directory shall list all subscribers (exceptions noted under 2 above) located in the calling area (toll free calls).
4. Upon request by any residential subscriber, the exchange company shall list an additional first name under the same address, telephone number and surname of the subscriber.
5. There shall be no charge for dual listings (3 above).
6. Listings shall be in alphabetical order.
7. Each subscriber served by a directory shall be provided with 1 copy for each access line.
8. Subject to availability, additional directories shall be provided by the exchange company, which may charge a reasonable fee.
9. The company name, area covered, month and year published shall be listed on the inside front cover of the directory.
10. Emergency numbers, including police, fire and

ambulance services, and where available instructions for 911 service shall be published on the inside front cover.

11. The following block shall be conspicuously displayed on the inside front cover or on the first page of the directory:

THE FLORIDA PUBLIC SERVICE COMMISSION
Office of Consumer Affairs
101 East Gaines Street
Tallahassee, Florida 32301-8153
Phone Toll Free 1-800-342-3552

12. Directions for using local exchange and long distance telephone services shall appear on the front pages of the directory preceding subscriber listings.
13. Directions for calling repair service and directory assistance shall also appear on the front pages of the directory preceding subscriber listings.
14. The location of the business office and instructions for calling the business office shall appear on the front pages of the directory preceding subscriber listings.
15. Special instructions for hearing/speech impaired also shall appear on the front pages of the directory preceding subscriber listings.
16. Telecommunications Devices for the Deaf (TDD) numbers for emergency and informational services shall appear on the front pages of the directory preceding subscriber listings.
17. Upon request by a subscriber, special notation indicating TDD user listings shall be provided at no extra charge.
18. There shall be no charge for non-published and non-listed TDD numbers requested by the subscriber.

A company's score on "Directory Service" reflects what percent of those 18 rules are met.

For New Numbers, "directory assistance operators shall maintain records of all telephone numbers (except for non-published telephone numbers) in the area for which they have the responsibility for furnishing service. All new or changed listings shall be provided to directory assistance operators within forty-eight (48) hours after connection of service, excluding Saturdays, Sundays and holidays."

Numbers in Directory refers to the percentage of numbers, excepting unlisted numbers and new numbers, randomly selected from the directory, that the directory assistance operator can verify.

Billing accuracy refers to the percentage of calls to directory assistance that for which the caller is billed or not billed, in accordance with its tariff.

Questionnaire 4 - Adequacy of Directory and Directory Assistance

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst Possible Performance On Directory and Directory Assistance					Best Possible Performance On Directory and Directory Assistance				

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Numbers in Directory	98%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
2.	Numbers in Directory	99%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____
3.	Numbers in Directory	98%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
4.	Numbers in Directory	100%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	89%	100%	
	New Numbers	100%	100%	Your Rating _____
5.	Numbers in Directory	100%	99%	
	Billing Accuracy	100%	100%	
	Directory Service	100%	100%	
	New Numbers	74%	100%	Your Rating _____
6.	Numbers in Directory	100%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____
7.	Numbers in Directory	98%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____

8.	Numbers in Directory	99%	99%	
	Billing Accuracy	96%	100%	
	Directory Service	100%	100%	
	New Numbers	100%	100%	Your Rating _____
9.	Numbers in Directory	99%	99%	
	Billing Accuracy	97%	100%	
	Directory Service	89%	100%	
	New Numbers	74%	100%	Your Rating _____

Questionnaire 5

INTERCEPT SERVICES

On the following page, you will be asked to rate the overall performance of each of 16 exchanges on Intercept Services. Intercept service is the service provided when a customer dialing an out-of-service or changed number or some other call which cannot be completed is answered automatically either by a recorded message or an operator.

For each exchange, you will be provided the percentage of calls answered automatically on 1) Changed Numbers, 2) Disconnected Service, 3) Vacation Disconnects, 4) Vacant Numbers and 5) Disconnects non-pay. You will also be provided with the percentage of rules covering 6) Incorrectly Dialed Calls that are satisfied by the company.

The rule requirements are:

Changed Numbers	90% of calls answered in 20 seconds
Disconnected Service	80% of calls answered in 20 seconds
Vacation Disconnects	80% of calls answered in 20 seconds
Vacant Numbers	80% of calls answered in 20 seconds
Disconnects Non-Pay	100% of calls answered in 20 seconds
Incorrectly Dialed Calls	95% of 7 error types intercepted. An exchange where all 7 types of errors are intercepted is in 100% compliance.

Notes:

For changed numbers, the caller is informed of the new number.

For Disconnected Service, the caller is informed that the number reached is not in service.

A Vacation Disconnect occurs when a number is temporarily disconnected at the customer's request.

For Vacant Numbers, the caller is informed that the number reached is not in service.

With Disconnects due to non-payment, the caller is told that the number has been temporarily disconnected.

The system must intercept 7 types of Incorrectly Dialed Calls, and indicate to the caller by recording, busy signal or other means that the call cannot be completed:

1. Toll Access Not Dialed on Toll Calls.
2. Toll Access and Home Area Code Dialed.
3. Toll Access and Invalid Office Code Dialed.
4. Toll Access and Non-Working Area Code Dialed.
5. Toll Access and Insufficient Digits Dialed.
6. Toll Access Dialed on EAS Call.
7. Area Code Dialed on EAS code.

Questionnaire 5 - Intercept Services

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Worst					Best				
Possible					Possible				
Performance					Performance				
On Intercept Services					On Intercept Services				

		Company's <u>Score</u>	PSC <u>Rule</u>	
1.	Changed Numbers	90%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	80%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your rating _____
2.	Changed Numbers	99%	90%	
	Disconnected Service	78%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	96%	100%	
	Incorrectly Dialed Calls	100%	95%	Your rating _____
3.	Changed Numbers	90%	90%	
	Disconnected Service	80%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your rating _____
4.	Changed Numbers	88%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	98%	80%	
	Vacant Numbers	100%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	100%	95%	Your rating _____
5.	Changed Numbers	99%	90%	
	Disconnected Service	100%	80%	
	Vacation Disconnects	78%	80%	
	Vacant Numbers	80%	80%	
	Disconnects Non-Pay	100%	100%	
	Incorrectly Dialed Calls	86%	95%	Your rating _____

- | | | | | |
|-----|--------------------------|------|------|-------------------|
| 6. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 98% | 80% | |
| | Vacant Numbers | 78% | 80% | |
| | Disconnects Non-Pay | 100% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 7. | Changed Numbers | 99% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 78% | 80% | |
| | Disconnects Non-Pay | 100% | 100% | |
| | Incorrectly Dialed Calls | 100% | 95% | Your rating _____ |
| 8. | Changed Numbers | 88% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 100% | 80% | |
| | Disconnects Non-Pay | 100% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 9. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 98% | 80% | |
| | Vacant Numbers | 80% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 10. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 78% | 80% | |
| | Vacant Numbers | 80% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 100% | 95% | Your rating _____ |
| 11. | Changed Numbers | 99% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 80% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 12. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 100% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 78% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 100% | 95% | Your rating _____ |

- | | | | | |
|-----|--------------------------|------|------|-------------------|
| 13. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 100% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 100% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 14. | Changed Numbers | 90% | 90% | |
| | Disconnected Service | 78% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 80% | 80% | |
| | Disconnects Non-Pay | 100% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 15. | Changed Numbers | 88% | 90% | |
| | Disconnected Service | 78% | 80% | |
| | Vacation Disconnects | 78% | 80% | |
| | Vacant Numbers | 78% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 86% | 95% | Your rating _____ |
| 16. | Changed Numbers | 88% | 90% | |
| | Disconnected Service | 80% | 80% | |
| | Vacation Disconnects | 80% | 80% | |
| | Vacant Numbers | 80% | 80% | |
| | Disconnects Non-Pay | 96% | 100% | |
| | Incorrectly Dialed Calls | 100% | 95% | Your rating _____ |

Questionnaire 6

CENTRAL OFFICE

On the following page, you will be asked to rate the overall performance of each of 8 exchanges on Central Office.

For each exchange, you will be told whether the exchange has Power or Generators, is on a Scheduled Maintenance Program, has a Frame in satisfactory condition and Facilities in satisfactory condition.

The standards for Central Office are:

Power and Generators	100%	An exchange with backup power or a generator is 100% compliance. Without these, the score is 0%.
Scheduled Routine Program	95%	An exchange on a Scheduled Routine Maintenance Program is in 100% compliance. One without such a program scores 0%.
Frame	95%	A frame in satisfactory condition is in 100% compliance; otherwise, 0%.
Facilities	95%	An exchange facility in satisfactory condition is in 100% compliance; otherwise, 0%.

Notes:

Each exchange should have sufficient batteries to provide 3-5 hours of power or a standby generator on site.

Each exchange shall have a Scheduled Routine Program of maintenance "aimed at achieving efficient operation of its system so as to permit the rendering of safe, adequate and continuous service at all times."

Each exchange should have a frame that is judged to be in satisfactory operating condition "as to permit the rendering of safe, adequate and continuous service at all times."

The facilities of each exchange shall be judged to be in satisfactory operating condition "as to permit the rendering of safe, adequate and continuous service at all times." Facilities include restroom facilities with running water.

Questionnaire 6 - Central Office

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10
 Worst
 Possible
 Performance
 On Central Office

Best
 Possible
 Performance
 On Central Office

		<u>Company's Score</u>	<u>PSC Rule</u>	
1.	Power and Generators Scheduled Routine Program 0% 95% Frame Facilities	0% 100% 100%	100% 95% 95%	Your Rating _____
2.	Power and Generators Scheduled Routine Program 0% 95% Frame Facilities	100% 100% 0%	100% 95% 95%	Your Rating _____
3.	Power and Generators Scheduled Routine Program 0% 95% Frame Facilities	100% 0% 100%	100% 95% 95%	Your Rating _____
4.	Power and Generators Scheduled Routine Program 0% 95% Frame Facilities	0% 0% 0%	100% 95% 95%	Your Rating _____
5.	Power and Generators Scheduled Routine Program 100% 95% Frame Facilities	0% 0% 100%	100% 95% 95%	Your Rating _____
6.	Power and Generators Scheduled Routine Program 100% 95% Frame Facilities	100% 100% 100%	100% 95% 95%	Your Rating _____

- | | | | | |
|----|---------------------------|------|------|-------------------|
| 7. | Power and Generators | 0% | 100% | |
| | Scheduled Routine Program | | | |
| | 100% 95% | | | |
| | Frame | 100% | 95% | |
| | Facilities | 0% | 95% | Your Rating _____ |
| 8. | Power and Generators | 100% | 100% | |
| | Scheduled Routine Program | | | |
| | 100% 95% | | | |
| | Frame | 0% | 95% | |
| | Facilities | 0% | 95% | Your Rating _____ |

Questionnaire 7

INSTALLATION AND REPAIR SERVICES

On the following page, you will be asked to rate the overall performance of each of 18 exchanges on Installation and Repair Services.

For each utility, you will be provided with information on the percentage of times that standards regarding Same-Day Restoral of Service, 24-hour Restoral of Service, Repair Appointments Kept, Primary Service Appointments Kept, 3-Day Primary Service Installation and Rebates for Interrupted Service are satisfied.

Repair Service standards are:

Same Day Restoral	80% restored on same day
24 Hour Restoral	95% restored within 24 hours
Repair Appointments	95% of appointments kept
Rebates - Over 24 hour	Provides rebates 100% of time
3-Day Primary Service	90% of service installations must occur within 3-days of the request for service
Primary Service Appointments	90% of appointments kept

Notes:

Service should be restored as soon as possible and, at least, within 24 hours of reported trouble.

Appointments are set within time frames of 7-12 A.M., 12-5 P.M., or 5-9 P.M., or for a specific hour of day. An appointment is considered to have been kept if the representative arrives within the time frame set.

When service is interrupted for more than 24 hours, customers will be given pro-rated rebates for the period of interrupted service.

Primary Service Appointments, like those for repair service, are considered to have been kept if the representative arrives within the time frame set.

3-Day Primary Service means that installation of service must occur within 3-days from the request for immediate service or, if requested, at a later date.

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 5. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 6. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 7. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| 8. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 9. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |
| 10. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 100% | 90% | Your Rating _____ |

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 11. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| | | | | |
| 12. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| | | | | |
| 13. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| | | | | |
| 14. | Same Day Restoral | 80% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |
| | | | | |
| 15. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 93% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 80% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| | | | | |
| 16. | Same Day Restoral | 62% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 95% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |

- | | | | | |
|-----|---------------------------------------|------|------|-------------------|
| 17. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 95% | 95% | |
| | Repair Appointments | 100% | 95% | |
| | Rebates - Over 24 Hours | 0% | 100% | |
| | 3-Day Primary Service | 100% | 90% | |
| | Appointments for Primary Service Kept | 88% | 90% | Your Rating _____ |
| 18. | Same Day Restoral | 93% | 80% | |
| | 24 Hour Restoral | 100% | 95% | |
| | Repair Appointments | 80% | 95% | |
| | Rebates - Over 24 Hours | 100% | 100% | |
| | 3-Day Primary Service | 90% | 90% | |
| | Appointments for Primary Service Kept | 90% | 90% | Your Rating _____ |

Questionnaire 8

TRANSMISSION

On the following page, you will be asked to rate the overall performance of each of 16 exchanges on Transmission.

For each exchange, you will be told whether the exchange meets the standard regarding Dial Tone Level, Central Office Loss, M.W. Frequency, Central Office Metallic Noise, Central Office Impulse Noise, Test Numbers, and Subscriber Loops.

The standards are:

Dial Tone Level	100%	An exchange with Dial Tone Level between -5 to -22 dBm is in 100% compliance. Outside of that range = 0%.
Central Office Loss	100%	An exchange with C.O. Loss of 0 to -2.5 dB is in 100% compliance. Outside of range = 0%.
Milliwatt Frequency	100%	An exchange operating at a Milliwatt Frequency between 994 to 1014 Hz and proper levels is in 100% compliance. Outside of range = 0%.
Central Office Noise, Metallic	100%	An exchange operating with C.O. Noise, Metallic, of 20 dBm or less is in 100% compliance. Outside of range = 0%.
Central Office Noise, Impulse	100%	An exchange operating C.O. Noise, Impulse, of no more than 5 counts above 59 dBm in 5 minutes is in 100% compliance. Outside of range = 0%.
Test Numbers	100%	An exchange with 3-line rotary test numbers and balance termination number is in 100% compliance. Otherwise = 0%.
Subscriber Loops	98%	of subscriber loops have acceptable transmission performance.

- | | | | | |
|----|--------------------------------|--------------|------|-------------------|
| 5. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 6. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 7. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |
| 8. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 100% | 98% | Your Rating _____ |
| 9. | Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 100% | 98% | Your Rating _____ |

- | | | | | |
|-----|--------------------------------|--------------|------|-------------------|
| 10. | Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 100% | 98% | Your Rating _____ |
| 11. | Dial Tone Level | 0% (outside) | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 0% (outside) | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 12. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 98% | 98% | Your Rating _____ |
| 13. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 0% (outside) | 100% | |
| | M.W. Frequency | 100% | 100% | |
| | Central Office Noise, Metallic | 100% | 100% | |
| | Central Office Noise, Impulse | 0% (outside) | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 100% | 98% | Your Rating _____ |
| 14. | Dial Tone Level | 100% | 100% | |
| | Central Office Loss | 100% | 100% | |
| | M.W. Frequency | 0% (outside) | 100% | |
| | Central Office Noise, Metallic | 0% (outside) | 100% | |
| | Central Office Noise, Impulse | 100% | 100% | |
| | Test Numbers | 100% | 100% | |
| | Subscriber Loops | 96% | 98% | Your Rating _____ |

15.	Dial Tone Level	0% (outside)	100%	
	Central Office Loss	100%	100%	
	M.W. Frequency	100%	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	0% (outside)	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	96%	98%	Your Rating _____
16.	Dial Tone Level	0% (outside)	100%	
	Central Office Loss	0% (outside)	100%	
	M.W. Frequency	0% (outside)	100%	
	Central Office Noise, Metallic	100%	100%	
	Central Office Noise, Impulse	0% (outside)	100%	
	Test Numbers	100%	100%	
	Subscriber Loops	98%	98%	Your Rating _____

Questionnaire 9

CUSTOMER COMPLAINTS

On the following page, you will be asked to rate the overall performance of 3 exchanges on Customer Complaints. Customer complaints refers to the number of justified complaints by consumers to the PSC regarding a telephone company.

The average number of complaints per 1000 customers for the entire State of Florida is 0.074.

Questionnaire 9 - Justified Customer Complaints

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10
 Worst
 Possible
 Performance
 On Justified
 Customer Complaints

10
 Best
 Possible
 Performance
 On Justified
 Customer Complaints

Company's
Score

- | | | | |
|----|--|-------|-------------------|
| 1. | Justified Customer Complaint's per 1,000 lines | 1.003 | Your Rating _____ |
| 2. | Justified Customer Complaint's per 1,000 lines | 0.008 | Your Rating _____ |
| 3. | Justified Customer Complaint's per 1,000 lines | 0.074 | Your Rating _____ |

Questionnaire 10

Overall Evaluation of Residential Service

On the basis of your answers to Questionnaire 1 - 9, we can understand your criteria for evaluating exchanges in each of these nine areas. Now we need to know the relative weights you would place on these major areas in making an overall evaluation of an exchange.

Therefore, in the final questionnaire, you will be presented with hypothetical profiles of phone companies described in terms of scores from 1 to 10 on each of the major areas described above. In addition, you will be told a price for basic monthly service. For example:

1.	Dial Tone Delay	6
2.	Call Completions and Billing	5
3.	Answer Time	3
4.	Directory and Directory Assistance	9
5.	Intercept Services	4
6.	Central Office	10
7.	Installation and Repair Services	7
8.	Transmission	4
9.	Customer Complaints	9
10.	Price	\$12

The profiles will differ in the scores the exchanges receive on these nine major areas and the price of basic service. By seeing how your evaluations change in response to changes in scores on these criteria, we can infer the relative weight that you would assign to each.

On the next page, you will be presented with profiles of hypothetical exchanges which differ in the scores they received in each of the 9 major areas. Assume that you are the one who assigned these scores. In your capacity as an expert evaluating exchanges in the public interest, we will ask you to rate the overall performance within each exchange described. Again, we will be able to infer your relative weights by seeing how your overall ratings change in response to differences among the profiles on each of the 9 major areas.

What makes this task difficult is that, to make an overall rating of an exchange like the one in the example above, you must remind yourself each time what it means to have received a 6 on Dial Tone Delay, a 5 on Call Completions and Billing, etc. To do this, you will have to flip back to the earlier questionnaires. If you don't do this, the 1 to 10 ratings will seem too abstract, and you won't be able to accurately reflect your perceptions of the importance of each to overall performance.

By combining your responses with those of other experts, we will be able to propose a formula for weighting performance scores to provide overall evaluations of each exchange. This formula captures the evaluation policies of experts like yourself, allowing the PSC an easy and accurate method of

evaluating phone companies in the future. This technique has proved to be very effective in performance evaluation in many areas.

We very much appreciate your taking time from your busy schedule to complete this survey. Your inputs are extremely valuable.

If you have any questions or concerns please call either:

John Lynch (Office: 904-392-0121; Home 904-374-8991) or
Thomas Buzas (Office: 313-487-3323; Home 313-429-3042).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing
University of Florida

Dr. Thomas E. Buzas
Associate Professor of Marketing
Eastern Michigan University

TEB/JGL/vjd

Questionnaire 10 - Overall Evaluation of Residential Service

Please Rate Each Utility

1	2	3	4	5	6	7	8	9	10
Very Bad					Very Good				
Overall					Overall				
Performance					Performance				

- | | | | |
|----|------------------------------------|---------|-------------------|
| 1. | Dial Tone Delay | 5 | |
| | Call Completions | 4 | |
| | Answer Time | 5 | |
| | Directory and Directory Assistance | 4 | |
| | Intercept Services | 3 | |
| | Central Office | 5 | |
| | Installation and Repair Services | 4 | |
| | Transmission | 5 | |
| | Customer Complaints | 3 | |
| | Price on basic monthly service | \$6.00 | Your Rating _____ |
| 2. | Dial Tone Delay | 9 | |
| | Call Completions | 10 | |
| | Answer Time | 5 | |
| | Directory and Directory Assistance | 9 | |
| | Intercept Services | 9 | |
| | Central Office | 5 | |
| | Installation and Repair Services | 4 | |
| | Transmission | 9 | |
| | Customer Complaints | 8 | |
| | Price on basic monthly service | \$6.00 | Your Rating _____ |
| 3. | Dial Tone Delay | 9 | |
| | Call Completions | 4 | |
| | Answer Time | 5 | |
| | Directory and Directory Assistance | 9 | |
| | Intercept Services | 3 | |
| | Central Office | 10 | |
| | Installation and Repair Services | 4 | |
| | Transmission | 5 | |
| | Customer Complaints | 8 | |
| | Price on basic monthly service | \$12.00 | Your Rating _____ |

8. Dial Tone Delay 5
 Call Completions 10
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 3
 Central Office 10
 Installation and Repair Services 10
 Transmission 9
 Customer Complaints 3
 Price on basic monthly service \$6.00

Your Rating _____

9. Dial Tone Delay 5
 Call Completions 4
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 9
 Central Office 5
 Installation and Repair Services 10
 Transmission 5
 Customer Complaints 3
 Price on basic monthly service \$12.00

Your Rating _____

10. Dial Tone Delay 5
 Call Completions 10
 Answer Time 10
 Directory and Directory Assistance 9
 Intercept Services 3
 Central Office 5
 Installation and Repair Services 4
 Transmission 5
 Customer Complaints 8
 Price on basic monthly service \$12.00

Your Rating _____

11. Dial Tone Delay 9
 Call Completions 4
 Answer Time 10
 Directory and Directory Assistance 4
 Intercept Services 9
 Central Office 10
 Installation and Repair Services 10
 Transmission 5
 Customer Complaints 8
 Price on basic monthly service \$6.00

Your Rating _____

12.	Dial Tone Delay	9
	Call Completions	10
	Answer Time	10
	Directory and Directory Assistance	4
	Intercept Services	3
	Central Office	5
	Installation and Repair Services	10
	Transmission	9
	Customer Complaints	8
	Price on basic monthly service	\$12.00

Your Rating _____

13.	Dial Tone Delay	5
	Call Completions	4
	Answer Time	10
	Directory and Directory Assistance	9
	Intercept Services	9
	Central Office	10
	Installation and Repair Services	4
	Transmission	9
	Customer Complaints	8
	Price on basic monthly service	\$6.00

Your Rating _____

14.	Dial Tone Delay	5
	Call Completions	10
	Answer Time	5
	Directory and Directory Assistance	4
	Intercept Services	9
	Central Office	10
	Installation and Repair Services	4
	Transmission	9
	Customer Complaints	3
	Price on basic monthly service	\$12.00

Your Rating _____

15.	Dial Tone Delay	5
	Call Completions	10
	Answer Time	5
	Directory and Directory Assistance	4
	Intercept Services	9
	Central Office	5
	Installation and Repair Services	10
	Transmission	5
	Customer Complaints	8
	Price on basic monthly service	\$6.00

Your Rating _____

16.	Dial Tone Delay	9
	Call Completions	10
	Answer Time	10
	Directory and Directory Assistance	4
	Intercept Services	3
	Central Office	10
	Installation and Repair Services	4
	Transmission	5
	Customer Complaints	3
	Price on basic monthly service	\$6.00

APPENDIX C

1

PUBLIC TELEPHONE SERVICE SURVEY

Dear Participant :

The Public Service Commission is developing methods for evaluating local telephone companies in the State of Florida. As you know, the PSC evaluates how well each phone company is meeting Service Evaluation Rules covering a large number of topics. The PSC wants to determine how to combine a phone company's scores to assign a single number reflecting the PSC's overall evaluation of that utility. While this evaluation should represent the interests of telephone customers, those customers lack the technical expertise to trade off strengths and weaknesses that a telephone company might have in the different areas covered by the PSC's service evaluations. Therefore the PSC has asked us to survey experts like you to determine what weights should be placed on each topic. We are asking you to take the perspective of a knowledgeable residential customer.

Because there are so many criteria concerning Public Telephone Service, we have broken this area down into five sub-areas:

- | | |
|----------------------------|---|
| Pay Phone Questionnaire 1. | Functioning: Outgoing Calls; |
| Pay Phone Questionnaire 2. | Functioning: Incoming Calls and Conversation; |
| Pay Phone Questionnaire 3. | Enclosure; |
| Pay Phone Questionnaire 4. | Coin Operations; and |
| Pay Phone Questionnaire 5. | Directory and Directory Security |

Within each sub-area, your task will be the same as on Residential Service Questionnaires 1--9. The cover page for each questionnaire will present the Service Evaluation Rules governing that topic. On the second page of each questionnaire, you will be shown several hypothetical utilities that vary in how well they meet these specific rules in an exchange. You will be asked to rate each one on a scale from 1 to 10, reflecting your evaluation of the utility in that area.

1	2	3	4	5	6	7	8	9	10
Worst Possible					Best Possible				
Performance					Performance				

(This evaluation should reflect the consumer's perspective, ignoring company cost considerations.)

For example, in Pay Phone Questionnaire 5 you might be asked to rate two companies on Directory and Directory Security, given the following evaluation results:

1.	Directory	99%	2.	Directory	95%
	Directory Security	90%		Directory Security	94%

By seeing how your ratings on this sub-area vary as a function of scores on Directory and on Directory Security, we can infer the relative weights you place on these two dimensions.

If you have any questions or concerns please call John Lynch (Office: 904-392-0121; Home 904-374-8991).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing

Pay Phone Questionnaire 1

FUNCTIONING OF PUBLIC TELEPHONES: OUTGOING CALLS

On the following page, you will be asked to rate the overall performance of 16 utilities on the Functioning of Public Telephones for Outgoing Calls. For each utility, you will receive information on 1) At Least One Pay Phone per Exchange, 2) Address/Location of Public Telephones, 3) Serviceability, 4) Dialing Instructions, 5) Access to All Long Distance Carriers, 6) Dialing, and 7) Operator Can Identify Coins. The standards are:

At Least One Pay Phone per Exchange	100% of exchanges
Address/Location	100% of public telephones
Serviceability	100% of public telephones
Dial Instructions	100% of public telephones
Access to All Long Distance Carriers	100% of public telephones
Dialing	95% of public telephones
Operator I.D. Coins	95% of public telephones

The rule for at least one pay phone per exchange is self-explanatory.

The rule for Address/Location requires all public telephones to have their locations posted, and the identification of locations to be coordinated with the appropriate 911 or emergency center.

Serviceability refers to the ability to call and converse with the operator or 911 without a coin.

The rule for Dialing Instructions requires each station to have clear and legible dialing instructions, including notice of the lack of availability of local or toll service.

The rule for Access to All Long Distance Carriers requires all public telephones to allow customers making long distance calls to use the carrier of their choice.

Dialing refers to the ability to correctly dial a number from a phone.

The Operator should be able to identify coins (5, 10, and 25 cents) deposited by the customer.

Pay Phone Questionnaire 1

FUNCTIONING OF PUBLIC TELEPHONES: OUTGOING CALLS

	1	2	3	4	5	6	7	8	9	10		
Worst Possible											Best Possible	
Performance on											Performance on	
Functioning of											Functioning of	
Public Phones											Public Phones	
Outgoing Calls											Outgoing Calls	
											PSC	
											<u>Rule</u>	
											<u>Company's Score</u>	
1.	1 Pay Phone/Exchange										95% of exchanges	100%
	Address/Location										98% of public telephones	100%
	Serviceability										100% of public telephones	100%
	Dial Instructions										97% of public telephones	100%
	Access L.D. Carriers										100% of public telephones	100%
	Dialing										95% of public telephones	95%
	Operator I.D. Coins										100% of public telephones	95%
											Your Rating	_____
2.	1 Pay Phone/Exchange										100% of exchanges	100%
	Address/Location										98% of public telephones	100%
	Serviceability										100% of public telephones	100%
	Dial Instructions										97% of public telephones	100%
	Access L.D. Carriers										100% of public telephones	100%
	Dialing										95% of public telephones	95%
	Operator I.D. Coins										95% of public telephones	95%
											Your Rating	_____
3.	1 Pay Phone/Exchange										100% of exchanges	100%
	Address/Location										100% of public telephones	100%
	Serviceability										100% of public telephones	100%
	Dial Instructions										97% of public telephones	100%
	Access L.D. Carriers										100% of public telephones	100%
	Dialing										75% of public telephones	95%
	Operator I.D. Coins										95% of public telephones	95%
											Your Rating	_____
4.	1 Pay Phone/Exchange										95% of exchanges	100%
	Address/Location										100% of public telephones	100%
	Serviceability										93% of public telephones	100%
	Dial Instructions										97% of public telephones	100%
	Access L.D. Carriers										0% of public telephones	100%
	Dialing										95% of public telephones	95%
	Operator I.D. Coins										100% of public telephones	95%
											Your Rating	_____

Functioning of Public Telephones: Outgoing Calls (continued)

	1	2	3	4	5	6	7	8	9	10
Worst Possible Performance on Functioning of Public Phones Outgoing Calls										Best Possible Performance on Functioning of Public Phones Outgoing Calls
	<u>Company's Score</u>									PSC <u>Rule</u>
5.	1 Pay Phone/Exchange	95% of exchanges							100%	
	Address/Location	100% of public telephones							100%	
	Serviceability	93% of public telephones							100%	
	Dial Instructions	100% of public telephones							100%	
	Access L.D. Carriers	100% of public telephones							100%	
	Dialing	95% of public telephones							95%	
	Operator I.D. Coins	95% of public telephones							95%	
										Your Rating _____
6.	1 Pay Phone/Exchange	95% of exchanges							100%	
	Address/Location	98% of public telephones							100%	
	Serviceability	100% of public telephones							100%	
	Dial Instructions	100% of public telephones							100%	
	Access L.D. Carriers	0% of public telephones							100%	
	Dialing	95% of public telephones							95%	
	Operator I.D. Coins	95% of public telephones							95%	
										Your Rating _____
7.	1 Pay Phone/Exchange	95% of exchanges							100%	
	Address/Location	98% of public telephones							100%	
	Serviceability	93% of public telephones							100%	
	Dial Instructions	97% of public telephones							100%	
	Access L.D. Carriers	0% of public telephones							100%	
	Dialing	75% of public telephones							95%	
	Operator I.D. Coins	84% of public telephones							95%	
										Your Rating _____
8.	1 Pay Phone/Exchange	100% of exchanges							100%	
	Address/Location	100% of public telephones							100%	
	Serviceability	93% of public telephones							100%	
	Dial Instructions	97% of public telephones							100%	
	Access L.D. Carriers	0% of public telephones							100%	
	Dialing	95% of public telephones							95%	
	Operator I.D. Coins	95% of public telephones							95%	
										Your Rating _____

Pay Phone Questionnaire 1

Functioning of Public Telephones: Outgoing Calls (continued)

[illegible]

Pay Phone Questionnaire 2

FUNCTIONING OF PUBLIC TELEPHONES: INCOMING CALLS AND CONVERSATION

On the following page, you will be asked to rate the overall performance of 8 utilities on the Functioning of Public Telephones for Incoming Calls and Conversation. For each utility, you will receive information on 1) Telephone Numbers, 2) Receives Calls, 3) Hearing Aid Compatible, and 4) Transmission. The standards are:

Telephone Numbers	100% of public telephones
Receives Calls	100% of public telephones
Hearing Aid Compatible	100% of public telephones
Transmission	95% of public telephones

Station telephone numbers must be identified for every coin phone.

Pay phones except in prisons, schools and hospitals must be able to receive incoming calls.

All pay phones should be equipped for the hearing impaired.

Transmission quality should be such that customers should be able to hear and be heard without too much noise and distortion.

Pay Phone Questionnaire 2

FUNCTIONING OF PUBLIC TELEPHONES: INCOMING CALLS AND CONVERSATION

	1	2	3	4	5	6	7	8	9	10	
Worst Possible											Best Possible
Performance on											Performance on
Functioning of											Functioning of
Public Phones											Public Phones
Incoming Calls											Incoming Calls
& Conversation											& Conversation
											PSC
											<u>Rule</u>
											<u>Company's Score</u>
1. Telephone Numbers											100% of public telephones
Receives Calls											100% of public telephones
Hearing Aid Compatible											15% of public telephones
Transmission											95% of public telephones
											95%
											Your Rating _____
2. Telephone Numbers											97% of public telephones
Receives Calls											93% of public telephones
Hearing Aid Compatible											15% of public telephones
Transmission											75% of public telephones
											95%
											Your Rating _____
3. Telephone Numbers											97% of public telephones
Receives Calls											100% of public telephones
Hearing Aid Compatible											100% of public telephones
Transmission											95% of public telephones
											95%
											Your Rating _____
4. Telephone Numbers											97% of public telephones
Receives Calls											100% of public telephones
Hearing Aid Compatible											15% of public telephones
Transmission											100% of public telephones
											95%
											Your Rating _____
5. Telephone Numbers											100% of public telephones
Receives Calls											100% of public telephones
Hearing Aid Compatible											100% of public telephones
Transmission											75% of public telephones
											95%
											Your Rating _____
6. Telephone Numbers											100% of public telephones
Receives Calls											93% of public telephones
Hearing Aid Compatible											100% of public telephones
Transmission											100% of public telephones
											95%
											Your Rating _____

1 2 3 4 5 6 7 8 9 10

Best Possible
Performance on
Functioning of
Public Phones
Incoming Calls
& Conversation

PSC
Rule

100%
100%
100%
95%
Your Rating _____

100%
100%
100%
95%
Your Rating _____

Pay Phone Questionnaire 3

ENCLOSURE OF PUBLIC TELEPHONES

On the following page, you will be asked to rate the overall performance of 27 utilities on the Enclosure of Public Telephones. For each utility, you will be provided with information about 1) Accessibility to Handicapped, 2) Cleanliness, 3) Lights, 4) Glass, 5) Doors, 6) Level, 7) Wiring, and 8) Name or Logo. The standards are:

Accessibility to Handicapped	100% of public telephones
Cleanliness	95% of public telephones
Lights	100% of public telephones
Glass	95% of public telephones
Doors	95% of public telephones
Level	95% of public telephones
Wiring	95% of public telephones
Name or Logo	100% of public telephones

All stations installed since January 1, 1987 must be Accessible to the Handicapped.

Normal maintenance shall include inspection and reasonable effort shall be taken to insure Cleanliness and freedom from obstructions of 95% of coin stations.

Public telephones must be Lighted during hours of darkness when light from other sources is inadequate to read instructions and use the instrument.

For phone booths designed to have Glass, the glass should be intact and should not present a safety hazard.

For phone booths designed to have a Door, the door should be present and fully functional.

Phone booths should be neat and Level, so that coin operation is not impaired.

Wiring should be neat and should not present a safety hazard. Grounding wire should be intact.

The Name or Logo of the operating phone company should be present on each phone booth.

		1	2	3	4	5	6	7	8	9	10	
Worst Possible Performance on Enclosures												Best Possible Performance on Enclosures
		<u>Company's Score</u>										<u>PSC Rule</u>
12.	Accessibility to Handicapped	90% of Public Telephones										100%
	Cleanliness	99% of Public Telephones										95%
	Lights	100% of Public Telephones										100%
	Glass	95% of Public Telephones										95%
	Door	0% of Public Telephones										95%
	Level	100% of Public Telephones										95%
	Wiring	95% of Public Telephones										95%
	Name or Logo	0% of Public Telephones										100%
												Your Rating ____
13.	Accessibility to Handicapped	100% of Public Telephones										100%
	Cleanliness	95% of Public Telephones										95%
	Lights	96% of Public Telephones										100%
	Glass	94% of Public Telephones										95%
	Door	95% of Public Telephones										95%
	Level	100% of Public Telephones										95%
	Wiring	89% of Public Telephones										95%
	Name or Logo	100% of Public Telephones										100%
												Your Rating ____
14.	Accessibility to Handicapped	90% of Public Telephones										100%
	Cleanliness	95% of Public Telephones										95%
	Lights	96% of Public Telephones										100%
	Glass	100% of Public Telephones										95%
	Door	0% of Public Telephones										95%
	Level	88% of Public Telephones										95%
	Wiring	89% of Public Telephones										95%
	Name or Logo	0% of Public Telephones										100%
												Your Rating ____
15.	Accessibility to Handicapped	90% of Public Telephones										100%
	Cleanliness	93% of Public Telephones										95%
	Lights	96% of Public Telephones										100%
	Glass	100% of Public Telephones										95%
	Door	100% of Public Telephones										95%
	Level	88% of Public Telephones										95%
	Wiring	95% of Public Telephones										95%
	Name or Logo	100% of Public Telephones										100%
												Your Rating ____

	1	2	3	4	5	6	7	8	9	10
Worst Possible Performance on Enclosures										Best Possible Performance on Enclosures

Company's Score

PSC Rule

- | | | | |
|-----|------------------------------|---------------------------|-------------------|
| 20. | Accessibility to Handicapped | 100% of Public Telephones | 100% |
| | Cleanliness | 93% of Public Telephones | 95% |
| | Lights | 100% of Public Telephones | 100% |
| | Glass | 95% of Public Telephones | 95% |
| | Door | 95% of Public Telephones | 95% |
| | Level | 88% of Public Telephones | 95% |
| | Wiring | 100% of Public Telephones | 95% |
| | Name or Logo | 100% of Public Telephones | 100% |
| | | | Your Rating _____ |
| 21. | Accessibility to Handicapped | 90% of Public Telephones | 100% |
| | Cleanliness | 99% of Public Telephones | 95% |
| | Lights | 100% of Public Telephones | 100% |
| | Glass | 94% of Public Telephones | 95% |
| | Door | 100% of Public Telephones | 95% |
| | Level | 95% of Public Telephones | 95% |
| | Wiring | 89% of Public Telephones | 95% |
| | Name or Logo | 100% of Public Telephones | 100% |
| | | | Your Rating _____ |
| 22. | Accessibility to Handicapped | 90% of Public Telephones | 100% |
| | Cleanliness | 99% of Public Telephones | 95% |
| | Lights | 96% of Public Telephones | 100% |
| | Glass | 100% of Public Telephones | 95% |
| | Door | 95% of Public Telephones | 95% |
| | Level | 88% of Public Telephones | 95% |
| | Wiring | 100% of Public Telephones | 95% |
| | Name or Logo | 100% of Public Telephones | 100% |
| | | | Your Rating _____ |
| 23. | Accessibility to Handicapped | 100% of Public Telephones | 100% |
| | Cleanliness | 99% of Public Telephones | 95% |
| | Lights | 100% of Public Telephones | 100% |
| | Glass | 95% of Public Telephones | 95% |
| | Door | 0% of Public Telephones | 95% |
| | Level | 88% of Public Telephones | 95% |
| | Wiring | 89% of Public Telephones | 95% |
| | Name or Logo | 100% of Public Telephones | 100% |
| | | | Your Rating _____ |

		1	2	3	4	5	6	7	8	9	10	
Worst Possible Performance on Enclosures												Best Possible Performance on Enclosures
		<u>Company's Score</u>										PSC Rule
24.	Accessibility to Handicapped	90% of Public Telephones										100%
	Cleanliness	93% of Public Telephones										95%
	Lights	100% of Public Telephones										100%
	Glass	95% of Public Telephones										95%
	Door	95% of Public Telephones										95%
	Level	100% of Public Telephones										95%
	Wiring	89% of Public Telephones										95%
	Name or Logo	100% of Public Telephones										100%
												Your Rating _____
25.	Accessibility to Handicapped	100% of Public Telephones										100%
	Cleanliness	95% of Public Telephones										95%
	Lights	100% of Public Telephones										100%
	Glass	95% of Public Telephones										95%
	Door	100% of Public Telephones										95%
	Level	88% of Public Telephones										95%
	Wiring	95% of Public Telephones										95%
	Name or Logo	0% of Public Telephones										100%
												Your Rating _____
26.	Accessibility to Handicapped	90% of Public Telephones										100%
	Cleanliness	95% of Public Telephones										95%
	Lights	100% of Public Telephones										100%
	Glass	95% of Public Telephones										95%
	Door	100% of Public Telephones										95%
	Level	100% of Public Telephones										95%
	Wiring	100% of Public Telephones										95%
	Name or Logo	100% of Public Telephones										100%
												Your Rating _____
27.	Accessibility to Handicapped	100% of Public Telephones										100%
	Cleanliness	99% of Public Telephones										95%
	Lights	100% of Public Telephones										100%
	Glass	100% of Public Telephones										95%
	Door	95% of Public Telephones										95%
	Level	100% of Public Telephones										95%
	Wiring	89% of Public Telephones										95%
	Name or Logo	0% of Public Telephones										100%
												Your Rating _____

Pay Phone Questionnaire 4

COIN OPERATIONS OF PUBLIC TELEPHONES

On the following page, you will be asked to rate the overall performance of 12 utilities on Coin Operations of Public Telephones. For each utility, you will receive information about 1) Pre-pay, 2) Coin Return Automatic, 3) Coin Return Operator, 4) Coin Free Access to the Operator, 5) Coin Free Access to 911, 6) Coin Free Access to Local Directory Assistance, 7) Coin Free Access to the Repair Service, and 8) Coin Free Access to the Business Office. The standards are:

Pre-pay	100% of public telephones
Coin Return Automatic	100% of public telephones
Coin Return Operator	100% of public telephones
Coin Free Access - Operator	100% of public telephones
Coin Free Access - 911	100% of public telephones
Coin Free Access - Directory Assistance	100% of public telephones
Coin Free Access - Repair Service	100% of public telephones
Coin Free Access - Business Office	100% of public telephones

The rule for Pre-Pay requires that all public phones must have a dial tone prior to the deposit of coins. Coins must be automatically returned if a local call is incomplete.

Coins must be automatically returned if a local call is incomplete. Coins are returned either by hanging up the receiver or by the operation of the return lever. Each station shall return any deposited amount if a call is not completed, except messages to a Feature Group A access number. (Calls to an alternative long distance carrier in areas without equal access.)

The operator should be able to return coins if required in normal operation.

Each station must have Coin Free Access to the Operator.

Each station must have Coin Free Access to 911, where available.

Each station must have Coin Free Access or coin return access to Local Directory Assistance

Each station must have Coin Free Access or coin return access to the Repair Service.

Each station must have Coin Free Access or coin return access to the phone company's Business Office.

Questionnaire 4

Coin Operations of Public Telephones

	1	2	3	4	5	6	7	8	9	10		
											Worst Possible	
											Performance on	
											Coin Operations	
												Best Possible
												Performance on
												Coin Operations
											<u>Company's</u>	PSC
											<u>Score</u>	<u>Rule</u>
1.	Pre-pay							98%	100%			
	Coin Return Automatic							100%	100%			
	Coin Return Operator							100%	100%			
	Coin Free Access - Operator							80%	100%			
	Coin Free Access - 911							100%	100%			
	Coin Free Access - Directory Assistance							100%	100%			
	Coin Free Access - Repair Service							100%	100%			
	Coin Free Access - Business Office							80%	100%	Your Rating ____		
2.	Pre-pay							98%	100%			
	Coin Return Automatic							83%	100%			
	Coin Return Operator							100%	100%			
	Coin Free Access - Operator							80%	100%			
	Coin Free Access - 911							100%	100%			
	Coin Free Access - Directory Assistance							100%	100%			
	Coin Free Access - Repair Service							80%	100%			
	Coin Free Access - Business Office							100%	100%	Your Rating ____		
3.	Pre-pay							100%	100%			
	Coin Return Automatic							83%	100%			
	Coin Return Operator							100%	100%			
	Coin Free Access - Operator							100%	100%			
	Coin Free Access - 911							100%	100%			
	Coin Free Access - Directory Assistance							81%	100%			
	Coin Free Access - Repair Service							80%	100%			
	Coin Free Access - Business Office							80%	100%	Your Rating ____		
4.	Pre-pay							100%	100%			
	Coin Return Automatic							100%	100%			
	Coin Return Operator							95%	100%			
	Coin Free Access - Operator							100%	100%			
	Coin Free Access - 911							100%	100%			
	Coin Free Access - Directory Assistance							100%	100%			
	Coin Free Access - Repair Service							80%	100%			
	Coin Free Access - Business Office							80%	100%	Your Rating ____		

Questionnaire 4

Coin Operations of Public Telephones (continued)

	1	2	3	4	5	6	7	8	9	10
Worst Possible Performance on Coin Operations										
										Best Possible Performance on Coin Operations
								<u>Company's Score</u>	<u>PSC Rule</u>	
5.	Pre-pay							100%	100%	
	Coin Return Automatic							83%	100%	
	Coin Return Operator							95%	100%	
	Coin Free Access - Operator							80%	100%	
	Coin Free Access - 911							100%	100%	
	Coin Free Access - Directory Assistance							81%	100%	
	Coin Free Access - Repair Service							100%	100%	
	Coin Free Access - Business Office							100%	100%	Your Rating ____
6.	Pre-pay							98%	100%	
	Coin Return Automatic							100%	100%	
	Coin Return Operator							95%	100%	
	Coin Free Access - Operator							100%	100%	
	Coin Free Access - 911							100%	100%	
	Coin Free Access - Directory Assistance							81%	100%	
	Coin Free Access - Repair Service							100%	100%	
	Coin Free Access - Business Office							100%	100%	Your Rating ____
7.	Pre-pay							98%	100%	
	Coin Return Automatic							83%	100%	
	Coin Return Operator							95%	100%	
	Coin Free Access - Operator							100%	100%	
	Coin Free Access - 911							80%	100%	
	Coin Free Access - Directory Assistance							100%	100%	
	Coin Free Access - Repair Service							100%	100%	
	Coin Free Access - Business Office							80%	100%	Your Rating ____
8.	Pre-pay							98%	100%	
	Coin Return Automatic							83%	100%	
	Coin Return Operator							95%	100%	
	Coin Free Access - Operator							80%	100%	
	Coin Free Access - 911							80%	100%	
	Coin Free Access - Directory Assistance							81%	100%	
	Coin Free Access - Repair Service							80%	100%	
	Coin Free Access - Business Office							80%	100%	Your Rating ____

Questionnaire 4

Coin Operations of Public Telephones (continued)

	1	2	3	4	5	6	7	8	9	10
Worst Possible Performance on Coin Operations										Best Possible Performance on Coin Operations
	<u>Company's Score</u>								PSC Rule	
9.	Pre-pay	100%	100%						100%	
	Coin Return Automatic	100%	100%						100%	
	Coin Return Operator	100%	100%						100%	
	Coin Free Access - Operator	80%	100%						100%	
	Coin Free Access - 911	80%	100%						100%	
	Coin Free Access - Directory Assistance	81%	100%						100%	
	Coin Free Access - Repair Service	100%	100%						100%	
	Coin Free Access - Business Office	80%	100%	Your Rating _____						
10.	Pre-pay	100%	100%						100%	
	Coin Return Automatic	83%	100%						100%	
	Coin Return Operator	100%	100%						100%	
	Coin Free Access - Operator	100%	100%						100%	
	Coin Free Access - 911	80%	100%						100%	
	Coin Free Access - Directory Assistance	100%	100%						100%	
	Coin Free Access - Repair Service	100%	100%						100%	
	Coin Free Access - Business Office	100%	100%	Your Rating _____						
11.	Pre-pay	100%	100%						100%	
	Coin Return Automatic	100%	100%						100%	
	Coin Return Operator	95%	100%						100%	
	Coin Free Access - Operator	80%	100%						100%	
	Coin Free Access - 911	80%	100%						100%	
	Coin Free Access - Directory Assistance	100%	100%						100%	
	Coin Free Access - Repair Service	80%	100%						100%	
	Coin Free Access - Business Office	100%	100%	Your Rating _____						
12.	Pre-pay	98%	100%						100%	
	Coin Return Automatic	100%	100%						100%	
	Coin Return Operator	100%	100%						100%	
	Coin Free Access - Operator	100%	100%						100%	
	Coin Free Access - 911	80%	100%						100%	
	Coin Free Access - Directory Assistance	81%	100%						100%	
	Coin Free Access - Repair Service	80%	100%						100%	
	Coin Free Access - Business Office	100%	100%	Your Rating _____						

Pay Phone Questionnaire 5

DIRECTORY AND DIRECTORY SECURITY OF PUBLIC TELEPHONES

On the following page, you will be asked to rate the overall performance of 6 utilities on Directory and Directory Security of Public Telephones. For each utility, you will be provided with information about the availability of directories at public telephones, and whether they are properly secured. The standards are:

Directory	100%
Directory Security	95%

Whenever there are three or more coin stations at one location, there must be a directory for the local calling area for every two stations. Otherwise there must be a directory for every station.

Each directory should be secured in such a manner as to assure its availability.

Pay Phone Questionnaire 5

Directory and Directory Security of Public Telephones

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Worst Possible
Performance on
Directory &
Dir. Security

Best Possible
Performance on
Directory &
Dir. Security

Company's
Score

PSC Rule

- | | | | | |
|----|--------------------|---------------------------|------|-------------------|
| 1. | Directory | 52% of public telephones | 95% | |
| | Directory Security | 80% of public telephones | 100% | |
| | | | | Your Rating _____ |
| 2. | Directory | 52% of public telephones | 95% | |
| | Directory Security | 100% of public telephones | 100% | |
| | | | | Your Rating _____ |
| 3. | Directory | 100% of public telephones | 95% | |
| | Directory Security | 100% of public telephones | 100% | |
| | | | | Your Rating _____ |
| 4. | Directory | 52% of public telephones | 95% | |
| | Directory Security | 95% of public telephones | 100% | |
| | | | | Your Rating _____ |
| 5. | Directory | 100% of public telephones | 95% | |
| | Directory Security | 95% of public telephones | 100% | |
| | | | | Your Rating _____ |
| 6. | Directory | 100% of public telephones | 95% | |
| | Directory Security | 80% of public telephones | 100% | |
| | | | | Your Rating _____ |

Pay Phone Questionnaire 6

PUBLIC TELEPHONE SERVICE DIRECTIONS FOR OVERALLL EVALUATION

Once we understand your criteria for evaluating phone companies within these five sub-areas, we will need to know the relative weights you would place on the five sub-areas of Functioning: Outgoing Calls, Functioning: Incoming Calls and Conversation, etc., in making an overall evaluation of Public Telephone Service. Therefore, on Pay Phone Questionnaire 6, you will be asked to make Overall Evaluations of phone companies on Public Telephone Service. You will be presented with 12 profiles of phone companies or exchanges described in terms of scores from 1 to 10 on each of the five areas described above. For example a profile for a single exchange might be:

1.	Functioning: Outgoing Calls	6
2.	Functioning: Incoming Calls and Conversation	5
3.	Enclosure of Public Telephones	3
4.	Coin Operations	9
5.	Directory & Directory Security	4

You will be asked to rate how good or bad the overall level of public telephone service on a scale from:

	1	2	3	4	5	6	7	8	9	10	
Worst Possible											Best Possible
Overall											Overall
Performance on											Performance
Public Telephone											on Public
Service											Telephone
											Service

Notice that you cannot simply average the ratings, because that would imply that the 5 areas are all exactly equal in importance. We want to understand what relative weights experts like you think should be given to these areas.

On the next page, you will be presented with profiles of 16 hypothetical local phone companies who differ in the scores they received in each of the 5 major areas. Assume that you are the one who assigned these scores. We will ask you to rate the overall performance of each utility described. Again, we will be able to infer your relative weights by seeing how your overall ratings change in response to differences among the 16 profiles on each of the 5 major areas.

What makes this task difficult is that, to make an overall rating of a utility like the one in the example above, you must remind yourself each time

exactly what it means to have received a 6 on Functioning: Outgoing Calls, a 5 on Functioning: Incoming Calls and Conversation, etc. To do this, you will have to flip back to the earlier questionnaires. If you don't do this, the 1 to 10 ratings will seem too abstract, and you won't be able to accurately reflect your perceptions of the importance of each to overall performance.

Pay Phone Questionnaire 6

Overall Evaluation of Public Telephone Service

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10

Worst Possible
Overall
Performance on
Telephone
Service

Best Possible
Overall
Performance on
Telephone
Service

Your Rating
of Sub-Area

- | | | | |
|----|--|----|-------|
| 1. | Functioning: Outgoing Calls | 9 | |
| | Functioning: Incoming Calls & Conversation | 10 | |
| | Enclosure | 10 | |
| | Coin Operations | 4 | |
| | Directory & Directory Security | 9 | |
| | Your Overall Rating | | _____ |
| 2. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 10 | |
| | Enclosure | 5 | |
| | Coin Operations | 9 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |
| 3. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 4 | |
| | Enclosure | 10 | |
| | Coin Operations | 9 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |
| 4. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 10 | |
| | Enclosure | 10 | |
| | Coin Operations | 4 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |
| 5. | Functioning: Outgoing Calls | 9 | |
| | Functioning: Incoming Calls & Conversation | 10 | |
| | Enclosure | 10 | |
| | Coin Operations | 9 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |

Pay Phone Questionnaire 6

Overall Evaluation of Public Telephone Service (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Worst Possible											Best Possible
Overall											Overall
Performance on											Performance on
Telephone											Telephone
Service											Service
											<u>Your Rating</u>
											<u>of Sub-Area</u>
6. Functioning: Outgoing Calls											5
Functioning: Incoming Calls & Conversation											10
Enclosure											10
Coin Operations											9
Directory & Directory Security											9
											Your Overall Rating _____
7. Functioning: Outgoing Calls											5
Functioning: Incoming Calls & Conversation											4
Enclosure											5
Coin Operations											4
Directory & Directory Security											3
											Your Overall Rating _____
8. Functioning: Outgoing Calls											9
Functioning: Incoming Calls & Conversation											10
Enclosure											5
Coin Operations											9
Directory & Directory Security											9
											Your Overall Rating _____
9. Functioning: Outgoing Calls											9
Functioning: Incoming Calls & Conversation											10
Enclosure											5
Coin Operations											4
Directory & Directory Security											3
											Your Overall Rating _____
10. Functioning: Outgoing Calls											9
Functioning: Incoming Calls & Conversation											4
Enclosure											5
Coin Operations											4
Directory & Directory Security											9
											Your Overall Rating _____

Pay Phone Questionnaire 6

Overall Evaluation of Public Telephone Service (continued)

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10

Worst Possible
Overall
Performance on
Telephone
Service

Best Possible
Overall
Performance on
Telephone
Service

Your Rating
of Sub-Area

- | | | | |
|-----|--|----|-------|
| 11. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 4 | |
| | Enclosure | 10 | |
| | Coin Operations | 4 | |
| | Directory & Directory Security | 9 | |
| | Your Overall Rating | | _____ |
| | | | |
| 12. | Functioning: Outgoing Calls | 9 | |
| | Functioning: Incoming Calls & Conversation | 4 | |
| | Enclosure | 10 | |
| | Coin Operations | 4 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |
| | | | |
| 13. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 4 | |
| | Enclosure | 5 | |
| | Coin Operations | 9 | |
| | Directory & Directory Security | 9 | |
| | Your Overall Rating | | _____ |
| | | | |
| 14. | Functioning: Outgoing Calls | 5 | |
| | Functioning: Incoming Calls & Conversation | 10 | |
| | Enclosure | 5 | |
| | Coin Operations | 4 | |
| | Directory & Directory Security | 9 | |
| | Your Overall Rating | | _____ |
| | | | |
| 15. | Functioning: Outgoing Calls | 9 | |
| | Functioning: Incoming Calls & Conversation | 4 | |
| | Enclosure | 5 | |
| | Coin Operations | 9 | |
| | Directory & Directory Security | 3 | |
| | Your Overall Rating | | _____ |

Pay Phone Questionnaire 6

Overall Evaluation of Public Telephone Service (continued)

Please Rate Each Utility

1 2 3 4 5 6 7 8 9 10

Worst Possible
Overall
Performance on
Telephone
Service

Best Possible
Overall
Performance on
Telephone
Service

Your Rating
of Sub-Area

- | | | |
|-----|--|----|
| 16. | Functioning: Outgoing Calls | 9 |
| | Functioning: Incoming Calls & Conversation | 4 |
| | Enclosure | 10 |
| | Coin Operations | 9 |
| | Directory & Directory Security | 9 |

Your Overall Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF RESIDENTIAL SERVICE

On the basis of your answers to Pay Phone Questionnaires 1 - 6, we can understand your criteria for evaluating exchanges in each of these nine areas. Now we need to know the relative weights you would place on these major areas in making an overall evaluation of an exchange.

Therefore, in the final questionnaire, you will be presented with hypothetical profiles of phone companies described in terms of scores from 1 to 10 on each of the major areas described above. In addition, you will be told a price for basic monthly service. For example:

1.	Dial Tone Delay	6
2.	Call Completions and Billing	5
3.	Answer Time	3
4.	Directory and Directory Assistance	9
5.	Intercept Services	4
6.	Central Office	10
7.	Installation and Repair Services	7
8.	Transmission	4
9.	Customer Complaints	9
10.	Public Telephone Service	4

The profiles will differ in the scores the exchanges receive on these nine major areas and the price of basic service. By seeing how your evaluations change in response to changes in scores on these criteria, we can infer the relative weight that you would assign to each.

On the next page, you will be presented with profiles of hypothetical exchanges which differ in the scores they received in each of the 9 major areas. Assume that you are the one who assigned these scores. In your capacity as an expert evaluating exchanges in the public interest, we will ask you to rate the overall performance within each exchange described. Again, we will be able to infer your relative weights by seeing how your overall ratings change in response to differences among the profiles on each of the 9 major areas.

What makes this task difficult is that, to make an overall rating of an exchange like the one in the example above, you must remind yourself each time what it means to have received a 6 on Dial Tone Delay, a 5 on Call Completions and Billing, etc. To do this, you will have to flip back to the earlier questionnaires. If you don't do this, the 1 to 10 ratings will seem too abstract, and you won't be able to accurately reflect your perceptions of the importance of each to overall performance.

By combining your responses with those of other experts, we will be able to propose a formula for weighting performance scores to provide overall evaluations of each exchange. This formula captures the evaluation policies of experts like yourself, allowing the PSC an easy and accurate method of

evaluating phone companies in the future. This technique has proved to be very effective in performance evaluation in many areas.

We very much appreciate your taking time from your busy schedule to complete this survey. Your inputs are extremely valuable.

If you have any questions or concerns please call either:

John Lynch (Office: 904-392-0121; Home 904-374-8991) or
Thomas Buzas (Office: 313-487-3323; Home 313-429-3042).

Thank you.

Sincerely,

Dr. John G. Lynch, Jr.
Associate Professor of Marketing
University of Florida

Dr. Thomas E. Buzas
Associate Professor of Marketing
Eastern Michigan University

TEB/JGL/vjd

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
1.	Dial Tone Delay					9					
	Call Completions					10					
	Answer Time					5					
	Directory and Directory Assistance					4					
	Intercept Services					3					
	Central Office					5					
	Installation and Repair Services					4					
	Transmission					5					
	Customer Complaints					3					
	Public Telephone Service					4					
											Your Rating _____
2.	Dial Tone Delay					5					
	Call Completions					4					
	Answer Time					5					
	Directory and Directory Assistance					9					
	Intercept Services					9					
	Central Office					5					
	Installation and Repair Services					4					
	Transmission					9					
	Customer Complaints					8					
	Public Telephone Service					4					
											Your Rating _____
3.	Dial Tone Delay					5					
	Call Completions					10					
	Answer Time					5					
	Directory and Directory Assistance					9					
	Intercept Services					3					
	Central Office					10					
	Installation and Repair Services					4					
	Transmission					5					
	Customer Complaints					8					
	Public Telephone Service					9					
											Your Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
4.	Dial Tone Delay					5					
	Call Completions					4					
	Answer Time					5					
	Directory and Directory Assistance					9					
	Intercept Services					9					
	Central Office					10					
	Installation and Repair Services					10					
	Transmission					5					
	Customer Complaints					3					
	Public Telephone Service					9					
											Your Rating _____
5.	Dial Tone Delay					5					
	Call Completions					10					
	Answer Time					5					
	Directory and Directory Assistance					9					
	Intercept Services					3					
	Central Office					5					
	Installation and Repair Services					10					
	Transmission					9					
	Customer Complaints					3					
	Public Telephone Service					4					
											Your Rating _____
6.	Dial Tone Delay					5					
	Call Completions					4					
	Answer Time					10					
	Directory and Directory Assistance					4					
	Intercept Services					9					
	Central Office					5					
	Installation and Repair Services					4					
	Transmission					9					
	Customer Complaints					3					
	Public Telephone Service					9					
											Your Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
7.	Dial Tone Delay					9					
	Call Completions					10					
	Answer Time					5					
	Directory and Directory Assistance					4					
	Intercept Services					3					
	Central Office					10					
	Installation and Repair Services					10					
	Transmission					9					
	Customer Complaints					8					
	Public Telephone Service					9					
											Your Rating _____
8.	Dial Tone Delay					9					
	Call Completions					4					
	Answer Time					10					
	Directory and Directory Assistance					9					
	Intercept Services					3					
	Central Office					10					
	Installation and Repair Services					10					
	Transmission					9					
	Customer Complaints					3					
	Public Telephone Service					4					
											Your Rating _____
9.	Dial Tone Delay					9					
	Call Completions					10					
	Answer Time					10					
	Directory and Directory Assistance					9					
	Intercept Services					9					
	Central Office					5					
	Installation and Repair Services					10					
	Transmission					5					
	Customer Complaints					3					
	Public Telephone Service					9					
											Your Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
10.	Dial Tone Delay									9	
	Call Completions									4	
	Answer Time									10	
	Directory and Directory Assistance									9	
	Intercept Services									3	
	Central Office									5	
	Installation and Repair Services									4	
	Transmission									5	
	Customer Complaints									8	
	Public Telephone Service									9	
											Your Rating _____
11.	Dial Tone Delay									5	
	Call Completions									10	
	Answer Time									10	
	Directory and Directory Assistance									4	
	Intercept Services									9	
	Central Office									10	
	Installation and Repair Services									10	
	Transmission									5	
	Customer Complaints									8	
	Public Telephone Service									4	
											Your Rating _____
12.	Dial Tone Delay									5	
	Call Completions									4	
	Answer Time									10	
	Directory and Directory Assistance									4	
	Intercept Services									3	
	Central Office									5	
	Installation and Repair Services									10	
	Transmission									9	
	Customer Complaints									8	
	Public Telephone Service									9	
											Your Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
13.	Dial Tone Delay									9	
	Call Completions									10	
	Answer Time									10	
	Directory and Directory Assistance									9	
	Intercept Services									9	
	Central Office									10	
	Installation and Repair Services									4	
	Transmission									9	
	Customer Complaints									8	
	Public Telephone Service									4	
											Your Rating _____
14.	Dial Tone Delay									9	
	Call Completions									4	
	Answer Time									5	
	Directory and Directory Assistance									4	
	Intercept Services									9	
	Central Office									10	
	Installation and Repair Services									4	
	Transmission									9	
	Customer Complaints									3	
	Public Telephone Service									9	
											Your Rating _____
15.	Dial Tone Delay									9	
	Call Completions									10	
	Answer Time									5	
	Directory and Directory Assistance									4	
	Intercept Services									9	
	Central Office									5	
	Installation and Repair Services									10	
	Transmission									5	
	Customer Complaints									8	
	Public Telephone Service									4	
											Your Rating _____

Pay Phone Questionnaire 7

OVERALL EVALUATION OF LOCAL PHONES (continued)

Please Rate Each Utility

	1	2	3	4	5	6	7	8	9	10	
Very Bad											Very Good
Overall											Overall
Performance											Performance
16. Dial Tone Delay					5						
Call Completions					4						
Answer Time					10						
Directory and Directory Assistance					4						
Intercept Services					3						
Central Office					10						
Installation and Repair Services					4						
Transmission					5						
Customer Complaints					3						
Public Telephone Service					4						