A Review of Call Center Measurements

Stephen J. Willis and Michael Bendixen
Nova Southeastern University
Fort Lauderdale, FL
United States of America

Abstract

The purpose of this paper is to examine the key performance indicators, (KPI’s), that call centers or contact centers commonly use to measure performance. It is widely known that call centers typically measure everything and therefore are inundated with mountains of data that measure efficiency rather than performance. This study contrasts historical and current KPI’s and what commentary and research indicates exactly what should be the focus of a high performance call center. The conclusions reached in this paper strongly suggest that call center performance is IT based meaning that the availability and quality of the infrastructure prohibits the call center representatives from performing at a high level. A review of other literature also finds that KPI’s from a customer service representative point of view is far different than that of a call center manager or a higher level executive. This paper finds that there are far more metrics available to assess a call center performance than primarily efficiency type measures.

Background

Call centers have become an important link in an organization’s attempt to communicate with its customers. As call centers expanded their capacity to communicate using tools other than the telephone, (chat, e-mail, interactive voice response), they have now become known as Contact Centers. Growth in U.S. call centers are now estimated at 8% per year, (Gans, Koole, & Mandelbaum, 2003) and in western Europe as high as 15%. As the call centers become more and more prevalent, so do the measures of their success.

Durr (2001, p192) notes: “Managing a contact center is complicated because the call center is an invisible world. All that management sees are the agents. Unfortunately, when you inspect a call center visually, you cannot readily discern a poor center from an excellent one.) In this invisible world, key performance indicators (KPIs) are typically used to measure the effective use of resources. Miciak and Desmarais (2001) maintain that the majority of measures are
operational efficiency measures and have to do with telephone technology in use. This is compounded by typical workforce planning software systems which all tend to measure the same things. These metrics tend to be used because the system routinely produces them and not necessary because each and every one of them is specifically or universally useful. It is almost amusing what these systems can and cannot measure, for instance, average handle time is routinely measured by half hour yet the authors have yet to see a standard deviation for this metric reported. Adherences of employees to the standards of practice (occupancy rates, calls per hour, etc.) are also routinely measured (Gans et al., 2003).

In this world with a plethora of available measures, it is easy to fall into the trap of using as many of them as possible rather than using them selectively to manage performance.

### Current Measures

The common measures to be found in a call center (Anton, 1997; Cleveland & Mayben, 1997) are presented in Table 1.

#### Table 1: Common Call Center Metrics

<table>
<thead>
<tr>
<th>Measure</th>
<th>Typical Shortest Reporting Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calls offered</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Calls handled</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Abandonment rate (%)</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Calls blocked %</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Average handle time (AHT)</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Average speed to answer (ASA)</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Average queue length</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Service level (% of calls answered within a specified time)</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Occupancy (% of time CSRs of busy handling a call)</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>Adherence to schedule %</td>
<td>Half-hourly</td>
</tr>
<tr>
<td>First call resolution (FCR)</td>
<td>Monthly</td>
</tr>
<tr>
<td>Call quality</td>
<td>Monthly</td>
</tr>
<tr>
<td>Staff turnover %</td>
<td>Monthly</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

Marr and Parry (2004, p56) note that many call center metrics that appear on walls inside call centers include:

1. Number of calls answered within past ten minutes
2. Calls waiting to be answered, that is “in the queue.”
3. Number of agents currently taking calls.
4. Number of agents waiting to take calls (free agents).
5. Number of “not ready” agents.
6. Number of agents on outgoing calls or on a call to another agent.
It was also found that customer service representatives (CSRs) typically monitored these performance measures and experienced serious morale problems when the measures were not met.

The Influence of Technology

Perhaps the main reason that call centers are so intensely scrutinized is that there is a huge investment in technology and human capital. It is estimated from independent studies that 60% of call center operating costs are attributed to labor (Robinson & Morley, 2006). In a survey that focused on call center technology (Moreno, 2006), it was revealed that technology frequently interfered with the performance of the CSR. In most cases, the failure of the interactive voice response (IVR) system caused spikes in incoming calls and long queues. In addition, these technology failures also interfered with call durations as they resulted in slow “screen pops”, inaccurate caller information, and slow or unavailable applications. In effect, the measurements were not fairly evaluating their CSR’s. It is clear that in this age of sophisticated technology that any problems in call center systems will have an immediate impact on KPI measurements, call center productivity and customer quality of service. In the same survey, it was revealed that when there were technology related problems, either the customer or agent were the ones who reported the malfunction. It was interesting to note that only 10% of the respondents reported any quality assurance for their call center technology (Moreno, 2006). With some industries relying on interactive voice response for nearly 80% of their handled calls it would seem that with a huge investment in this kind of call center technology that a similar investment in quality assurance would be in order. Services need to be reliable as well as user-friendly (Bennington, Cummane, & Conn, 2000). Generally, customers expect the service to work each and every time and may become angry when there are technological problems. Thus, assessments of service quality will be greatly affected when delays occur. Parasuraman, Berry, and Zeithaml (1988) found that regardless of industry, reliability is the most important contributing factor to service quality.

Staff Turnover

In addition to the high costs of technology, staff turnover in some call centers is extremely high, with a 50% turnover rate not uncommon. In documented studies, staff turnover is usually within a range of 15 to 35% (Robinson & Morley, 2006). In a study of Fujitsu Services by Marr and Parry, (2004), turnover of front-line call center staff was found to be 42%.

Unlike other organizations, Fujitsu Services realized that they were failing their customer. Many of their contract services were barely meeting service obligations and 15% were at critical levels of dissatisfaction and were likely to seek other service providers (Marr & Perry, 2004). In this study, organizations were faced with the same high costs, quantitative measurements that seemed to measure performance of the call center and in most cases, unhappy customers. It would seem that what we make important are those things that we can measure (Feinburg, Kim, Hokama, de Ruyter & Keen, 2000).
Call Quality and Customer Satisfaction

In a study by Ventana Research, (Dawson, 2006), it was concluded that most call centers have not recognized that the best way to reduce cost is to identify why customers are calling and eliminate or reduce the need. “Only 23% of call centers have deployed any type of root-cause analysis that would enable the center to identify process changes, manufacturing improvements, marketing and sales messaging or better ways for the center to work in conjunction with other business units” (Dawson, 2006, p24). The results of this study also found that only 48% of the centers surveyed measure revenue generated. It would seem that most call centers, “seem to have fallen into the trap of believing that operational measures such as call duration, or average time to answer are indicators of customer satisfaction. The fact is that they are not; they are only measures of efficiency, which in turn is often seen as a determinant of financial performance. Most call centers seem to miss the important link between employee satisfaction, service quality, customer satisfaction, and profitability,” (Marr & Parry, 2004, 59).

What should we measure?

If the quantitative measures are failing to provide meaningful metrics as to the performance of the call center, then what should call centers measure? Robinson and Morley (2006) make a case for first call resolution. FCR is defined as the percentage of calls that do not require any further contacts to address the customer’s reason for calling. Ideally, first call resolution should be defined from the customer perspective. Their view is that a greater effort should be made to evaluate what will satisfy the customer needs. Attaining a target such as “80 per cent of calls being answered in 20 seconds” is a hollow result if the quality of the calls is below the customer’s expectations. Perhaps instead of “how fast” the call center manager should measure “how well” the contact was handled (Reynolds, 2006).

Levin (2007a) also supports FCR as by far having the biggest impact on customer satisfaction. According to research conducted by the consulting firm, Service Quality Measurement (SQM), customer satisfaction drops “an average 15% for every callback a customer must make to a contact center.” They SQM group also found that for every 1% improvement in FCR, you get a 1% improvement in customer satisfaction. In a study of more than 150 contact centers, SQM found that centers that achieved “world class” customer satisfaction ratings had an average FCR of 86%. They also found that centers not at the top in customer satisfaction achieved a FCR of only 67%. Levin (2007b) also notes that increased customer satisfaction results in lower operating costs, (lower repeat callers), reduced revenue risks, (risk of customer defecting to your competitors), and higher employee satisfaction. The premise here is that fielding repeat calls from frustrated customers strains the agent and invariably leads to low morale, poor customer service and high CSR turnover.
As in most studies about call centers, the focus continues to be on the quantitative statistics rather than qualitative measures such as customer satisfaction which is often reduced to a quantitative measure. From a call center manager's viewpoint, it is easy to measure when all of the software does it for you. You become a slave to the statistics without having accomplished the mission of customer support. Feinberg et al., (2000) empirically tested the 13 critical operational determinants of call center excellence, (found in most call center handbooks), by using data from 514 call centers. Their data shows that “only two of the 13 determinants, namely ‘percentage of calls closed in first contact’ and ‘average abandonment’ have any significant statistical influence on caller satisfaction” (Feinberg et al., 2000, p131) This would also seem to support the premise that first call resolution is of higher importance to the success of the call center, if not the organization. However, the reported $R^2$ for this study was only 0.05, i.e. these two variables only accounted for 5% of the variance in caller satisfaction.

Fleischer (2007) relates that in addition to fulfilling the customer’s need, organizations should also measure whether the call generated or retains revenue. In many instances, CSR’s have a unique opportunity to make an additional sale or to create a climate in which the customer will agree to a call back to discuss additional services. This would improve our measurement from simply handling a call in a certain number of seconds to measuring the value of the call. In this scenario, time would not be the key measurement.

Heinen (2006) relates that high performing call centers typically change the measures of success by letting agents talk as long as necessary to callers that are targeted for retention or additional services and they focus their measurement on retention or selling rate. For these call centers, a short call may not be a goal in itself, especially if the caller hangs up irritated or unsatisfied. In other words, there is no reason to limit talk times to five minutes if this has no impact on customer behavior, or does little to advance the strategic goals of the organization. Heinen’s (2006) main conclusion is that the call center should switch from arbitrary efficiency metrics to maximizing the value of the interaction. He further reveals that organizations that have shifted their metrics have seen great success and for example relates that one organization shifted from measuring handling time to measuring the customer’s willingness to accept a call back.

Reynolds (2006) suggests that a “conversion rate” be adopted as a key metric. “This refers to the percentage of transactions in which a sales opportunity is translated into an actual sale. It can be measured as an absolute number of sales or as a percentage of calls that result in a sale” (Reynolds, 2006, 71). She maintains that value-added measurements further strengthen the call center position as a cost center rather than a phone center. Bailor (2006) suggests that instead of concentrating on call statistics, speak the language of senior management—the call center’s impact on generating revenue. Instead of measurements such as average time per call, increases in revenue that could be measured by average sales per call or average sales per agent would increase the call center’s value and importance in an organization. This monetary focus is
indeed interesting but entirely focused on the needs of the organization rather than the needs of the customer, which is contrary to the basic principles of modern service design (Chase, Jacobs & Aquilano, 2006; Stevenson, 2007). For instance, retail bankers may measure success in terms of the number of products used by a particular customer and richly reward cross-selling in the call center. In sharp contrast, the customer is likely to assess the bank in terms of the extent to which it satisfies his needs.

In a study by Robinson and Morley (2006) in which they surveyed call center managers and CSR’s, the managers typically chose KPI’s that measured efficiency and the CSR’s customer service. Although the companies in the study had measures in place for customer service, invariably management chose to enforce the efficiency measurements as most important.

Performance Measures for Different Management Levels
Consider a typical contact center operation structured as illustrated in Figure 1. The back office operation would have its own performance metrics which are typified by the nature of the business and beyond the scope of this paper. The workforce planning team would work with all of the call center performance metrics and have a deep understanding of the relationship between them. However, this team’s performance should be assessed on the accuracy of the forecasts and the optimality of the schedules that they generate. Forecasting accuracy is dependent on the skills of the team but severely constrained by the inherent variability of the data. The optimality of the schedule should be judged

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**Figure 1: Contact Center Structure**

![Contact Center Structure Diagram](image-url)
by the service level achieved by the call center and the acceptability of the schedule to call center operational staff.

The quality and compliance team will be mainly concerned with measures of compliance (both regulatory and in terms of company policy and procedure), quality, FCR and the analysis of the reasons for calls. To some extent the relationship between these and AHT needs to be understood. Ultimately, their performance should be assessed on cost savings generated by identifying and reducing incoming calls and the value of the training initiatives for the call center operational staff that they have identified.

The learning and development team will work with quality and compliance measures, FCR, adherence to schedule and AHT measures. Their performance should be assessed in terms of improvements in these measures achieved as a result of the training programs that they have implemented. This needs to be assessed at the individual trainee level and not for the call center as a whole so as to isolate their sphere of influence.

In order to determine appropriate measures for the call center operational staff, it is necessary to apply the principles of the leadership pipeline (Charan, Drotter & Noel, 2001). CSRs essentially manage themselves and thus are responsible for their performance in terms of measures of compliance and quality, FCR, adherence to schedule and AHT. This latter measure needs to be dealt with cautiously as, according to modern service design theory, the customer should control the contact process (Chase et al, 2006; Stevenson, 2007). Thus AHT is not fully in the control of the CSR. Other performance measures have little, if any, relevance to CSRs.

Team leaders are managers of others (viz CSRs). According Charan et al. (2001), the transition from managing self to managing others is one of the most difficult in the leadership pipeline. This function is often the Achilles heel of call centers as it is not unusual for better CSRs to be promoted to team leaders. Managing one’s own adherence to schedule or first call resolution is a very different matter to managing those of others. Team leaders will be concerned with adherence to schedule, compliance and quality measures, FCR and AHT for their team. While it is useful to measure the performance of a team in terms of these metrics, the real effectiveness of a team leader should be assessed by levels of motivation of the CSRs within the team. It is all too easy for a team leader, with some help from the call center manager to turn the call center into an “electronic panopticon”.

The call center manager is a manager of managers and ultimately responsible for the performance of the call center. Like the workforce planning team, the call center manager will work with all of the performance metrics and understand the relationship between them. However, his performance should be judged by what is achieved within the constraints of the resources available to him. As such, overall measures of quality and compliance, FCR, adherence to schedule, service level achieved and staff turnover should be the basis of his KPIs.

In terms of the Charan et al. (2001), the contact center executive is a functional manager in the leadership pipeline. Customer satisfaction is critical to
the success of this role, as are the performance metrics that reflect it such as
FCR and abandonment rate. This executive is also responsible for securing
adequate resources for the call center, particularly human resources. As such,
staff turnover and motivation levels are also an important reflection of
effectiveness of this executive. The executive may use all of the call center
performance metrics to some extent to facilitate decision making.

Conclusions
The suggested use of performance metrics and which should form part of
the KPIs of various role players in the contact center are summarized in Table 2.

Table 2: Performance Metrics and KPIs by Role

<table>
<thead>
<tr>
<th>Role</th>
<th>Performance Metrics Used</th>
<th>Basis of KPIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce Planning Manager</td>
<td>All</td>
<td>Forecast accuracy Optimality of schedule</td>
</tr>
<tr>
<td>Quality and Compliance Manager</td>
<td>Quality &amp; compliance measures, FCR, reasons</td>
<td>Cost savings from reduction in calls</td>
</tr>
<tr>
<td></td>
<td>for calls, AHT</td>
<td>Value of training initiatives</td>
</tr>
<tr>
<td>Training and Development Manager</td>
<td>Quality and compliance measures. FCR,</td>
<td>Improvements in these measures for those trained</td>
</tr>
<tr>
<td></td>
<td>adherence to schedule, AHT</td>
<td></td>
</tr>
<tr>
<td>CSR</td>
<td>Quality and compliance measures, FCR,</td>
<td>These measure at a personal level</td>
</tr>
<tr>
<td></td>
<td>Adherence to schedule, AHT</td>
<td></td>
</tr>
<tr>
<td>Team Leader</td>
<td>Quality and compliance measures, FCR,</td>
<td>These measures at a team level</td>
</tr>
<tr>
<td></td>
<td>Adherence to schedule, AHT</td>
<td>Motivation of CSRs</td>
</tr>
<tr>
<td>Call Center Manager</td>
<td>All</td>
<td>Overall quality and compliance measures, FCR,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>service level achieved, staff turnover</td>
</tr>
<tr>
<td>Contact Center Executive</td>
<td>All</td>
<td>Customer satisfaction, FCR, Abandonment rate,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff turnover, staff motivation</td>
</tr>
</tbody>
</table>

This paper devotes a great deal of time illustrating the things not to measure.
From the literature that was reviewed, it appears that customer satisfaction would
'be the critical KPI for any call center. The FCR appears to capture this measurement better than any other. The problem here is that how do you measure customer satisfaction?

Many companies have IVR’s and often underutilize them. By using the very technology that often results in lower customer satisfaction, many companies can now use the IVR to measure it. Instead of using the IVR in the traditional way by greeting, routing, and self-service, many companies are using it to evaluate customer service and ultimately elevate customer satisfaction. Rather than send surveys through the mail or attempt a live phone call, the IVR simply can invite the customer either while in queue or at the end of a call to participate in a brief survey (Levin, 2007b). In this way the information that is gathered has a truly customer slant and is not reliant upon CSR translation. Many of the IVR systems have speech recognition features that enable the customer to respond to open-ended questions as well as responding to yes, no and Likert scale like measurements from 1-5. The value of this information is that it is timely, valid, and actionable. Although the IVR is a great tool for this kind of survey it is also important to know the preferred method of survey for your customers whether it is through the IVR, e-mail, or automated calling. In a research report published by Gartner in May 2005, Esteban Kolsky, research director for the industry analyst firm based in Stamford, Connecticut, comments: "Moving away from traditional, stand-alone implementations toward the consolidated, enterprise wide use of feedback can add strategic value and reduce costs" (Kolsky, 2005, p2). By measuring and integrating customer feedback into operational processes in real time, contact centers will remain agile, ensure high customer retention and help improve company profitability. In addition to monitoring customer satisfaction, additions to revenues should be addressed. Having a CSR resolve a call in twenty seconds without recognizing the opportunity for an additional sale or repeat business would be counter productive. Depending upon the level of management, strategic consequences should be measured in addition to any types of efficiency measurements. Strategically, repeat sales, retention of customers, and overall satisfaction of the customer should be known and monitored closely. Future research should address the customer’s perspective in relation to meeting efficiency metrics.

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