How Are Organizational Measures Really Used?

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This study uses multiple theoretical perspectives and multiple methods to understand how organizational measures are used. Theoretical perspectives include organizational learning, Weickian sense-making, quality management, and critical theory. Methods include surveys over three time periods, interviews, focus groups, process observation/tracking, and archival materials. The case site was one unit of an international information services corporation. The occasion for the assessment of various organizational measures was the implementation of two systems (a customer service database and a document-imaging system) designed to help the unit meet the contracted performance measures for the servicing of corporate calling cards for more than 6000 customers of a major telephone company. Results found that: 1) a variety of paradoxical uses and consequences of measures arose; 2) there were several "disconnects" or gaps between intentions and consequences of measures; 3) there was considerable variation in the extent to which measurement philosophies and procedures were explicitly presented and commonly shared; and 4) there were limited efforts to obtain double-loop learning or process improvement about measurement activities themselves. Each theoretical perspective highlighted different aspects of the use and evaluation of organizational measures.

Key words: critical theory, organizational learning, organizational measures, quality management, sense-making

INTRODUCTION

Given the increasingly competitive and constantly changing marketplace for today's organizations, organizational measures are playing a more crucial and pervasive role than ever before (Brancato 1997; Lingle 1997). This study uses multiple theoretical perspectives and multiple methods for understanding how measures are used and interpreted in an organizational context.

TRENDS IN AND PERSPECTIVES ON ORGANIZATIONAL MEASUREMENT

Measures and Organizational Learning

Measurement and quantification are not new ideas, and are hardly limited to the organizational context (Boring 1961; Crosby 1997; Machlup 1962; Woolf 1961), but this article can only touch upon some of the basic organizational developments. Beniger (1986) argued that the development of extensive measures and pervasiveness of information was not necessary early on to control the manufacturing, advertising, distribution, and record-keeping activities associated with the industrialization of the United States. But attention to organizational measurement received a boost after the turn of the century with the rise of "scientific management," epitomized by the work of Frederick Taylor and Pierre S. du Pont. In the 1950s, the quality management movement highlighted organizational measures (Czarnecki 1999), and accounting and financial measures were paramount in the 1970s and 1980s (Brancato 1997). A recent measurement trend in the organizational

literature is the "balanced scorecard" approach (Chang and Morgan 2000; Kaplan and Norton 1996; 2000; Niven and Kaplan 2002; Olve, Roy, and Wetter 1999), which allows managers to look at measures from four key areas: financial, customer, internal business (operations), and innovation and learning. Different aspects and implications of the use of organizational measures are raised by various theoretical perspectives.

Measures are an inherent component of organizational learning (Argote 1999; Argyris and Schön 1996; Crossan, Lane, and White 1999; DiBella and Nevis 1998; Levin 2000; Lundberg and Brownell 1993; March 1999). Organizational learning theory argues that information from various measures becomes the raw information that individuals can use and potentially learn from, which can, in turn, become the basis for organizational learning and "organizational memory" (Walsh and Ungson 1991), allowing organizations to adapt to their environments. DiBella and Nevis (1998) identify "concern for measurement" as a facilitating factor that supports the acquisition of knowledge necessary for the organizational learning cycle to be complete. Measures may support single-feedback loop organizational learning, where errors are detected that indicate the need for modifying organizational action, and then the appropriate process is corrected so that outputs are once again within organizational norms and established variance levels (Argyris and Schön 1996, 20-21; Choo 1998). More subtly, measures may be used to foster double-feedback loop learning, where measures provide a first feedback loop to organizational members, who then act as a second feedback loop by changing existing organizational "theories-in-use," norms and values (Argyris and Schön 1996).

Measures and Weickian Sense-Making

Weickian sense-making theory (Weick 1979; 1995) offers a framework for understanding how individuals make sense of daily information (such as that provided in the form of measures) and events that occur in the workplace. The larger goal of Weick's model of organizing is concerned with how equivocality is reduced through processes and interactions whereby sense is constructed, often retrospectively. Organizations are structured by the sense-making practices they use. The goal is to create and foster an environment that is conducive to sense-making—one that allows for the development of plausible, coherent, and memorable stories that aid in reducing equivocality for members of the organization. Weick might argue that measures become the agreed-upon, retained set of procedures and routines for enacting environments and selecting interpretations. Measures may also be used in sense-making to enact an overly limited environment, limit the possibility of double-interacts, or retain insufficient responses.

Measures and Quality Management

In general, quality management suggests that all of the organization's efforts should be driven by the needs and expectations of the organization's stakeholders or customers, which can be identified only by measuring those factors, as well as measuring the performance of internal processes and people, that contribute to the products and services used by the customer. Also central to the quality approach is a commitment to the continual and incremental improvement necessary to compete in today's marketplace. The history and sources of the quality approach range from Walter Shewhart's emphasis on statistical measurement of process outputs (Grant, Shani, and Krishnan 1994), to W. Edwards Deming's emphasis on common and special causes for problems (Aguayo 1990; Dobyns and Crawford-Mason 1994; March 1994), to extensions and adaptations by Crosby (1992), Drucker (1991), Feigenbaum (1983), Garvin (1988), Ishikawa (1986), Juran (1990), and Taguchi (1986). The revised and expanded approaches focus more explicitly on customer needs and expectations, leadership, communication, use of data, employees, organizational assessment, continuous improvement, and social responsibility. Measures allow for the identification and documentation of processes and outcomes, the sources of insufficient quality, and the consequences of changes in these processes (Levin 2000). Some critique the quality approach to measures as over-emphasizing activities at the cost of results, compiling too much data, failing to base decisions on data, tensions between

standardized production and continuous improvement, and unspoken, incomplete, or inconsistent measurements (Brown, Hitchcock, and Willard 1994; Victor, Boynton, and Stephens-Jahng 2000).

Measures and Critical Theory

Critical theorists view the organization as a system of domination where those in power (managers and owners) exert control over those without power (employees). The central goal of much critical theory is to reveal these systems of domination and oppression by peeling away the layers of discourse to reveal the power structures that exist beneath—an outcome that should lead to positive results for *all* organizational members (Alvesson 1996; Clegg 1989; Deetz and Mumby 1990). Within critical theory, measures function as a form of organizational discourse that serves to control, if not oppress and dominate, employees. Managers can also use measures to exert power over employees while reinforcing the power of those who produce the measures. Finally, the language of measures can serve to limit the attention and focus of discourse within the workplace (for example, as embedded within the discourse and vision of quality management, see Fairhurst 1993 and Wendt 1994). Things that are being measured will be attended to by organizational members, while things that are not being measured tend to remain outside one's frame of interest or consciousness.

This brief overview leads to the following general research questions:

- RQ1: How do the perceptions and uses of measures contribute and/or lead to individual and organizational learning, and changes in organizational members' understanding of work-related tasks?
- RQ2: What are the perceptions of measures held by members in the organization, and how widely and consistently are their interpretations and uses shared?
- RQ3: To what extent are measures used to learn about customer satisfaction, analyze and improve internal processes, and focus/limit attention?
- RQ4: How are the sources and evaluation of measures related to perceived control over members' work and discourse?

THE SITE AND SAMPLE

The organization, referred to here as Echo Systems Inc. (ESI), is a for-profit information systems services corporation with multiple locations throughout the world. The authors' study involved the unit (or, in ESI's terms, "account") that provides telephone-based servicing of corporate calling cards for more than 6000 companies that are customers of Big Telephone Company, Inc. (BTC). For example, a business such as the Widget company that calls BTC to obtain 300 calling cards for new personnel is actually connecting directly with ESI, which will open an account and issue the calling cards. The account is managed from two sites: Echo West and Echo East. The employees at Echo West are mostly frontline employees whose primary responsibilities are in the customer service area. They are the employees who receive the faxes and phone calls requesting additions, deletions, and changes to the calling card accounts. Employees at Echo East are primarily technology based and are the people who develop and design the systems that are used by the customer service representatives (CSRs) at Echo West. Thus, they are interdependent, but represent two different sets of professional training, goals, and customer orientations.

In 1994, Echo West was receiving 10,000 facsimiles per week requesting changes, deletions, additions, and other assorted services related to the corporate calling card accounts. As the organization was contracted to meet or exceed a variety of measured service criteria (for example, reducing the amount of time it takes to delete a fraudulent card to 15 minutes), the huge flow of paper was becoming a major obstacle in providing accurate and quick service. Thus, management decided to implement a pair of integrated information systems, replacing the traditional mainframe system and the paper-based fax delivery system. The first system was a Windows-based workstation service support system built around a customer service database (CSD) managed by a client-server network. The second system was a document imaging system used to scan and file the incoming faxes, and make the images immediately available to the appropriate personnel through a desktop workstation. The screens of the two systems appear side-by-side on the

Figure 1 Re-creation of call observing form—Revised 8/24/95—Front.

Date: _____ Call Begins: _____ Call Ends: _____

Rep: _____ Customer Name: _____

Observed by: _____

Standard	Conference/Hold procedure Met	Not Met	NA	Comments
1. Thanks customer for calling BTC, IDs self	1	0		_____
2. Offers assistance	1	0		_____
3. Obtains customer info relevant to call	1	0	0	_____
4. Verifies customer info	1	0	0	_____
5. Acknowledges customer's issues/frustrations	1	0		_____
6. Information provided incorrect	1	0	0	_____
7. Provides complete information	1	0	0	_____
8. Makes a commitment to action after the call	1	0	0	_____
9. Acknowledges and confirms request	1	0	0	_____
10. Offers additional assistance	1	0	0	_____
11. Does not speak as customer is speaking	1	0		_____
12. Does not rush the customer	1	0		_____
13. Speaks with a smile/enthusiasm	1	0		_____
14. Speaks at customer's level	1	0		_____
15. Maintains control of the call	1	0		_____
16. Remains calm with a difficult customer	1	0	0	_____
17. Responds as customer speaks	1	0		_____
18. Minimizes excessive nonbusiness talk	1	0		_____
19. Minimizes dead air	1	0		_____
20. Listens actively—minimizes having to ask customer to repeat information	1	0		_____
21. Quotes accurate card delivery interval	1	0	0	_____
22. Refers to competitors as "other long distance companies"	1	0	0	_____
23. Uses an appropriate closing	1	0	0	_____

user's workstation, and many CSRs can view the database file and the document image simultaneously.

There is a strong focus on the use of teams within Echo West. During the study, Echo West consisted of seven teams under a single account manager. The teams included: production, development, platform management, tier II support, customer service, request management, and people process support. The bulk of the authors' time was spent with users of the new workstation system; therefore, they limited their interactions to the customer service and tier II support teams.

This account/organizational unit is quite concerned with measures, making it a logical choice for this study. Together, BTC and ESI have jointly established several direct measures of quality (DMOQs) to govern ESI's performance. In fact, it was ESI's ability to meet BTC's requirements that led them to secure the account contract in the first place. There are DMOQs that relate to customer service and DMOQs for system capabilities. Since much of the activity at Echo West centers on telephone work, one of the more prevalent DMOQs has to do with overall call quality. CSRs have a list of 29 standards that they must meet during each phone call. Figure 1 shows an example of the call observing form that is used to monitor and evaluate CSR phone calls. Each of the 29 criteria relates back to one of the following six direct measures of quality that are collectively referred to as overall call quality:

1. Provides complete and accurate information
2. Rated as polite and professional
3. Takes opportunity to fulfill unspoken needs

Figure 1 cont. Re-creation of call observing form—Revised 8/24/95—Back.

Conference/Hold procedure

Standard	Met	Not Met	NA	Comments
24. Notifies and gives reasons for conf/hold	1	0	0	_____
25. Continues assistance as necessary/minimizes hold time	1	0	0	_____
26. Rep relays info to receiving party when conf	1	0	0	_____
27. Thanks customer for holding	1	0	0	_____
28. Uses appropriate closing if conferencing	1	0	0	_____
29. If conference is unsuccessful, offers an alternate solution	1	0	0	_____

Type of call

Maintenance	Inquiry	PIN	Security	Defect
Add CD/Inter	Billing	Get pin	Change CD #	Blocked card
Reissue	Get CD number	Change	Delete	Damaged card
Delete	Instructions	Suppression	_____	No call back
Chg acct info	Services	_____	(other)	Not received
Chg CD/Inter	Status	(other)		Not working
_____	Direct			Quantity
(other)	Restrict			Wrong address
	Purchase limits			Wrong name
	_____			_____
	(other)			(other)

4. Takes control and handles call effectively
5. Quotes correct card delivery interval
6. Uses proper hold procedure

Teams that consistently achieve high levels of overall call quality are rewarded with recognition at the monthly account meetings and through notices on public bulletin boards.

A second organizational measurement system, measurement of value and expectations (MOVE), was presented at the January 1995 annual customer review presentation, although it is likely that it was developed earlier. The apparent goal of this measurement system is to provide expanded measures that revolve around six key service characteristics: reliability, assurance, innovation, tangibles, empathy, and responsiveness. Both the DMOQs and the MOVE measures reveal a great deal of overlap. But interestingly, the MOVE acronym was never mentioned in any of the authors' interpersonal data sources. It can, however, be found in other customer-oriented documentation.

This study used multiple sources of data to explore the use of measures within the context of ESI: three survey administrations, interviews, focus groups, process tracking, and the review of archival materials. To be more explicit, the researchers developed and administered the surveys, and conducted the focus groups; worked with a team to observe and track one particular process; and read organizational archival materials such as documents, memos, and forms. Table 1 provides a complete listing of the data sources and their expected contributions to the proposed research questions.

RESULTS

The surveys were administered during three strategic time periods: several months prior to implementation of the CSD and document imaging systems, shortly after the systems were in place, and several months after use of the systems.

Survey Findings: Time 1

A total of 173 Echo West (a response rate of 97 percent) and 37 Echo East employees (a response rate of 95 percent) completed the first survey in March 1995. Slightly more than half of the respondents (58 percent) were

Table 1 Data sources and their contributions to the proposed research questions.

Data source	Research question addressed	How?
1. Survey research	RQ1, RQ4	• Employees are asked about "best" measures • Employees are asked to distinguish between measures that empower and measures that control
2. Individual interviews	RQ1, RQ2, RQ3, RQ4	• Employees are asked how they feel about the measures used by the organization • Employees are asked how they make use of measures
3. Process tracking	RQ3	• By tracking how measures move from one department or function to the next, one can see how measures lead to learning and changes in the workplace
4. Focus groups	RQ1, RQ2	• By gaining additional insight into employee perceptions of measures • Additional insight into how measures are interpreted by employees and lead to changes in behavior
5. Review of archival materials (reports, survey instruments, outcome measures)	RQ3	• Provides information on how measures are presented to customers and organizational members

Note:
RQ1: What are the perceptions of measures held by all and by different groups in the organization?
RQ2: How do these perceptions of measures contribute and/or lead to transformations in organizational member understanding of work-related tasks?
RQ3: How do transformations in understanding lead to changes in the workplace that may lead to individual and/or organizational learning?
RQ4: How are the sources and evaluation of measures related to perceived control over members' work and discourse?

female, and the average age was 33.3 years. The bulk of the responses came from Echo West, or from those involved in ESI's customer service aspect, as opposed to its system design aspect.

First, as ESI and the account in particular represent themselves as supporting a quality management approach, individuals were asked how frequently they thought seven quality areas (the general categories used by the Malcolm Baldrige National Quality Award (MBNQA), which include leadership; information and analysis; process quality; human resource development and management; strategic planning; business results; and customer satisfaction) were measured in their organization. The baseline results revealed that few respondents believed that these areas were specifically measured (see Table 2). Further discussion with organization personnel reinforced this fact, and it has since been noted that using the MBNQA categories, the organization makes use of the balanced scorecard approach. Therefore, the balanced scorecard terminology was used in the interviews that followed the Time 1 survey.

When asked which of the seven MBNQA criteria categories they perceived to be the two most often measured areas in the organization, respondents in the two locations differed in some of their responses. As Table 2 indicates, Echo West employees rated process quality and customer satisfaction as the two most often measured general areas, while Echo East employees rated process quality and human resources development and management as the two most frequently measured areas. This makes sense given that Echo West employees are directly involved in customer service and satisfaction, while Echo East focuses more on internal matters such as system and employee development, and both are part of ESI, which stresses the process quality aspect of quality management.

The authors also asked people to list two of the "best" measures—based on the options listed on the survey as well as anything else available to them—to assess quality. As Table 3 indicates, personnel at both locations listed customer satisfaction as the best measure to use to assess quality, indicating that this quality

Table 2 Mean frequency of measures that use the Malcolm Baldrige National Quality Award (MBNQA) categories, Time 1

MBNQA measure	Echo West	Echo East
	n = 130	n = 39
Leadership	1.8	1.2
Information and analysis	2.8	1.9
Strategic planning	2.4	1.4
Human resource development and management	2.1	2.0
Process quality	3.5	2.2
Customer satisfaction	3.2	1.8
Business results	2.8	1.8

Note: Respondents were asked how frequently (1 = very infrequently; 5 = very frequently) measures using the seven categories of the MBNQA are collected by ESI.

Table 3 Ranking of best available measures of quality, Time 1

Best available measure	Echo West	Echo East
	n = 130	n = 39
Customer satisfaction	27%	26%
Call monitoring	22%	—
Employee satisfaction	—	18%
DMOQs	15%	—
System test/IST	—	13%
Process quality	12%	—
Annual quality review	—	10%

Note: Individuals were asked to list the two best measures available for assessing quality. The percentages shown here reflect respondents mentioning these seven options as the top two choices.

goal had been successfully diffused and accepted within the organization. For Echo West, the next two best measures were related to call monitoring and DMOQs. For Echo East, the next three best measures were employee satisfaction, system testing, and the annual quality review.

These differences, as already noted, are a direct reflection of the type of personnel at each location. Since the primary task of Echo West employees is providing telephone-based customer service, it makes sense that they would show concern for a measure (monitoring) that provides feedback on how they perform that task. Further, the monthly reporting of the DMOQs provides explicit feedback about service and system performance levels stipulated by the contract with BTC. Both of these show an explicit emphasis on feedback through measures of service provision. Likewise, as Echo East employees are charged with designing the system that supports the CSRs of Echo West, it makes sense that they would be concerned with system measures, although job satisfaction comes first. In this sense, employees more distant from direct contact with customers and service provision may become more buffered from those concerns, and more concerned with internal satisfaction and working conditions. Thus, quality principles directed toward customer satisfaction may be less salient for internal systems developers, even though the systems are the very infrastructure through which customer service is provided.

Survey Findings: Time 2

A second survey was administered to employees of both Echo West and Echo East in November of 1995. Because of the attrition that can be expected as part of a longitudinal study, and the turnover frequently experienced in information systems units, the sample size was smaller, but the response rate within this administration was still quite good, with 82 Echo West (a response rate of 68 percent) and 27 Echo East (a response rate of 84 percent) employees completing the survey.

Employees were once again asked about preferred measures. However, based on the responses to the Time 1 survey and some informal discussions with Echo West personnel, the questions were changed somewhat in an attempt to speak more directly to their understanding of measures. Employees were asked to list the best measure for improving performance from both their own standpoint and also from ESI leadership's standpoint. Once the respondents identified those two measures, employees were then asked to evaluate the

Table 4 "Best" performance measures from individual and organization leadership standpoints, Time 2

Measure	Your best measure Valid Percent	West	East	ESI's best measure Valid Percent	West	East
reviews	7.9%	7.4%	9.5%	8.0%	6.0%	14.3%
training	1.1	1.5	—	3.4	4.5	—
leader reviews	4.5	2.9	9.5	5.7	3.0	14.3
team evaluation	3.4	4.4	—	2.2	3.0	—
ranking-rating	1.1	1.1	—	4.5	3.0	9.5
on job performance	11.2	10.3	14.3	11.4	13.4	4.8
manager feedback	3.4	1.5	9.5	2.3	1.5	4.8
feedback CNF's	1.1	1.5	—	—	—	—
HR plans	1.1	—	4.8	2.3	1.5	4.8
adaptability to CSD	4.5	4.4	4.8	3.4	4.5	—
improve climate	2.2	2.9	—	5.7	7.5	—
improve ind skills	3.4	4.4	—	3.4	4.5	—
monthly reports	1.1	1.5	—	2.3	3.0	—
system test-IS	3.4	1.5	9.5	1.1	—	4.8
center access-CMS	3.4	4.4	—	3.4	4.5	—
productivity	5.6	7.4	—	8.0	10.4	—
accuracy	2.2	2.9	—	—	—	—
# defects	3.4	—	14.3	4.5	—	19.0
card proc time	1.1	—	4.8	1.1	—	4.8
call monitoring	4.5	5.9	—	9.1	11.9	—
overall call quality	2.2	2.9	—	—	—	—
annual quality review	1.1	1.5	—	1.1	1.5	—
DMOQs	2.2	2.9	—	3.4	4.5	—
monthly stats	3.4	2.9	—	3.4	3.0	4.8
CSD measures	2.2	2.9	—	—	—	—
assessments	1.1	1.5	—	—	—	—
M&Ps	2.2	2.9	—	—	—	—
customer surveys	6.7	5.9	9.5	3.4	1.5	9.5
customer comments	3.4	2.9	4.8	3.4	3.0	4.8
customer input	1.1	1.5	—	—	—	—
don't know	4.5	5.9	—	3.4	4.5	—

Note: Individuals were asked to list the best measure for improving performance from both their own standpoint and from ESI leadership's standpoint. The valid percentages reported here reflect the frequency of respondents checking each measure.

Table 5 Specific comments representing those categories of measures noted in Table 4

Heading	Comments
Reviews	Peer review, appraisal reviews and development, evaluations team
Training	Classroom, train us more
Leader review	Timely feedback on performance, structured performance, leader review, team and leader satisfaction index
Team evaluation	Team's performance, adequately prepared, good system skills
On-job performance	Completion success of assigned project, doing what you are tasked, doing quality work, effectiveness, how well you get tasks done, job circle, apply and share skills learned, helping out with team's performance, decisiveness, lack of patience, performance vs. requirements, pull work occasionally and spot check it, area they need to work on is lacking, hands-on, one-on-ones, examples from previous work, training evaluations given by students, seeing people performing what they learned in class
Improve climate	Improving communication, communication between groups, incentive recognition for hard work, motivational tactics, mentoring, keep morale high, team meetings
Improve individual skills	Given more leadership classes, pay closer attention
Monthly reports	Transaction reports, weekly maintenance report
Productivity	Speed of completing a process, number of transactions, productivity, spreadsheet report, monthly rep team
No. of defects	Resolution, size of system code, correct errors
Card processing time	Cost vs. IPACS
Monthly stats	Daily stats and requirements, metrics
Assessments	Number of satisfactory results
M&Ps	Up-to-date information, good M&Ps, timely updates and changes

extent to which the measures gave them, and, separately, gave ESI, control over how they perform their work. As Table 4 indicates, not only do differences exist between what individuals consider to be their own best measure of performance versus their perception of ESI's best measure of performance, there are also differences between the two locations.

Generally speaking, individuals' most frequently chosen best measures to help improve performance included on-the-job performance, reviews, customer surveys, and productivity. They reported that ESI's best measures for improving performance were on-the-job performance, call monitoring, reviews, and productivity. While these top-rated measures overlap, there are some differences worth noting, especially in the areas of call monitoring and customer surveys. While both of these measures are related to customer service, this finding raises an interesting issue that will appear again in the interview results: CSRs appear to think that ESI places too much emphasis on call quality (the outcome of call monitoring). For the CSRs, call quality does not provide a complete picture of the "total rep"; it does not take into account all of the other tasks that could ultimately lead to customer satisfaction. Further, as noted in several interviews, following the exact call procedures actually reduced the quality of the customer relationship and service provision in some cases, such as when a CSR had a long-time account relationship with a particular customer, for whom following a detailed greeting and closing procedural was overly formal and impeded getting to the request.

Perhaps the most noticeable difference between Echo West and Echo East with respect to *individuals'* best measures for improving performance was in the realm of diversity of measures. Echo West selected 28 of the 31 measures noted in Table 4, whereas Echo East

Table 6 Measures and perceptions of control, Time 2

Statement	M	SD	Echo West	Echo East	East/West
Your best measure gives:					
Organization control over my work	4.83	1.40	4.74	5.16	t = -1.1
Me control over my work	5.40	1.40	5.50	5.26	t = .6
own vs. organization?			t = -2.8*	t = -1.3	
Organization's best measure gives:					
Me control over my work	4.63	1.68	4.66	4.57	t = -.7
Organization control over my work	5.23	1.51	5.18	5.50	t = .2
own vs. organization?			t = 1.4	t = 1.9	

Note: Individuals were asked to evaluate (1 = strongly disagree to 7 = strongly agree) the extent to which the measures gave them, and gave ESI, control over how they perform their work.
* $p < .05$

selected only 11. This may simply be due to the fact that more Echo West employees completed the survey and, as such, selected more responses. However, it may also be a reflection of the type of work done at each site. For example, Echo East, charged with design of the system used by the CSRs of Echo West, is more likely to be concerned with measures relating to the system, such as system testing and the number of defects. It also reflects that Echo East system developers are more buffered from the customer environment, and thus see less of the diversity in activities and feedback than do Echo West personnel.

The most noticeable differences between Echo West and Echo East in perceptions of ESI's best measures were, again, a greater diversity of measures for Echo West, with an emphasis on on-the-job performance, call monitoring, and productivity. Echo East emphasized number of defects, reviews, leader reviews, personnel ranking rating, and customer surveys.

It should also be noted that, as Table 5 indicates, there is still a wide breadth of language and terminology used to identify salient measures, implying a heterogeneous, rather than an accountwide, range of conceptualization, use, and importance of different measures.

As Table 6 indicates, when asked about the ability of measures to provide control over one's own work, Echo West employees thought their own best measure allowed them more control over their work than it allowed the organization. Though not a statistically significant difference, Echo West employees thought the organization's best measure gave the company

Table 7 "Best" performance measures from individual and organization leadership standpoints, Time 3

Measure	Yours	Organization's
Product measurement	31.0%	30.8%
Performance/review (peer, team, customer, feedback)	26.8	23.1
Training/education	5.6	11.5
Pay	2.8	11.5
System defects/SRS	7.0	3.8
System availability/performance	2.8	7.7
Call monitoring/observing	4.2	3.8
Recognition	—	7.7
One-on-ones, informal feedback	7.0	—
Customer satisfaction	7.0	—
System/work process Knowledge/experience	5.6	—

Note: Valid percent denotes the frequency of responses that can be considered as part of these categories. Since this table does not include all responses (only those with the highest frequencies), totals may not equal 100%.

greater control over their work more than it gave them control over their own work. Looking at the two comparisons, the source of the best measures—as perceived by the organizational member, regardless of whether the source was the individual or the organization—provides the greatest control over the respondent's work. The

Table 8 Measures and perceptions of control, Time 3

Statement	M	SD	Echo West	Echo East	East/West
Your best measure gives:					
Organization control over my work	4.63	1.68	4.76	4.10	$t = .9$
Me control over my work	5.71	1.15	5.66	5.50	$t = .4$
own vs. organization?			$t = -3.4^{**}$	$t = -2.0$	
Organization's best measure gives:					
Me control over my work	5.36	.99	5.20	5.50	$t = -.8$
Organization control over my work	5.39	.99	5.30	5.25	$t = .1$
own vs. organization?			$t = .3$	$t = -.8$	

Note: Individuals were asked to evaluate (1 = strongly disagree to 7 = strongly agree) the extent to which the measures gave them, and gave ESI, control over how they perform their work.
** $p < .01$

processes and outcomes of system design work may be better measured by external, organizational criteria, while the processes and outcomes of service provision may be better measured by internal, customer representative criteria. Further, service personnel may notice a distinction between individual and organizational control over their work, while system personnel may not.

Survey Findings: Time 3

A third survey was administered in September 1996. One hundred forty-eight surveys were received from Echo West (a response rate of 68 percent) and 40 surveys from Echo East (a response rate of 84 percent). As with the Time 2 survey, respondents were asked to list the best measure for improving performance from their standpoint, as well as the best measure for improving performance from the organization's standpoint. As Table 7 summarizes, both employees' and ESI's best measures for improving performance fell into two categories: product measurement and performance reviews (by peers, team members, and customers).

New to this survey administration were questions that asked employees to assess the extent to which the best measures contributed to their personal learning about work performance. Generally, these responses were above the middle value of 4, indicating that respondents believe that they learn from both types of measures. Employees claim to learn only about equally well from their own ($M = 5.8$, $SD = .7$) and from the organization's ($M = 5.7$, $SD = .8$) best measure ($t = -.44$, n.s.).

Individuals were once again asked about the ability of measures to provide control over one's own work (see Table 8). Echo West employees thought their own best measure gave them greater control over their work. Echo West employees, however, did not think ESI's best measure provided ESI with any more control than ESI's best measure provided to the individual.

Echo East employees did not believe their own best measure offered them any greater control over their work than their best measure gave to the organization. The difference is noticeable (5.5 compared to 4.1), but is not statistically significant because of the small sample size for this test ($N = 10$). As with Echo West respondents, Echo East employees did not think ESI's best measure gave them any greater control over their work than ESI's best measure gave ESI control over their work.

When asked which measures would be most useful for learning how to improve performance, the most frequent responses were performance reviews (by peer, team, and customer) and product measurement, followed by training and education. Note that direct evaluations by the people and customers with whom the employee interacts are deemed the most valuable ways of learning.

Interview Results

Eight in-depth interviews with Echo West employees were conducted during the fall of 1996 and summer of 1997. As Table 9 indicates, six of the interviewees held positions at the CSR level, and provided a "frontline" employee perspective. At the start of this project, Lauren functioned as the team leader of the tier II support

Table 9 Echo West interview subjects

Interviewee (alias used to preserve anonymity)	Function	Age	Months with Echo West
Patti	Customer service rep	26	24
Margo	Customer service rep	53	59
Lauren	Team leader	na	na
Casey	Customer service rep	38	27
Diana	Team leader	48	101
Alex	Customer service rep	na	na
Carl	Customer service rep	31	100
Hannah	Customer service rep	na	na

Note: Age and tenure were obtained from the T1 or T3 survey.
na = data not available because interviewee did not complete either the T1 or T3 survey

team, but by the end of the authors' data collection she had moved up to manage the complete tier II group, which includes operations, tier II support, and user support. Her insights, and the responses offered by Diana, manager of the people process support team, provided a management perspective.

Among the individuals who were frontline employees there appears to be a general acceptance of measures. As Patty noted when asked how she felt about measures, "It doesn't bother me." Casey reiterated this point by adding, "I don't think they're directly in the back of my mind."

Responses to the first question varied: "When you hear the word 'measures,' what do you think of?" For Patti and Margo, the response was "productivity." Carl responded with "quality control." For Casey it was the "numbers part," for Alex it was "recording what you do and how well," and for Hannah it was, "what we do and how we do it—performance." The responses offered by the team leaders were a bit more complex. For example, Diana responded with: "A way to evaluate a process to determine if it's working the way it should be working, data that one can use to look at his or her processes to determine where one needs to make some changes to improve the way the process is operating."

It quickly becomes clear that the term "measures" means different things depending on one's job and position within the organization. It is also worth noting that Lauren, who was specifically trained in the quality measurement approach, preferred "metrics" to "measures."

There are several ways that unit members find out about measures. CSRs learn about their performance with regard to specific measures from their team leaders and, in some cases, receive a printed report that shows "activity" for a specific period of time. CSRs also learn about measures at monthly account meetings. Casey also noted that CSRs learn about the measures, "If you 'make' them." In other words, there is acknowledgment for those teams that reach and surpass measurement goals. There are also individual rewards for consistently achieving certain performance levels with regard to call quality.

Most individuals are given some indication that certain measures are more valued than others, and for the most part, it is the DMOQs that take center stage. As Alex observed, most of the DMOQs are "wrapped up in the phone," a factor that she found to be problematic because they (the DMOQs) did not capture interactions with customers through other means (for example, fax). Diana offered a management perspective by adding: "The call performance measure has really dominated and everybody focuses on that—I think a big reason for it is because there's a recognition program built around it and that ignores everything else a rep does...and I don't think that's right." This appears, however, to be a dilemma that has been recognized by others and,

according to Carl, there was a move to shift from the over-emphasis on the phone to an assessment of "the total rep"—a shift that would acknowledge such factors as workload, attendance, and tardiness, in addition to the call quality ratings that have been the focal point until now. Note that the DMOQs, however, are account performance measures explicitly identified in the contract between ESI and BTC, so they will dominate the use and evaluation of measures. Thus, there are several tensions about what constitutes good performance, and who is the final arbiter of performance: the immediate customer, BTC, the supervisor, or the representative.

When asked if measures helped them do their job, the responses were mixed. For Patti, the measures did help. As she explained: "If you see from the call quality report that you are low, you can make changes in how you do your job." Margo also thought the measures were helpful, but for a slightly different reason. "If you see productivity is down for a month you try to understand why—my productivity was way down in July because I was on vacation for two weeks." For Margo, measures were helpful because they helped her to rationalize her work performance. For Carl, the measures were helpful. He said, they "keep me on my toes." In other words, Carl used the measures to help him see where he was with regard to the requirements established by the customer. On the other hand, Alex did not think the measures helped her to do her job. She thought the organization needed to reward those who were top performers (those who consistently met or exceeded the requirements jointly established by ESI and BTC); then, perhaps, employees would be more motivated to improve productivity. For Lauren, the measures were not helpful because she questioned the accuracy of the measures that were in place, a point that will be raised again later in this section.

When asked if they felt controlled by the measures that were in place, again, the responses were mixed. Casey stated that she felt controlled "to a degree." Margo said, "I don't feel controlled by them at all—I know they're necessary." Carl clearly stated that he felt controlled by the phone quality checklist that dictates the precise actions of the CSR (see Figure 1). One of the more interesting responses came from Lauren, who did not feel controlled by the measures. She followed up by saying that her team members might have a different take on it because she, as the team leader, tends to be very numbers oriented (remember that she referred to measures as "metrics"). When a team member approaches her saying, "Well, I followed up with a phone call," she counters with, "How many calls? What dates? That sort of thing." As such, her team members might, in her opinion, feel somewhat controlled by measures.

Both Lauren and Diana pointed out that they lack confidence in the accuracy of some of the measures currently being used by ESI. As Lauren explained: "I don't feel confident right now that I've got a metric system in place that gives me accurate numbers." Both also thought this was problematic, since decisions were then made based on information that may not be entirely accurate. So not only are there conflicting arbiters of performance, but some measures of performance are not necessarily accurate.

One of the final interview questions posed dealt with familiarity with the balanced scorecard approach. The balanced scorecard is a tool for managing the measurements used by an organization. An earlier interview with the previous manager of the people process support team indicated that ESI purports to make use of this tool. However, none of the CSRs were familiar with the scorecard or were able to explain it. Only Lauren and Diana were able to expound on the details of this approach and how it is being used at ESI. Thus, a gap exists between the understanding of measures at the management level and the understanding of measures at the frontline. Managers may think that it is clear how individual measures contribute to the big picture, but this type of understanding is not clearly communicated to those who are actually doing the work.

Process Tracking Results

During March of 1997, several intensive days were spent with members of Echo West's tier II group. The goal was to gain a more in-depth understanding of the core processes used by each of the three tier II teams and to ascertain which measures were associated with these processes. This group, under Lauren's supervision, was composed of three teams: tier II support,

Table 10 Tier II core processes and measures.

Team/Process	Related measure(s)
	Tier II Support
Nonconformances; special requests; customer work-arounds (CWAs); card troubles; defects; expedites; pull and traces	• Number received per month • Number of open issues biweekly
Explodes	• Number received per month
	Operations
Inbound port; Outbound port; Conversions; New accounts; Merges (MCN switchouts)	• Monthly totals (individual and team) • UOWs (units of work)
Corporate Edge Billing	• UOWs (recently added)
Adding 800/NRA	• Monthly total 1-800 call agreements signed
	User support
CSD provisioning	• Monthly number of CSD packages shipped
CSD training	• Training status report
Customer installation assist	• Monthly Help Desk call summary (number of calls by type)
Customer problems	• Monthly Help Desk call summary • Weekly CSD problem report (number of problems closed out per week)

operations, and user support. Each team was charged with several support tasks that aid the CSRs. For example, the tier II support team handled, among other things, "defects." If a customer or end-user contacted a CSR complaining that his or her calling card was defective, the CSR would complete a form detailing the problem and pass it along to the tier II support team for processing. The goal was to free the CSR from the paperwork attached to such processes so he or she might continue to work with other customers.

After three days of extensive individual conversations with 12 members of the tier II group (including group leader, Lauren), the authors were able to isolate 18 core processes, along with their primary measures, that the three teams are responsible for, as Table 10 summarizes. Since each team is charged with different processes, it makes sense that each team functions differently with respect to measures. Two of the three processes are summarized here.

The operations team tracks the units of work (UOWs) distributed to each team member. Each core process, after lengthy evaluation and tracking of the amount of time and effort associated with the process, has been assigned a given value (for example, most outbound transfers of card information are weighted at one or two units of work, while most inbound transfers are worth 12 units of work). Each time an information transfer request comes to the team, it first goes through the team controller, who attempts to distribute the units of work fairly across all team members (neither the tier II support nor the user support team uses such an approach for assigning work.). The average number of UOWs at the time of this study was 217 per month per team member. It should be noted, however, that all team members (and the team leader) were quick to say that the UOWs are only used for distribution of work and to justify staffing needs; they are not used in performance reviews. Each process also has its own checklist detailing the steps required to complete the process, and upon completion, a "completion notice" is sent to all appropriate parties. This reveals one of the largest problems faced by this team—paperwork. Although there is greater control over work assignments and more accurate measures of outcomes, this team has countless forms and checklists. For the operations team, the document imaging and customer database systems appear to have done little to alleviate the paper crunch.

The user support team, unlike the other teams, is confronted with the measurement issue of completeness. For example, one of the core processes of the user support team is CSD provisioning. According to the user support team leader, CSD provisioning includes: CSD training (including distribution of computer-based training packages), general CSD support, CSD reporting, and CSD releases (in other words, distribution to customers of new CSD software releases). However, the

only measure currently in place, which, according to the user support team leader, is one of the newer DMOQs specified by the customer, is the required number of CSD software packages shipped per month, which is 50. This presents a measurement paradox. If a given core process includes a number of subprocesses, only one of which is being measured, then where will employees direct their energies? Quite antithetical to the quality approach, the established parameter for this measure leads employees to always perform at a given level.

Focus Group Results

Three focus groups were conducted in September 1995. The first group was composed of five team leaders, and the second two groups included different sets of members of the tier II team.

At this point, the CSD system (the desktop, Windows-based customer database, and card processing system) was not yet installed, though document imaging was in place and about 30 percent of the incoming faxes were being handled by the imaging system. Not all groups, however, had the ability to view faxes. For example, tier II support employees were not slated to receive the imaging until sometime in 1996 and as such, whenever they wanted to view a fax, they had to ask someone to print the image for them. Limited access, as well as extensive training on a system that they had yet to use, led to increased stress and uncertainty. Many of the topics covered during the focus group meetings centered on the new technology and training issues related to the new systems. However, some time was spent broaching the matter of measures and four findings are worth noting.

1. In general, there is the perception that the number of transactions is off target. For example, CSRs can do "multi-adds" (adding multiple cards at one time) with a single keystroke. Some CSRs, however, have been seen doing each card individually. Each card counts as a single transaction, so if the CSR were to have used the multi-add feature to add 20 cards, it would have still appeared as a single transaction. Using the multi-add feature would make the work much faster and easier, but would not "count" for as many transactions by the CSR.
2. The focus groups also revealed that the number of cards held by a customer is not the equivalent of activity. In other words, a small account (one with few cards) can have a lot of activity. Conversely, a large account with many cards may have very little activity, which in turn means little activity for the CSR.
3. As there is so much emphasis placed on transactions and cards, CSRs feel pressured into keying all of their own work rather than using the multi-add feature, or handing off certain pieces to data entry. Furthermore, since there are no standards for CSRs, it remains unclear as to when—or at what number—CSRs should send things to data entry. Measurement confusion generates process and accountability confusion.
4. Finally, there are some cases where employees do not know what they're being measured on. In some places, like telecommunications, the only measures of performance are when they hear about mistakes. As expected, this can lead to a great deal of frustration and inability to align oneself with the larger goals—and DMOQs—of the organization.

GENERAL IMPLICATIONS

The general implications of this project can be organized under four broad categories: measurement paradoxes, measurement disconnects, presentation of measures, and measurement assessment.

Measurement Paradoxes

Unfortunately, several of the measures used by Echo West appear to make little sense. For an organization that strives to have a strong measurement focus, this is a paradoxical finding. For example, one of the key measures that drives the user support team is the number of CSD software packages shipped per month. The requirement for this measure—as jointly established by ESI and BTC—is 50 packages. This measure is also the only indicator of the larger core process called CSD provisioning, which includes the subprocesses of CSD training, support, and reporting. The lack of measures that accurately reflect all pieces of this process is one

problem; the fact that there is a requirement to mail out 50 packages is perhaps even more paradoxical. By setting such a requirement, both ESI and BTC have, perhaps unintentionally, established a bar that will not necessarily drive performance, but rather limit performance in ways they may not have anticipated. Why would employees strive to exceed the requirement of shipping 50 packages when they will gain nothing by doing so? As a follow-up to this measurement paradox, one can also consider the fact that no measure of actual installation by the customer is used. Thus, there is no way to know the number of organizations that actually install and use the CSD software, which would seem to be the fundamental goal.

Measurement Disconnects

There are many instances in which the measures appear to hold little, no, or a different value or meaning for organizational members. Thus, these existing measures are disconnected from the employees who are often the recipients of such measures. For example, CSRs are rated on call quality and all of the 29 standards listed on the call observing form (see Figure 1). But for some CSRs, the presence of this measure doesn't necessarily drive them to perform in a particular manner, as the organization might expect the measure to do. Rather, this measure was often used by CSRs to rationalize their performance at a prior point in time. Situated within what Weick would call "retrospective sensemaking," one sees individuals justifying, explaining, or rationalizing past performance so they might make sense of their scores.

There are also disconnects across levels of the organization. When asked about familiarity with the balanced scorecard approach, most of the interviewees (except the two team leaders) had never heard of the approach, and had no idea how it connected to Echo West, Echo East, or ESI. This raises the larger question: Why don't all employees understand how they fit into the broader measurement philosophy of the organization? Support for this supposition can also be found by looking at the survey data. Individuals were asked, at different points in time, what they perceived to be the "best" measure for improving performance from their own perspective and the organization's perspective. If there were a clear understanding of the broader measurement philosophy within this division of ESI, then one would expect to get very similar responses. The responses, however, were quite diverse and often made use of disparate terminology.

Presentation of Measures

There also appears to be some confusion regarding how measures are presented and this, in turn, impacts the familiarity that employees have with certain measures. As the interviews revealed, Echo West's progress toward achieving the DMOQs is reported at the monthly account meetings. While the meetings are typically well attended, employees are only *encouraged* to attend them. As was the case with Patti, one of the interview subjects, many months may go by without an employee attending one of the account meetings. However, progress on many of the CSR measures, and most of the measures tracked by the three tier II teams, are posted throughout the work environment on easy-to-see bulletin boards. Nearly all of these postings focus on DMOQs, or in the case of the tier II teams, the measures they have identified for tracking their core processes. On the other hand, the MOVE measures, which, according to the archival materials, are just as important to the customer as the DMOQs, are absent from both the meetings and the bulletin boards. Although the MOVE measures are still collected, the lack of visibility of these measures has prevented their awareness, use, and value by employees.

Measurement Assessment

There appears to be no continuous improvement effort or periodic reassessment to ensure that the measures being collected are the right ones and ones that are useful to the organization and its members—that is, double-loop learning. There is periodic negotiation between ESI and the contracted customer (BTC, not the actual end-user customers) in order to meet the customer's measurement needs; however, to be a true learning organization, ESI must also ascertain which measures allow its members to learn, and whether better measures might be developed and evaluated.

A RETURN TO THEORY

While the uses of measures within this unit of ESI show support for certain aspects of each theory, they also fail to support other aspects.

Organizational Learning

As part of the Time 3 survey, ESI employees were asked to assess the ability of the "best" measures they had previously listed for their contribution to personal learning about work performance. Generally, these responses fell above the middle value, indicating that respondents do think they learn from these measures. The interviews and process tracking conversations revealed that, although learning is predominantly of the single-loop (corrective) variety, some double-loop (generative) learning does occur. For example, the call-closing scenario that Casey raised during her interview (opening and closing the call with "Thank you for calling BTC" as leading to frustration and annoyance for both CSRs and customers) demonstrated how an error was detected and corrected in a way that involved modification of ESI policies and routines (Argyris and Schon 1995).

There is some support of Huber's (1991) contention that organizations can learn even if not all employees (or units of the organization) learn. When one or two CSRs learned that the Echo West mainframe system would slow down drastically when processing large orders, this individual "learning from experience" (Levitt and March 1995) was shared with other members of the team (Dixon 1992; Kim 1993), the team leader, and then with teams that were impacted by the slowdown and teams that could resolve the matter. It was not imperative that *all* ESI employees learn about the situation. It was sufficient that only some units learned this lesson. But, as Daft and Huber (1987) assert, learning will only occur once information is used. The CSRs could have simply griped about the slowness of the system and not acted upon the issue. But by interpreting, acting upon, and, consequently, incorporating the lesson into the practices and routines of the organization, one can say that double-loop learning has taken place. Nevertheless, it is clear that even in this avowedly measurement-oriented organization, there is limited double-loop learning and even significant limitations on organizationwide single-loop learning.

It is also worth noting that individuals and organizations may not always learn the "right" things (Greising 1994). The focus groups revealed some confusion surrounding what constitutes a "transaction." Since CSRs are evaluated against, among other things, the number of transactions that are handled each month, CSRs quickly learned that more is better; more separate transactions, rather than using the "multi-add key" for transaction batches, is the equivalent of being a better worker. Of course, this seriously degrades unit performance, response time, and customer satisfaction, a crucial measure of unit and organizational performance.

Overall, the organizational learning framework provided some interesting insights into the use of measures for learning at ESI. It should be noted, however, that much of the evidence for learning did not come from measures, but rather from other types of information (it was not the system speed DMOQ that revealed the slowdown during processing large orders, it was a CSR's perception that she could no longer move as quickly from one screen to the next). As such, one might conclude that this framework would need to be expanded to include information beyond what is represented in measures, and the linkages between individual and organizational learning, in order to gain a more comprehensive view of how learning occurs.

Weickian Sense-making

Evidence for sense-making activity at ESI can be found by looking at the focus groups, interviews, and process tracking conversations. Some measures do serve to reduce equivocality when individuals are faced with choosing from multiple, plausible meanings. For example, rather than requesting that CSRs answer the phone quickly, a direction that could have multiple, plausible, meanings, CSRs are required (as specified by the DMOQs) to answer calls in less than 15 seconds, which is the equivalent of two rings. This removes the uncertainty surrounding this aspect of the CSR's job, but also increases equivocality about what constitutes a satisfying customer relationship maintenance.

The interviews and process tracking accounts yielded the most evidence for the presence of retrospective sense-making. For example, individuals can only offer retrospective accounts of why they did or did not ship the required 50 CSD software packages last month, as there is no measure of the process itself. Furthermore, sense-making for this month's performance against the standard cannot be divorced from sense-making of last month's performance against the standard.

Finally, as Weick (1995) notes, in sense-making activity, accuracy is nice, but not necessary. Of greater value is the plausibility of the account, and whether it makes for a good story. For example, in recounting some of the troubles surrounding the appropriate procedure for closing a call, one of the interview subjects strove to tell a plausible story surrounding the events that led to a policy change whereby CSRs now close a call by simply saying "Goodbye" rather than "Thank you for calling BTC."

The Quality Approach

The quality approach highlighted whether measures were being used in support of the six core concepts of the quality approach: customer focus, leadership, communication, use of data, organizational assessment, and continuous improvement. For example, as the Time 1 survey results revealed, when asked to list two of the best measures available for assessing quality, the top-rated response across both locations was customer satisfaction. The archival materials supported this emphasis on customer satisfaction as well with samples of ESI's Customer Satisfaction Index (CSI), which have remained favorable and above the scale's midpoint of 4 for several years running. The CSI was 5.1 in 1993, 5.4 in 1994, and 5.23 in 1995. Although there was a slight drop in the 1995 CSI, the fact that ESI has chosen to measure customer satisfaction continuously and has chosen to report trends over time can still be viewed as evidence for a solid customer orientation.

The customer and employee surveys (as well as other channels) offer several feedback loops for evaluating both internal and external customer satisfaction, thus providing support for the communication component of the quality approach. And although the external customer information has led to process changes to increase external customer satisfaction (for example, fraudulent cards used to be deleted within a single business day, now they are deleted in less than 15 minutes), it remains unclear how the internal customer information is being used for continuous improvement, especially given the tension between the two forms of customers: BTC and the 6000 companies supported by ESI. While this may not be a common occurrence, having different sets of customers with sometimes opposing goals and no explicit relationship between them is not sufficiently encompassed by the quality approach concept of stakeholders.

There is much emphasis on data at ESI, which demonstrates support for yet another core concept of the quality framework. Multiple sources of data (in the form of measures) can be found when looking to the DMOQ and MOVE measures, as well as to the call observing form and overall call quality reports. Data are also used to track processes, although in some cases, the outcome measures are not accurate or consistent. The "why customers call" report offers additional quantitative information regarding the activity of this center, and the "customer comments" reports offer a qualitative perspective, so that ESI might have a more comprehensive story regarding customer needs and expectations, which would allow them to assess and address gaps in performance.

CRITICAL THEORY

Starting with the first survey administration, the authors began to find evidence for employee acceptance of ESI's dominant ideology of customer satisfaction simply by their selection of customer satisfaction as their best measure for assessing quality.

Also during the first survey administration, employees were asked to evaluate their feelings of autonomy, variety, and perceived task importance (also referred to here as the job characteristics scale) using Hackman and Oldham's (1975; 1980) work design survey. On a scale of 1 to 7 (1 = not at all, 7 = very much), all three dimensions were rated well above the scale's midpoint of 4, with perceptions of task significance rated the highest (M = 5.85, SD = 1.02). Using the critical theory lens,

this might suggest that not only have employees accepted the dominant ideology of customer satisfaction, but they are also being subversively controlled to believe that their role toward achieving management's goals is significant. This, in turn, further assures employee commitment and loyalty to organizational goals. Additionally, the high assessment of autonomy can be construed as further evidence for subversive control. Employees are being socialized to believe that they have autonomy, control, and some say in what gets done at ESI. It is really the rhetoric of ESI, however, that creates an environment conducive to normative control.

Questions posed during the Time 2 survey administration attempted to assess, more directly, perceptions regarding the ability of measures to provide control over one's work. Individuals believe that both their own best measure and ESI's best gives them control. This could be interpreted as offering yet more evidence for the subversive forms of control that exist at ESI. In other words, employees have been socialized to believe that they have some element of control through their own best measure. However, since all of these measures are ultimately selected and generated by ESI, it is really ESI that maintains control. It is the dominant ideology that continues to govern employee behavior, even when that behavior comes in the form of certain acceptable responses to a survey question.

Statistical analysis following the third survey administration revealed a negative correlation between control and autonomy. In other words, as perceptions regarding ESI's best measure affording the individual control increased, feelings of autonomy decreased. From this, it can be suggested that on some level individuals do feel as though they lose power and autonomy.

One can also look more closely at some of the language used at ESI for additional evidence to support the critical framework. As the critical theory approach suggests, language can provide both unity and division. For ESI, unity is created through the use of common language: DMOQs, call observing, call quality, CSD software packages, and so on. Almost all of the tasks completed by the tier II teams make use of specialized language that either makes one an insider or an outsider. For example, it would be hard to know what inbound ports, conversions, or explodes are without being part of the ESI culture. This unity supports a dominant ideology that endorses customer satisfaction above all else. One can also see how the use of such specialized terms can limit the focus of discourse, making it difficult to express creativity and innovation. For example, the 29 items on the call observing form clearly dictate the actions of the CSR; there is little room for recognizing the full range of CSR responsibilities, and it does not allow for individual growth, development, and experimentation.

During the interviews, individuals were asked if they ever felt controlled by the measures used at ESI. Nearly all of the respondents said "no." On one hand, this indicates that the critical perspective provides incorrect propositions about the use of measures for employee control. Of course, the critical frame might also suggest that this is the response one would expect; it is often impossible to see these systems of domination and oppression when one is embedded in them. However, the more obvious, explicit, and resisted forms of organizational domination do not seem particularly salient in this organization.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDY

The goal of this study was to explore and analyze the perceptions of measures held by selected organizational members for two segments of ESI—Echo West and Echo East. Given the strong measurement focus of this unit, it also appeared to be a good choice for exploring measurement issues. But, as is often the case with organizational research, this study was faced with a number of limitations.

Most of the limitations can be grouped under the heading of methodological issues. These included limitations faced by using a case-study approach, inherent limitations in the type of data collected, problems regarding the use of appropriate terminology, and limited access for collecting additional data.

The fact that the sole focus of this case study was limited to the employees of ESI limits the generalizability of these findings to other organizations. As both

Table 11 Data sources and their benefits and limits for understanding perceptions of measures

Data source	Benefits	Limits
1. Survey research	• Useful for assessing current attitudes using Likert-types measures • Useful for capturing descriptive data regarding perceptions of "best" measures	• Lacks depth • Unable to provide insight into "how" measures come to hold meaning for organizational members
2. Individual interviews	• Useful for understanding "how" and "what" measures mean to organizational members • Useful for clarifying commonly used language (for example, measures vs. metrics) and acronyms	• Time consuming to collect
3. Process tracking	• Useful for understanding "how" and "what" measures mean to organizational members	• Time consuming to collect • Difficult to use as a cultural "outsider"
4. Focus groups	• Useful for adding	• Difficult to organize • Participants easily sidetracked • Potential for descending into gripe session
5. Review of archival materials (reports, survey instruments, outcome measures)	• Useful for seeing how measures are presented to organizational "outsiders" such as customers and other stakeholder groups	• Difficult to collect as archival materials are often considered proprietary • Sometimes difficult to interpret without help from an organizational "insider"

MacNealy (1997) and Eisenhardt (1989) note, however, case-study research can provide rich, descriptive insights into events and behaviors, and can lead to hypotheses for testing, and sometimes the development of new theories and explanatory frameworks. Further, as the next section emphasizes, the study provides a basis for assessing generalizable theoretical approaches to organizations' use of measures.

As noted, data sources for this research included three surveys, interviews, focus groups, process tracking, and archival materials. But, as Table 11 shows, each method has its own strengths and limits. The first survey and early interviews were also troubled by conflicting use of terminology across time periods and organizational units (such as the seven areas of the MBNQA or even the word "measure" as opposed to "metrics").

CONCLUSIONS

Overall, the perceptions of measures held by organizational members are favorable. These perceptions, however, appear to change based on one's position (managers have less confidence in the accuracy of measures than frontline employees do), and function (CSRs are more concerned with issues of call quality and customer satisfaction, whereas design personnel tend to be more concerned with issues relating to employee satisfaction and system functionality) within ESI. It appears that employees understand the necessity of having certain measures in place and, as such, don't always question their presence, but occasionally question their completeness for evaluating such complex concepts as customer service. There is also support for the business cliché and the familiar qualitative critique of quantitative data, "what gets measured is what gets done," since employees clearly spend more energy on those elements that they know will be measured, and on which ESI is contractually evaluated.

Even in this organizational site, committed to a measurement approach, both from the perspective of managerial philosophy as well as instituted in the account contract: 1) a variety of paradoxical uses and consequences of measures arose; 2) there were several "disconnects" or gaps between intentions and consequences of measures; 3) there was considerable variation in the extent to which measurement philosophies and procedures were explicitly presented, and commonly shared; and 4) there were limited efforts to obtain double-loop learning or process improvement about measurement activities themselves.

Most professional implementation of, as well as much research treatment of, measures tends to view them strictly for what they can offer to management and the organization's bottom-line. For example, much of the current work simply offers a listing of the measures organizations should be collecting and how these can be used to support strategic planning, quality improvement, and other management initiatives (Brancato 1997; Czarnecki 1999; Lingle 1997). But by asking how employees, the contracting organization, and the end customer organizations (individually and through interaction) make sense of, provide information for, and raise questions about measures, one can gain insight into how these measures are actually used by organizational members on a daily basis, and what kinds of consequences they might have.

Although multitheoretic approaches can sometimes face methodological dilemmas (Hassard 1991; Papa, Auwal, and Singhal 1995) and are sometimes constrained by the necessity for a greater investment of time, there is little organizational research that is *not* fraught with such problems and constraints—that is the nature of organizational life. Multitheoretic, multimethod organizational research is complex and often messy because organizational life is complex and often messy. But it is the resulting insights and richness of understanding that will make the investment worth it. The use of multiple measurement and theoretical lenses for understanding organizational phenomenon can often provide a richer, more comprehensive view of the organization (Alvesson 1996; Papa, Auwal, and Singhal 1995). The next step would be to engage in theory building in order to integrate (on some level) these frameworks and methods with the goal of developing a metaparadigmatic theory of measures.

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