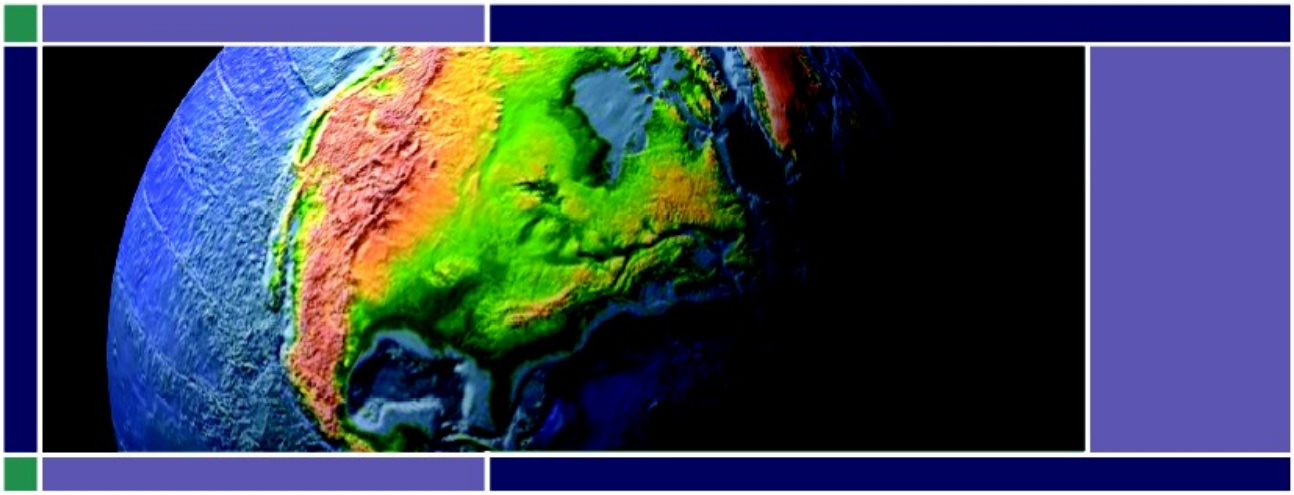

Best Practices in Workforce Management and Workforce Optimization

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EXECUTIVE SUMMARY

Purpose of This Study

The purpose of this study is to document current best practices in the call center industry, specifically focusing on the diverse workforce management/optimization teams within the customer service organization.

There is a subtle but significant change taking place within workforce management.

Although increasingly complex, workforce management is evolving to a system which includes, but is not limited to, the use of traditional WFM software solutions. The new workforce management goes far beyond systematic generation of forecasts and schedules. In short, it is the change from "managing" the associate's time, to optimizing the operations of the center. The new workforce management is comprised of three basic functions:

1. The new workforce management supports the center environment, planning for and supporting attention to quality.

   Providing scheduling for training, coaching and an effective quality assurance program.

2. Secondly, best practices in workforce management provide empowered associates more flexibility and control of their own work schedules.

3. Finally, the new workforce management combines the WFM discipline with the added layer of analytics, which deliver actionable data to the center management for continuous improvement.

We believe the successful operation of the 21st century call center's workforce management is the underpinning of the organization's ability to deliver an exceptional customer experience while providing an environment that supports empowered call center customer service representatives (CSRs).

As the customer care industry continues to mature, the industry is evolving from its initial focus on workforce management to a much more sophisticated concentration on workforce management and performance optimization.

Methodology To Determine Best Practices Among World-Class Call Centers

The BenchmarkPortal team, led by Dr. Jon Anton and Dayne Petersen, reviewed a wide range of studies to identify best forecasting and scheduling methodologies.

The following steps were used to determine best practices in workforce management:

- Develop a survey instrument to collect forecasting and scheduling practices information using consistent criteria (see Appendix B).
- Identify world-class companies based on their benchmark statistics, reputation for excellent service, and recognition as a great place to work.
- Conduct site visits to observe the forecasting and scheduling processes, measure their effectiveness and ascertain which attributes contributed most towards overall excellence.
- Conduct telephone interviews to explore the details of the forecasting and scheduling processes employed.
- Process the data and produce aggregate statistics.
- Document unique best practices.

Summary of Research Findings

After completing these surveys, telephone interviews and site visits, the need for a "best practice" discussion and forum was clearly evident.

The predominant finding of the research is that each workforce team has taken the tools available to them and molded the tools to meet their needs. There are many common challenges, with as many solutions as there are users. While the solutions are highly varied, all of the top performing call centers focus on flexible employee scheduling and employee satisfaction.

A major issue affecting adoption of the new focus in workforce management is changing the mind set from a fixed schedule practice to one that institutes some form of flexible scheduling. This continues to be a battle of perception versus reality. It is assumed, and in many cases fact, that Human Resources won't approve and/or the CSRs will not accept flexible schedules. However, the call centers which are currently having the greatest success with flexible schedules initially offered flexible schedules as one of many scheduling options presented to the staff. For example, one center needed to adjust schedules. They posted some options for the existing team. All but one of the "new" schedules were taken by existing employees. One center found that 90% of the flexible shifts were selected when initially offered.

That said, there are many common factors which we will describe below:

Forecasting

- Despite the inherent errors, Microsoft Excel® spreadsheets are still in use in the majority of call centers. Especially those with fewer than 500 agents.
- Even in the most advanced and sophisticated call center operations the process is excruciatingly manual. Information is manually collected from various departments within the enterprise in order to refine the forecast.

- A majority of call centers use historical data to determine the call distribution pattern, weighting most heavily the past four to seven weeks. Of course, annual seasonal fluctuations are accounted for by reviewing month-to-month past volumes.
- In workforce teams which consisted of multiple staff members, the person(s) responsible for forecasting was also heavily involved with budgeting.
- The depth of the forecast analysis is highly sophisticated. One center is forecasting and trending at the day of week interval level using an interval deviation to develop trends.

Schedules

- The greatest success with flexible scheduling is in the call centers that partner with the Human Resources department to screen appropriately and set clear expectations with employees.
- The vast majority of call centers are continuing to use full-time regular employees. The stated reason was the difficulty in training part-time employees because extensive new-hire training requirements average four to six weeks.
- Technology is helping push the envelope. One of the sites is using nearly one hundred patterns in the schedule development.
- Variable schedules are catching on. We interviewed CSRs who were pleased with schedules, which had variations in start times as great as two hours. Another CSR worked a 5-day schedule consisting of 12/10/8/4/4 hour shifts and is more satisfied than ever with her schedule. *This same center has a waiting list of candidates for the entry-level position – positions which have schedules with the highest variability.*

Introduction to Best Practice Research

This section addresses the "hows" and the "whys" of workforce management best practice research.

The Need for Best Practices in Workforce Management

We have compiled a list of primary drivers that create the need to define best practices in workforce management.

- Need to make the most effective and efficient use of CSRs by optimizing call forecasting, staff acquisition, organizational planning and team development.
- Continuous downward pressure in center budgets demands control of operating costs.
- The breadth of work offered to CSRs, the manner of its delivery, CSR and customer expectations have all contributed to the challenge of managing the increasingly complex schedules in a call center.
- In order for scheduling to be optimized, CSRs and customers, management needs to remove the misconceptions about workforce management that abound.
- Empowerment of CSRs is key to motivation and retention of talented staff. CSRs need to feel ownership in their schedules by empowering them with tools that allow them to request schedules and adjust existing schedules that meet their increasingly demanding work and personal schedules.

The Methodology for Determining Best Practices in Workforce Management

Dr. Jon Anton and his team members play an important role for the industry by conducting field research on process best practices. Dr. Anton's team conducts best practice research in all of the following processes that support call center operations:

- Pre-hire aptitude and attitude screening
- Initial and on-going training
- Call forecasting and workforce management
- Call quality monitoring and CSR coaching
- Supervisor training
- Call center management training
- Key performance indicators
- Caller satisfaction measurement
- CSR satisfaction measurement
- Customer experience management
- Customer self-service

Dr. Anton's team, hereinafter referred to as the "Team," defines best practices as follows:

"Best practices are those planned process delivery steps that have proven to achieve the highest effectiveness and efficiency for a given process. Best practices include the strategy and operational implementation of articulated steps to deliver the defined end-goal of a given process."

The Team discovered best practices by visiting companies that are known to be world-class and documenting those steps in their process implementation that have a substantial impact on achieving and exceeding process end-goals. These companies all had some form of recognition of their performance status.

The concept of "benchmarking to find best practices" is simply described by the following statement: "All of us are smarter than any one of us." What this means is that there is seldom one company that is better than all others. More typically, each world-class company is doing one or more steps really well, but is unaware of the creativity of others. Our research finds the "best of the best" call centers, and makes their knowledge available to all. This document is such a report of the best practices in workforce management.

PURPOSE OF WORKFORCE MANAGEMENT

Workforce management plays a different purpose depending on various perspectives. It plays a key role in the overall performance of any call center, including increasing efficiencies and reducing costs.

According to a recent *Gartner Marketscope: Workforce Management Software for the Call Center*, workforce management (hereinafter referred to as "WFM") should be reviewed for any center with greater than 50 CSRs.

"Call center outsourcers, financial services, travel, hospitality, telecommunication providers, retailers and e-commerce companies are some of the most frequent users of call center WFM software. It is not uncommon for enterprises using WFM systems to report that they achieved the following:

- Reduced the time it takes to create CSR schedules by 45 to 90 percent
- Increased service levels by 10 to 13 percent
- Decreased payroll costs by 10 to 13 percent
- Decreased call abandon rates to 3 percent.

Overall call abandonment rates consistently average around 7 percent; however, the best-performing 25 percent of desks average only 3 percent abandonment, according to Gartner."

Executive Perspective: Support and Enable the Quality Customer Experience and Engaged CSR Culture

The executive's perspective is to create an optimal operating environment while delivering exceptional service to the company's customers. Here are some of the factors related to workforce management that are critical to executives:

- Balancing cost, service and quality
- Improving the consistency of operational results
- Providing resource planning that allows the operation to meet the customer call requirements
- Effective long term planning and budgeting
- Allocation of time for quality assurance, training, coaching and meetings

Operational Management Perspective: Ensuring the Right People in the Right Place and the Right Time…the Right Way

The management responsible for the daily operation view the purpose of workforce management as providing a valuable tool to help them manage the day-to-day operation. Here are their critical factors:

- Creating schedules that optimizes the best mix of shifts or schedules that comes as close to the optimal business requirements model as possible.
- Provide a variety and mix of schedules to meet CSR work and life balance.
- Allocating time for quality assurance, training, coaching and meetings.
- Supporting the full-time and part-time CSR mix.
- Reducing chaos in the call center.
- Balancing the workload!

CSR Perspective: Providing Some Discipline to the Way Schedules are Managed. Allowing for Performance Review and Development

To the individual CSR, a WFM system can be viewed as either another element of a "big brother" system, or as another tool, such as a recording system, to help gauge their personal effectiveness—especially on the efficiency-related metrics. Their perspective is tied to how WFM is introduced and how it's used in the center. The best approach is when they are involved in the design and processes.

Best in class examples have demonstrated the importance of CSRs understanding the business requirements and how the scheduling tools are used to ensure that the center's goals and objectives are being met. The CSR should be provided real-time or near real-time information on their personal performance utilizing some form of a "score card" or "dashboard" which provides them with both their individual goals and their actual performance. They should also have access to team "score card," in order to compare their achievement to the team.

Summary of Best Practice Perspective on Overall Purpose of WFM

Having observed companies with outstanding results in customer and employee satisfaction, it is obvious, that WFM is no longer about simply "*managing schedules."* The processes and activities have moved to a new level, and the discussion revolves around forecast accuracy and optimal schedules which meet BOTH the business needs and the CSR needs in balancing their work and personal life. It's about balancing employees' work-life balance.

SUMMARY OF IMPACT FACTORS

In a snapshot, the items discussed in this section are the operational characteristics found in the best practices of the companies researched. These operational characteristics are necessary to support and enhance successful WFM optimization.

Culture

- An environment that encourages innovation and the "out of box" thinking required for the new 21st Century call center operations.
- A workplace that values all viewpoints.
- Recognition of the call center CSRs' unique role as the entry point into the organization.
- Decision-making driven to the most appropriate level.
- Technological acumen and willingness to experiment with a variety of potential solutions.
- A belief that the new focus of WFM should provide a customer and employee centric view.

Coaching and Learning

- Support for the change from single skill dedicated call center CSRs to shared CSRs, to the optimized workforces using multi-skilled environments.
- Focus is on removing the bottleneck of leadership deciding time off and flex schedules.
- The WFM system practices balanced scheduling, which removes the perception of management as the bad guy or playing favoritism.

Clear Definition of Success

- Success factors are understood by all. Everyone from the front line CSRs to the executive staff in the center knows what success with WFM looks like.
- There is a clear role definition for CSRs in WFM success.
- Effective measure of customer impact (top box customer satisfaction scores).
- Effective measure of the impact on CSRs job satisfaction (again, top box satisfaction scores).
- Recognition and reward systems to acknowledge success, both at the individual and team level.

- CSRs are given specific reward and recognition programs that focus on schedule adherence and rewards actions that contribute to schedule adherence.

Support with Tools, Technology, Appropriate Processes and Reporting

- Business rules and optimized schedules allow CSRs to bid and trade from home or office their own schedules with no management intervention.
- Line supervisors or managers can override and/or modify the system decisions as needed.
- All involved employees have direct access to the appropriate levels of forecasted and current schedules in order for the CSRs to be proactive in updating their schedule flexibility and requirements.
- Reporting presents real time "state of the center" and "my performance" information to all who require this information.

Adequate Resources

- They hire right. They look for people who want to have flexibility in their scheduling, are willing to leave work early when volumes are low, and agree to have their scheduled start/stop times modified by a variable amount in order to allow the tools to optimize (maximum calls handled by minimum CSR staff) based on business rules. Some very successful operations varied start/stop times by up to two hours within the week's schedule.
- They instinctively know that there will be a need for additional resources to maintain a trained, quality team of CSRs.
- They plan based on shrinkage, attrition and organizational requirements, the need to staff to peak, and manage down using unpaid time off (also known as BNTO – Business Needs Time Off; or LWOP – Leave WithOut Pay; or PTO – Personal Time Off).
- They have dedicated WFM Optimization team with the skills (both analytical and operational) to fully use all the features of the WFM software.

Education and Communication

- Effective communication with Human Resources. Expectations are set with new employees at point of hire. During the recruiting and hiring process, candidates are made to understand the concept of flexible schedules.
- WFM optimization team is part of all new hire training.
- All line management is trained on the concepts of WFM optimization.

Focus on CSR Satisfaction

- The entire enterprise is focused on supporting the "front line" CSR.
- Flexibility is offered to the front line to meet their work needs and their personal life needs.
- CSRs monitor their own performance and seek assistance or coaching on their own, rather than waiting, feeling powerless, to find out if they have met their goals.
- CSR satisfaction is measured, reported and acted upon quickly.

Establish Effective Communication System

Effective communication should have the following characteristics:

- Communication that is timely
- Providing enough time to react and adjust
- Multiple media types used as required
- Communication is two-way
- Communication is clear and concise

Corporate Culture: Impact on Workforce Management Optimization

The Importance of Culture

Most organizations have developed unique cultures. Each culture is reflected in their shared values, norms, beliefs and expectations, in their policies and procedures, and in their view of authority relationships.

We found that the call centers that deployed workforce optimization rather than simply the "management of schedules" (a.k.a., traditional WFM), are part of a larger company culture that recognizes the role of the front line CSR as critical to delivering the "exceptional" service experience required to differentiate products. The benefits these organizations reap from adopting the new focus of workforce management extend far beyond efficient schedules, and directly impact their bottom line profits and earnings per share.

On the other hand, the companies that still focus on a more hierarchical command and control culture are continuing with original WFM. In this type of culture, there are still great efficiencies to be gained with the WFM optimization tools. However, the opportunity for greater employee satisfaction is often missed along with the related benefits to the customer and ultimately, the bottom line.

The Importance of Change Management

When a WFM system is initially introduced, there is typically some resistance because it brings change.

The most critical aspect of managing this change is education. Before the changes of the CSR scheduling process are made, education and communication are critical. First, CSRs and the entire management team should understand why change was needed and what the benefits are for both the company and the CSRs.

One of the single most effective tools in the education of the call center team is to understand and see graphically what happens to the average speed of answer (ASA) when any number of CSRs are absent or unavailable when scheduled to be available and to understand the effect on customer satisfaction and efficiencies which can result in higher costs.

Recommended Corporate Culture Best Practices

Mission statements provide the focus for strategic planning goals and objectives, and help shape the values and the culture of the organization. Mission statements of world-class

organizations typically express the goal of providing the best customer service in the business.

A mission statement example from a world-class organization delivering superior customer service:

> "To be the undisputed leader in world travel. We are passionately committed to excellence and to the highest levels of customer service."

The role of WFM is to support the mission of the organization. The best centers understood the impact they had to the overall success. They considered their contribution by having personalized mission-statements, such as:

- Developing and retaining a highly skilled and motivated team
- Optimally providing the needed skills to service our customers with a consistently excellent level of service

Although it may sound trite, the workforce team is a daily display of "commitment to continuous improvement." It is their role to continuously improve the call center performance from one period to the next.

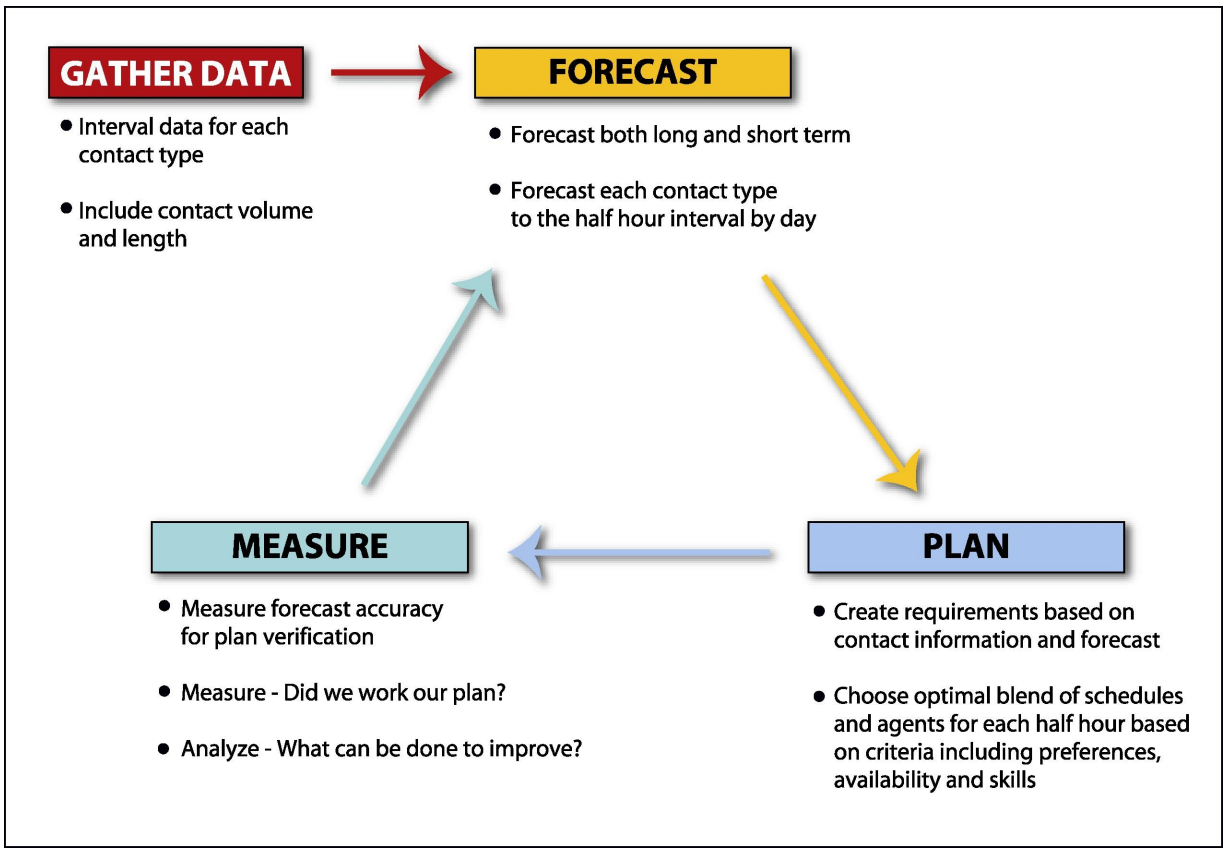
We will continue to repeat an underpinning in the world-class companies that we visited. In these organizations, all managers treat their front-line CSRs just like their customers —with courtesy, respect and responsiveness.

Workforce Management Cycle and Components

The best practices in the workforce management cycle is described within each component in this section.

WFM optimization is made up of four key steps when viewed in general. The four steps do not always occur sequentially as some are ongoing processes that span the life of the workforce cycle, while others take place at different key junctures in the workforce cycle. The four step process is comprised of:

1. Data collection
2. Forecast generation
3. Plan generation (requirements and schedules)
4. Measure results and analyze how to improve



Data Collection

No matter what the final method used to forecast and schedule a call center, data collection is a fundamental process that cannot be overlooked. Even in organizations where schedules are fixed, routine monitoring of CSR and overall center performance represents a basic data gathering routine. In the truly optimized organizations, data collection is the virtual backbone to operating the call center, in both a real-time and predictive fashion.

Most WFM software packages are tightly integrated with call management systems to eliminate the need for manual intervention in the data collection process. This also allows for the collection of more types of data including critical call volume data, such as arrival pattern data (calls by interval and by day), as well as CSR behavior and performance data. Also, data regarding average handle time (AHT) by interval allows for forecasting to account for subtleties such as variances in CSR proficiency by time of day and day of week. WFM optimization allows for mitigating under and overstaffing based on the use of averages across all times of the schedule.

Data collection is an ongoing process that, although automated, is augmented with manual manipulation and alteration by the central workforce team. The need for this intervention is driven by non-recurring events that shape call arrival during isolated periods of time. As an example of such an event, if a VRU malfunctions for 2 days and allows all callers to enter the queues, an artificial increase in calls during that period can influence forecasts inaccurately for the period of the forecast algorithm even though the event was isolated and would not predictably occur again. Only via functions that manually normalize the data will forecasts remain accurate.

Forecast Generation

The Forecast Algorithm

Forecasts are the result of the customer call data from recent history being run through a forecasting algorithm. The forecasting algorithm is a mathematical formula that translates historical call data, seasonal influences, and manual adjustments into a prediction of total future calls, call arrival patterns by interval, as well as AHT by interval.

WFM optimization departments from best practice companies have used logic, knowledge of their industry and constant analysis and experimentation to arrive at an algorithm that consistently generates accurate forecasts. Many factors go in to how the forecasting algorithm is formulated. In a quick overview, the common variables that best practice WFM departments account for include:

- How many weeks of data should be run through the algorithm to include in the forecast?

- How much "weight" should be given to each week in the forecast – the order of emphasis will depend on your industry, your call flow design and on experimentation.
- Seasonality – most call centers have variable call volume based on the time of the year due to drivers in their industry and consumer base.
- Company controlled call drivers – mailings, e-mail blasts or other marketing efforts scheduled to take place will have potentially huge affects on call volume. Best practice organizations track response rates to market stimuli in order to accurately predict future behaviors.
- Current abandon rates – as fewer calls are handled, logically, more future calls are required and anticipated.

Also, each company had other variables unique to their call centers that they tracked and were mathematically included in each forecast they ran. Also, most companies concurrently tracked forecasts generated by multiple permutations of their algorithm and tracked the resulting forecast accuracy of each side-by-side before deciding the make-up of the current algorithm. One company runs multiple forecasts routinely that are based on differing algorithms to continuously monitor the need for updated or new calculations.

Upon generation of the forecast, the resulting data predicts the number of calls by interval and by day, the length of calls over the same periods, and also required staff to handle the calls.

The requirements calculation contains a critical variable that carries a profound impact on the scheduling outcome. The combination of shrinkage or scheduling overhead with the predicted calls and call length gives the truest possible picture.

Plan Generation – Requirements and Schedules

After determining scheduling requirements, the next step is generating the schedules. If forecasting and requirements calculations were performed in an application outside of the WFM software, as many of the companies in this study do, this data must first be imported before schedules can be generated.

Best in class-WFM software will process the requirements data along with any scheduling constraints necessary to complete the scheduling process. These constraints may include elements such as CSR availability, and CSR preferences. The companies participating in this study normally generate schedules at least one week in advance. The companies that use schedule bidding generate their schedules far less frequently. This is done for CSR consideration, rather than for scheduling efficiency. However, no matter how often scheduling is performed, intra-day elements such as breaks, lunches, meetings, and training can be updated at any time based on real-time variations in business conditions. Unforeseen surges in calls or a high number of CSR absences foster the need for such real-time flexibility.

Centralized versus De-Centralized Scheduling

Companies participating in this study varied in the selection of which group actually generates the schedules. Although these companies all maintained central WFM teams to perform the tasks of data collection, forecast generation, and requirements calculation, they varied as to the methodology by which the schedules were created. Some companies used a distributed schedule generation process whereby call center team members at their various sites produced individual CSR schedules while other companies chose to keep the responsibility for schedule generation within their centralized WFM team.

Because each option carries with it both strengths and weaknesses, there is no "right way" to create schedules. The distributed method offers the flexibility for on-site management to continuously update and change schedules intra-day. The centralized scheduling method allows for dedicated individuals to use their expertise to foresee the WFM impacts of all scheduling decisions, but does carry with it the open access for easy CSR communication.

Analysis – Measuring Performance and the Plan

The last step in the WFM optimization process is the analysis of the overall performance – not simply the performance of the call center and its CSRs, but also the performance of the WFM team, the forecast they generated, the requirements they calculated, and the efficiency of the completed schedules.

Key metrics in the analysis of the CSR performance include schedule adherence, which indicates how closely the CSRs followed the plan, and schedule. Another important metric is conformance or compliance which measures the amount of total scheduled activity completed, regardless of when it was completed.

Metrics used to analyze the performance of the plan vary greatly from company to company. Generally, the metrics include these key performance indicators:

- Forecast accuracy percentage
- Schedule efficiency
- Full time equivalent (FTE) variance from forecast

Regardless of whether the schedules are produced weekly, monthly, quarterly, or even yearly, the analysis of the plan and the collection of data are continuous throughout the WFM optimization process.

Recommended Best Practices

Follow the above processes, and you will begin best practice in workforce management.

FORECASTING AND SCHEDULING ALTERNATIVES

This section describes the various scheduling tools available in the marketplace. They vary from simple tools with low start-up cost to a significant investment of time and capital for the more automated, flexible workforce management tools.

When starting up or re-designing a call center you must first define the goal/objective in scheduling. Much of this depends on the mission, size, and geographical structure of the call center organization. Once you have planned the objective you are ready to invest in the right technology that meets your call centers needs the first time.

Many organizations have invested in expensive tools only to have not used them properly and have been disappointed in the outcomes. This is typically a result of faulty planning, unrealistic expectations or implementation problems, or a product that does not match the business requirement.

Excel Spreadsheets

The most common form of staffing estimation and schedule generation is performed with a Microsoft Excel spreadsheet. The reasons for this are many. Excel has become ubiquitous in businesses and users are comfortable with extending the use of Excel to add formulas, macros and even Erlang calculators.

While there are many drawbacks to this methodology, the greatest are:

- Excel for scheduling is often very labor intensive and it can be very in-exact.
- This simplified scheduling methodology lacks any skills-based capability and calculation.
- There is a complete inability to track schedule adherence.
- No ability to account for random call arrival patterns.
- One small error in a formula or macro calculation can be an error that carries forward indefinitely. Who is validating and verifying the inputs?

Users of Excel for forecasting should be calculating seasonality and/or keeping weekly data for year over year trending. ACDs typically store only 13 months of data. There may be significant benefit at some future time to have weekly statistics (including call length) in an Excel worksheet.

Best Practices for Simple Excel Based Scheduling

The following steps should be taken when using Excel to calculate staffing requirements and to generate schedules:

1. Gather call data. This data can be gathered at a monthly, weekly, daily, or preferably at the interval level (typically 15 or 30 minute intervals). Validate and verify data.

2. Forecast future call arrival patterns. These forecasts can only be done at the level the data was gathered (i.e., if data was gathered at a weekly level, forecasts can only predict weekly call arrival). There are data points available at the network level that can provide at least hourly call distribution. You will have to contact your network vendor to access this data.

3. Estimate required staffing and schedules based on these basic call patterns (e.g., heaviest on Mondays if calls normally peak at the beginning of the week).

4. Be certain to note "special condition," i.e., a special promotion, weather, national crisis, business event, and more.

It should be noted that this method is time-intensive and does not account for frequently changing call patterns. Due to the time necessary to change a large number of schedules, call centers using Excel for scheduling often rely on fixed schedules against an ever-changing call arrival pattern. One typical outcome of this method of scheduling is a center that often misses its key performance indicators (KPIs) goals. In order to avoid this, centers tend to be overstaffed to compensate for the inefficient allocation of a fixed human resource supply against a variable call demand pattern and as a result incur higher operating costs.

Excel spreadsheets for scheduling typically are not effective past 35 to 50 CSRs depending upon the complexity of the center operations.

Benefits

- Inexpensive tool to use
- Most computer users have experience in setting up and using formulas
- Easy maintenance

Drawbacks

- Does not allow for random call arrival
- Does not apply skill based capabilities
- Adherence is not tracked
- Multimedia is not traceable
- No ability to provide flexible schedules
- Higher operating costs

Excel with Erlang

Erlang formulas calculate staffing requirements while accounting for random call arrival. These inexpensive formulas can be purchased as an add-on to Excel.

Scheduling with Erlang and Excel accounts for random call arrival so they more accurately estimate staffing requirements. However, because the forecasting and scheduling methods remain unchanged, this method still is labor-intensive, cannot track CSR adherence to schedule, and does not account for the efficiencies gained through skills-based call routing

Benefits

- Inexpensive tool
- Most computer users have experience in setting up and using formulas
- Formulas are easily changed
- Allows for impacts to be displayed based on volumes entered

Drawbacks

- Does not apply skill based capabilities
- Adherence is not tracked
- Multimedia is not traceable
- Cannot input time off schedules
- Does not track actual calls

Workforce Management Systems

There are many specific WFM software options. Each of these software solutions is designed to perform:

- Call and CSR data gathering
- Forecasting of future call demand
- Calculating CSR staffing requirements based on forecasts
- Generating schedules to closely match the forecasted requirements
- Analyzing the accuracy of the forecast as well as CSR adherence and/or conformance to schedule

The benefits of WFM software deployment are quite obvious on the surface. First, WFM software solutions are almost always designed to be integrated with the telephone and automatic call distribution (ACD) system so that the vital process of data gathering can be automated. Since the process routinely requires no human intervention, a variety of robust data elements can be gathered and made available when creating forecasts. The collected data can also include CSR level data that provides the ability to track performance by the workforce with regard to schedule adherence and conformance.

Armed with accurate and up-to-date information, WFM software may then provide schedules that meet the demands of the CSRs, by using individual CSR schedule preferences that meet the demands of the business and by closely matching the available staff to the predicted call arrival patterns.

The software often provides other benefits such as the flexibility to update schedules frequently, meeting call demands that change weekly, daily, or even hourly. Some systems even allow for schedules to be changed intra-day based on an unforeseen increase in call demand or a high rate of CSR unavailable time (e.g. absenteeism, tardiness, and unscheduled meetings). Many WFM tools can also account for multi-site or multi-skill efficiencies – providing a truer allocation of staff and a reduction in overall staffing costs.

Benefits

- Provides the ability to get measurable results and the ability to track improvements.
- Improved accuracy of schedules.
- Increased CSR productivity (utilization).
- Reduce supervisory/management time involved in the schedule management processes.
- Automation of workforce management tasks such as data collection and manipulation of the data.
- Reduction in workforce shrinkage.
- Reduction in network costs.
- Can be integrated with payroll systems.
- Schedule Flexibility—for requesting overtime shifts, time off without pay, bidding on shifts etc…the direct supervisor need not be involved in these decisions. An additional benefit is the entire scheduling process is perceived as more fair by the CSRs. This is a system making the decisions, not a supervisor or manager.

Drawbacks

- If the users are not properly trained in the tool, the tool will not provide them with results that they are expecting.
- The data being entered must be accurate (garbage in/ garbage out).
- There are multiple steps that need to be taken in the software in order to complete the transaction. If you miss a step your data will be in accurate.
- Validating what the system is doing—because of the complexity of the software double-checking that what you have asked for is correct.

- The tools that are being offered vary by supplier and do not necessarily support everything that a workforce manager needs to do. Many are creating tools outside of their main tool for validations as well as features that are currently not offered.

Considerations

After seeing the long list of benefits that WFM software solutions produce, most of the drawbacks of utilizing WFM software to forecast, schedule and analyze are difficult to find.

The only obvious drawback to WFM software solutions is that they carry a large price tag. The expense of the systems is not limited to the software, but includes the ongoing cost of supporting and maintaining the hardware and the initial cost of systems deployment. Yet, the money saved by WFM software is substantial. Many of the software providers can provide ROI calculators. Make sure to utilize these tools before making the investment.

Many companies experience other problems that aren't so easily anticipated. Some call centers experience a decrease in employee satisfaction after deploying WFM schedules. This decrease is typically due to a lack of communication and understanding of what the WFM tool can do for the quality of the CSRs work and personal life balance. *It is critical that prior to adoption of these methodologies that significant communications with the CSRs take place.* The CSRs' performance is now measured in ways they weren't previously. CSRs in centers experiencing this issue reported feelings of "big brother" watching over their activities. Culture change and training are key success factors in implementing WFM.

As the channels of customer interactions becomes more diverse (e-mail, Web-chat), the inability of most WFM solutions to gather, forecast, and analyze anything other than phone calls becomes a larger drawback.

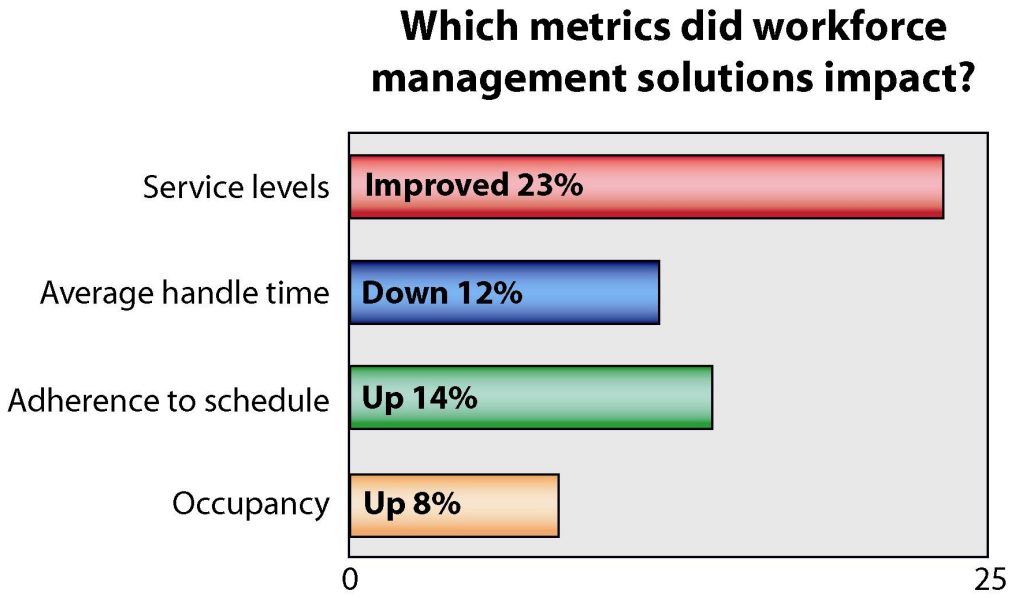
Some notes regarding the use of WFM software:

- The data gathering process must be continually audited to ensure accuracy.
- Even though WFM software is an automated solution, the system's activities and calculations require validation and maintenance. These duties must be performed by a staff member with a high level of expertise in the WFM discipline to achieve the full benefit.
- Most WFM software solutions operate at a level of complexity that requires multiple steps processes in order to complete its functions. This dictates the need for a dedicated person or team to ensure full compliance with the business processes that support the systematic processes.
- No single WFM system meets all goals fully. Each solution has its strengths and weaknesses.

Using our call center benchmark database of key performance metrics, we did a data run comparing those companies with WFM installed versus those that did not have WFM installed. The following figure shows the impact of workforce management on the key performance metrics, namely:

- Service levels improved by 23%
- Average handle time down 12%
- Adherence to schedule improved by 14%
- Occupancy was up 8%

Our conclusion is that WFM plays an important role in call center efficiency and effectiveness. By taking the improvement percentages shown in the following figure, and assuming a 100 CSR call center, taking 1,000,000 calls per year, the cost saving quickly approaches $500,000 per year. This amount of cost saving should produce a very significant ROI for WFM users.



Workforce Management

The new workforce management includes, but is not limited to, the use of traditional WFM software solutions. The new workforce management goes far beyond systematic generation of forecasts and schedules. In short, it is the cultural adoption of the principles which underlie the WFM discipline with the added layers agent empowerment and analytics.

Beyond the philosophical point of view difference between the traditional workforce management and the new thinking about workforce management and performance optimization is another critical aspect. The move from simple or even complex reporting to analytics. Analytics are the methods and tools that will help us answer, “How did the situation get that way?” For example, if my average handle time is 5 minutes, why is it 5 minutes?

Workforce management tools will help isolate the CSRs who are exceeding the goal and have a shorter handle time. What characteristics do they share that could be contributing to the more efficient call handle time? Could the answer be the same training class, the same trainer, the same server with faster response times? These analytic tools will allow the center management to drill down into center and/or team and/or CSR metrics to gain actionable insight into performance variations.

The successfully optimized organization not only understands the principles of WFM and uses the supporting software tools, the organization also accepts as vital the goals of WFM at all levels.

This included CSR recruitment and hiring teams and the call center management staff, as well as the CSR population themselves. WFM goals are measured and reinforced.

With the added business intelligence provided through the application of analytics, rather than making business decisions in a vacuum, supporting departments are provided new understanding of the call center's operational requirements.

Through this new understanding and use of the principles of WFM to guide consistent setting of policies the human resource teams recruiting and hiring of new CSRs to the management techniques used by line managers, the culture of the optimized organization works in harmony to maximize the benefit of workforce management to the business while creating a mutually beneficial and positive work environment where the CSRs can individually interact with and support WFM.

Benefits

- All of the benefits from workforce management
- Greater business intelligence through the application of analytics
- Improved flexibility in managing to center operational goals
- Increased productivity through greater knowledge of the operation
- Improved caller satisfaction
- More engaged CSRs, thusly less attrition

Recommended Best Practices

- If you have an ACD, but are a smaller center currently using Microsoft Excel or Excel with Erlang spreadsheets you should be looking at some of the new offerings for smaller centers. There are significant new products in the marketplace.
- Users of spreadsheets for forecasting and scheduling should be taking the following steps to follow best practices and prepare for the adoption of workforce management:
    - o Document all of the processes associated with completing the workforce management cycle.
    - Call History Review/Data Validation

- Forecasting
- Hire Planning
- Schedule Optimization
- Exception Management
- Intra-day Management
- Real-time or near real-time Management
- Reporting
- Analysis, What if scenarios

- Current users of WFM should be evaluating their center's current goal achievement and determine if additional features of WFM will provide the functionality required to consistently meet or exceed their goals.

It is not uncommon to find very quick ROIs on real-time adherence and other WFM features. There are several different types of workforce management tools in the industry for managing today's workforce. Some of the available features are listed below:

- Real-time adherence modules
- Performance management tools
- Time off administration
- Skill based routing support
- Non call work management
- CSR self service capabilities
- CSR schedule shift bids and shift trades
- CSR statistics (individual summary and group average comparison statistics)

- Diaries should be kept which record what events shaped specific metrics, i.e. call volume, AHT, and more.

Sample ROI Analysis

The following information is actual data provided by one of the study participants and compiled one year after installation of the WFM system documenting a ***397% ROI!*** This data was provided to senior management assessing the effectiveness of new technology purchases in the center. This center has 350 CSRs, handles 1.9 million inbound calls and 140,000 outbound calls per year. Seventy percent (70%) of calls are typical customer service calls.

Initiatives/Changes

- Focus on Improving Schedule Adherence
  - Management has focused on improving adherence through use of WFM System
  - While managers' time spent focused on adherence has doubled, the benefits have been dramatic

- Agent adherence has improved in both daily average and variance
  - From an average 70% with +/- 10%-20% variance in early 2003
  - To an average 95% with +/- 2% variance in June 2003

- Increased Forecast Accuracy
  - Call Volume forecasts have improved from regularly >20% error to regularly <5% error

- More Schedule Flexibility
  - Better scheduling of breaks, lunches, and training
  - Increased flexibility in start times
  - Alternative schedules, including 4x10's and others

Key Results

- Increased agent utilization from adherence and schedule flexibility improvements equal to $624,000/year cost avoidance
  - During a period when total outstanding accounts increased 9% and call volume increased 10%
  - Labor hours increased only 6%
  - Overtime hours reduced by 38%
  - Shared resource hours required reduced by 49%

- Customer Service Improvements
  - Average Speed of Answer decreased from 150 seconds down to <50 seconds (cut by 2/3)
  - Caller abandonment rate has decreased from >10% down to 2-5% (also cut by 2/3)

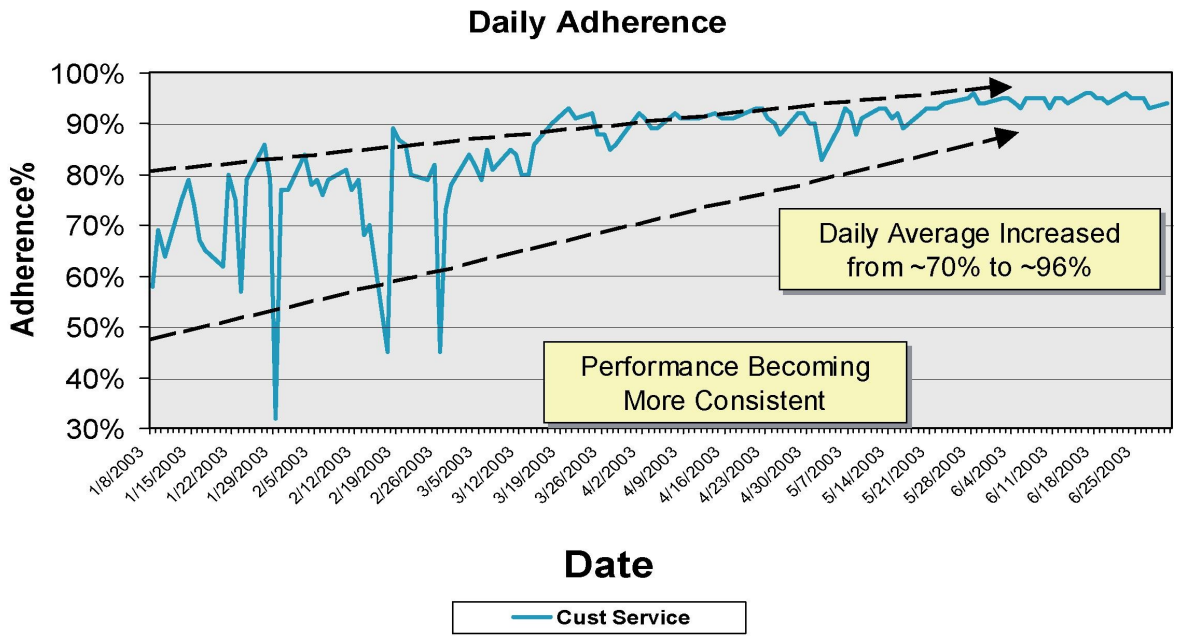
- Telecom expenses reduced
  - 50 second ASA reduction saves $78,000 per year

- Administrative burden on managers has been reduced
  - Excluding adherence management, manager hours spent on schedule administration cut by 58%

Note:

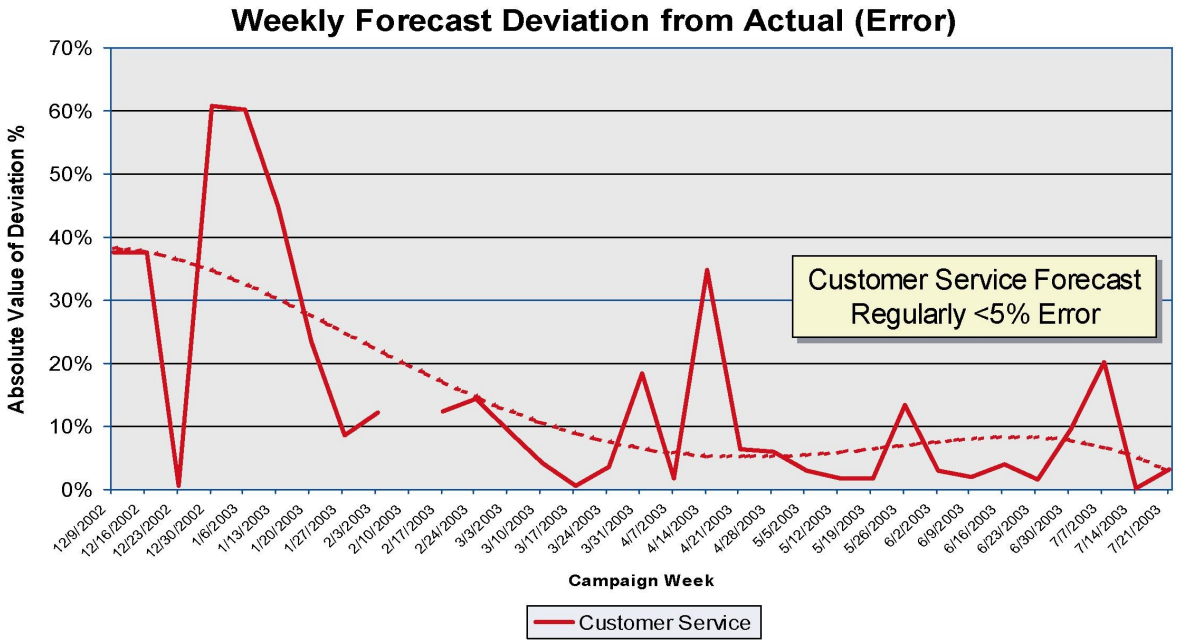
Manager time spent on adherence management increased with initiation of the WFM Group and ability to monitor agent adherence. This time will reduce as adherence & monitoring receive greater cultural acceptance within the organization.

Agent Schedule Adherence Improves Dramatically



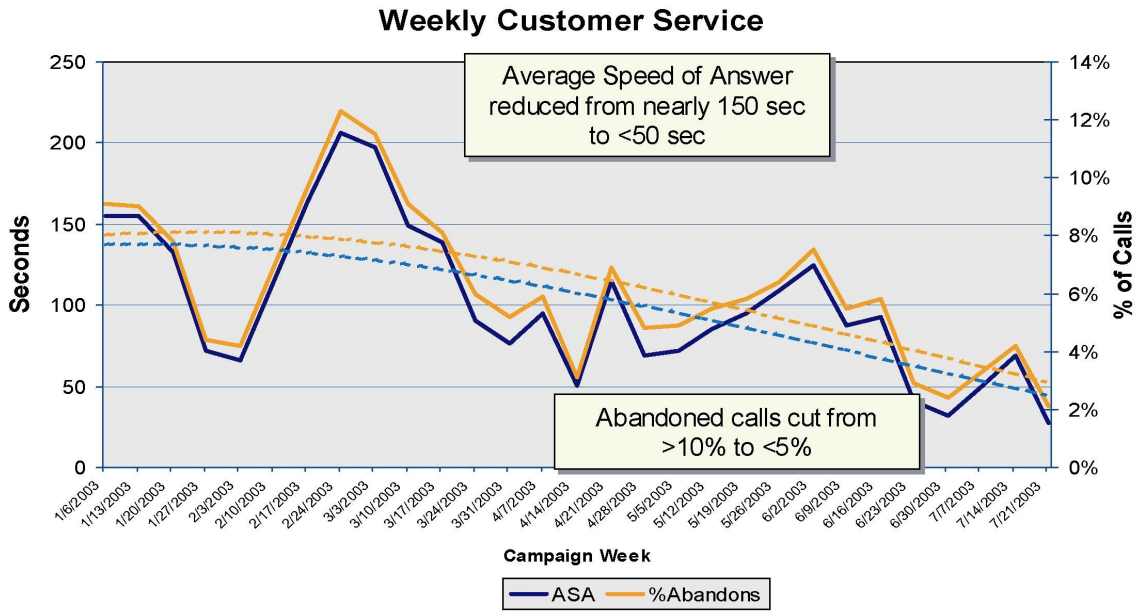
Data source: Adherence Reports

Forecasts Becoming More Consistent & Accurate



Data source: WFM System database
Note: Data missing in February 03 as result of facility move

Customer Service Dramatically Improved



Data source: WFM System database

Agent Utilization Improvements

Customer Service	2002	2003	Change
Regular Hours/Month	8,929	10,094	+13%
Overtime Hours/Month	715	441	-38%
Shared Resources Hours/Month (Reg. +OT)	540	274	-49%
Total Hours/Month	10,184	10,809	+6%

Outstanding Accounts	978,894	1,063,944	+9%
Calls/Month Handled	118,282	130,625	+10%

Comparison to Pre-Sale ROI Calculations

Savings Category	Projected	Validated
Manager Workload Reduction - Adherence Management - Other Administrative Time	 -19 hrs/mo. -38.5 hrs/mo.	 +174 hrs/mo.* -55 hrs/mo.
Reduced Telecom Expenses	$9,737/yr. (-5.3 sec ASA)	$78,000/yr. (-50 sec ASA)
Increased Agent Utilization & Productivity	$206,539/yr.	$624,000/yr.**
Total	$216,000/yr.	$702,000/yr.

Total benefit of $702,000/year with a total cost of deployment of $177,000 yields a first year ROI of ***397%***.

*Due to the development of the Workforce Management Group and the kickoff of WFM System in January 2003, the ability to monitor agents' adherence on a historical level was initiated. Therefore, more dedicated time is now spent on monitoring intra day service level and real time agent adherence.

**Agent adherence improvement equates to recovering 26% of agent hours. 10,000 regular hrs/mo. x 12 mo. x $20/hour x 26% = $624,000 of benefit. This benefit was realized by Enterprise as smaller staffing growth to call volume growth, combined with dramatically reduced ASA and caller abandons that typically require additional staffing to achieve.

Data Sources

- Enterprise WFM System database backup 7/30/03
  - Customer Service campaigns from December '02 to July '03
    - Queue: Customer Service English
    - Organization: Customer Service
- Data provided directly by WFM System
  - Average agent hours/month for 2002 & 2003
    - Regular hours
    - Overtime hours
    - Shared resource hours
  - Agent cost data
  - Call volume & outstanding accounts data for 2002 & 2003
  - Telecom cost/minute

WORKFORCE MANAGEMENT ROLES AND RESPONSIBILITIES

This section addresses how the workforce teams have been formed in centers that have accomplished the goal of optimization of their workforce and are continuing to meet those goals day in and day out.

Human Resources

The first step in a successfully optimized workforce is a human resources department that participates in creating a work environment that supports optimal scheduling practices. The role of the human resources department is key and cannot be underestimated in identifying candidates at all levels of the organization that understand and support the goals of workforce management.

They must be a partner with a full understanding of the art and science of workforce management. The role of recruiting and screening with the correct communication of schedule availability to the candidate sets the expectation.

In one of the best practice organizations, the HR organization sets the expectation that these are the schedule requirements, and if these requirements do not meet the candidate's needs, there is not an available position (a nice way to say "do not apply").

The Dedicated Workforce Management Team

The dedicated workforce management team will control the majority of the optimization process from the collection of call data and CSR activity data to the creation of forecasts, and often the creation of the CSR schedules and on to the reporting of key performance metrics.

The requisite skill set for the central team includes:

- Complete knowledge of the available tools that support the WFM process
- An understanding of the overall goals of the WFM team
- The analytical skills to create and support an effective WFM process
- The ability to communicate to other departments their role in affecting workforce management and performance optimization as well as the importance of WFM success

Our observations were that the WFM staff members typically "self-selected" their roles. There are essentially two separate roles, the "forecast team" and the "control/command center" team.

- The team charged with providing accurate forecasts are focused on the data collection, data manipulation, simulation and analytics.
- The command/control center team is focused on intra-day and real-time management of exceptions and adjustments.

The Control Desk/Remote Location Workforce Management Team

The control desk, or on-site presence of workforce management serves at least one, and often two functions depending on accountabilities of the central workforce team.

The role of the on-site team may include:

- The creation and distribution of CSR schedules after receiving the forecasted requirements from the central workforce group.
- If schedules are generated by a central WFM team, the on-site team is then tasked with supporting intra-day schedule adjustments based on the ever changing, real-time, call center environment.

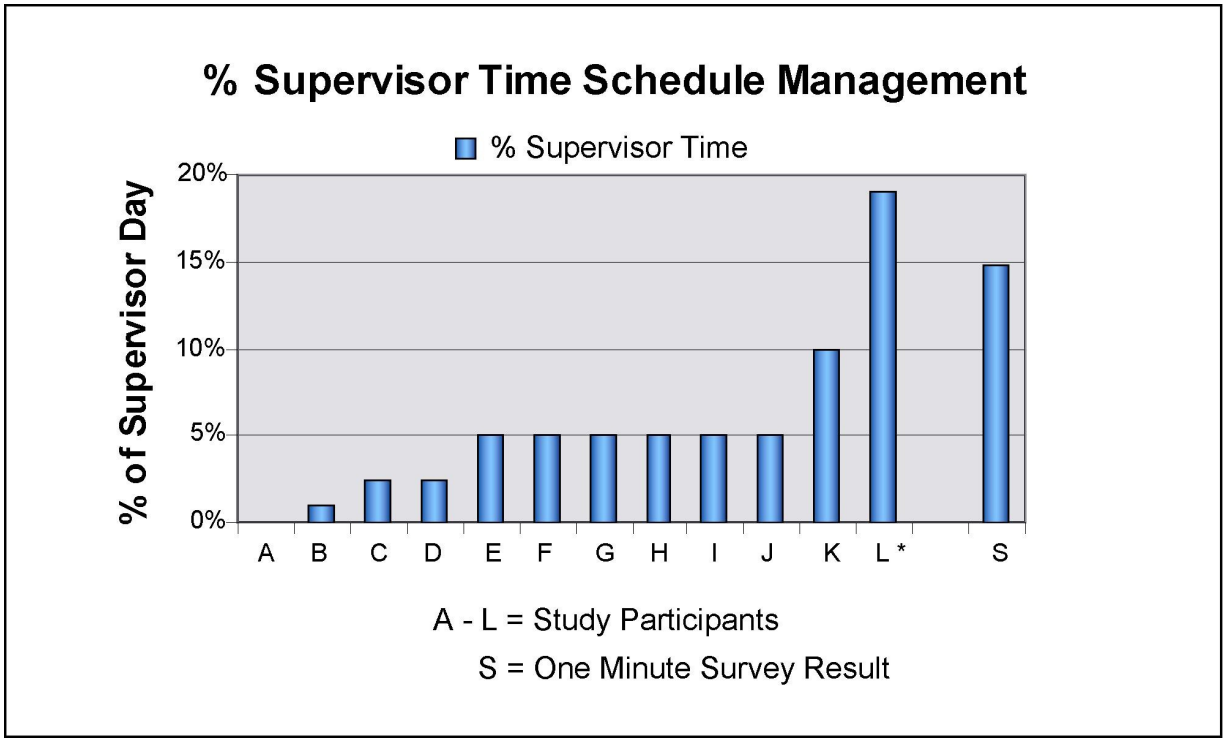
In the most effective arrangements, the remote location WFM team, often called the "control or command desk team" is integral to the central team and reports through the same organizational structure, sharing the same goals and objectives.

Ratio of Workforce Management Team to CSRs

The goal is to reduce the direct supervisor's management of the CSR schedules and allow the supervisor to focus on the CSR's development, performance, adherence to schedule, and the day-to-day tactical environment of the call center.

The best practice study participants ratio of workforce management team members to the CSR population ranged from 1:50 to 1:160. In the 1:160 extreme, the centers had over 4,000 FTE CSRs.

The Floor Supervisor



*In this center, supervisors are responsible for tracking and logging all adherence exceptions any time a CSR is out of adherence.

The successful workforce management organization includes a floor management team that understands the basic process and goals of schedule creation and the importance of schedule adherence. This knowledge allows the floor team to:

- Make decisions and adjustments in concert with the workforce team in the real-time environment that support and even augment the precise allocation of the CSR workforce against the forecasted call demand.
- Communicating with the workforce team changes that impact schedules, such as CSR tardiness or absences, or sudden spikes in call arrival.
- Works with the workforce team to plan for team meetings, one-on-one coaching, and training.
- In some organizations, the floor supervisor is involved in the communication of time off and vacation requests from the CSR to the workforce team and back. Additionally, when a request has been declined by the workforce team, the floor supervisor will have the authority to override the workforce denial and communicate that information to both parties.

This closed loop of communication allows for intra-day plan adjustments such as re-forecasting and changing of break schedules well as allowing for more accurate historical adherence reporting.

The Call Center CSR

Just as the managers and supervisors must understand the workforce management cycle, CSRs must also be educated on how forecasts and schedule adherence impact the performance of the center.

CSRs that understand the science behind the creation of their schedule will more closely adhere to their schedule. Better individual understanding of WFM also emphasizes the responsibility of the CSR to accurately report their time and activity.

An excellent method for demonstrating to the associates the impact of their adherence is showing them the following table.

CALLS	60	60	60		300	300	300
AHT- Sec.	330	330	330		330	330	330
STAFF	25	24	23		114	113	112
ASA-Sec.	**48**	**96**	**254**		**50**	**76**	**130**

Recommended Best Practices

There is not one single answer to the issue of best practices. There are many guiding principles that should be included in the development and functions of the team:

- Everyone in the center plays an important and equal role.

  o The empowered CSR can take real ownership of managing their schedules, adherence and exception reporting.

  o The front line supervisor and/or manager assists the CSRs in understanding the impact each person has on the center achieving the performance goals. The supervisor also plays a role in adherence and exception reporting. In centers where the CSRs are not yet able to directly (automated on-line systems) request changes to their schedule, the supervisor often plays a role.

  o The direct members of the WFM team communicate outward (business managers) and inward (center staff) on the requirements from each of the organizations.

  o Outward communications may be with the marketing and/or sales organizations to get business and promotional projections. Also, communicating with the human resources organization on staffing requirements.

  Inward communications to the center staff, communicating upcoming activities that may affect volumes, thusly changing schedules. Communication of intra-day results, projections and recommended adjustments are critical real-time constant communications with the center staff.

In centers of greater than fifty CSRs, the need begins for a full-time staff person to manage forecasts, schedules and reporting. The goal is to keep the front line supervisors focused on training, coaching and supporting an environment focused on quality and delivering an exceptional customer experience.

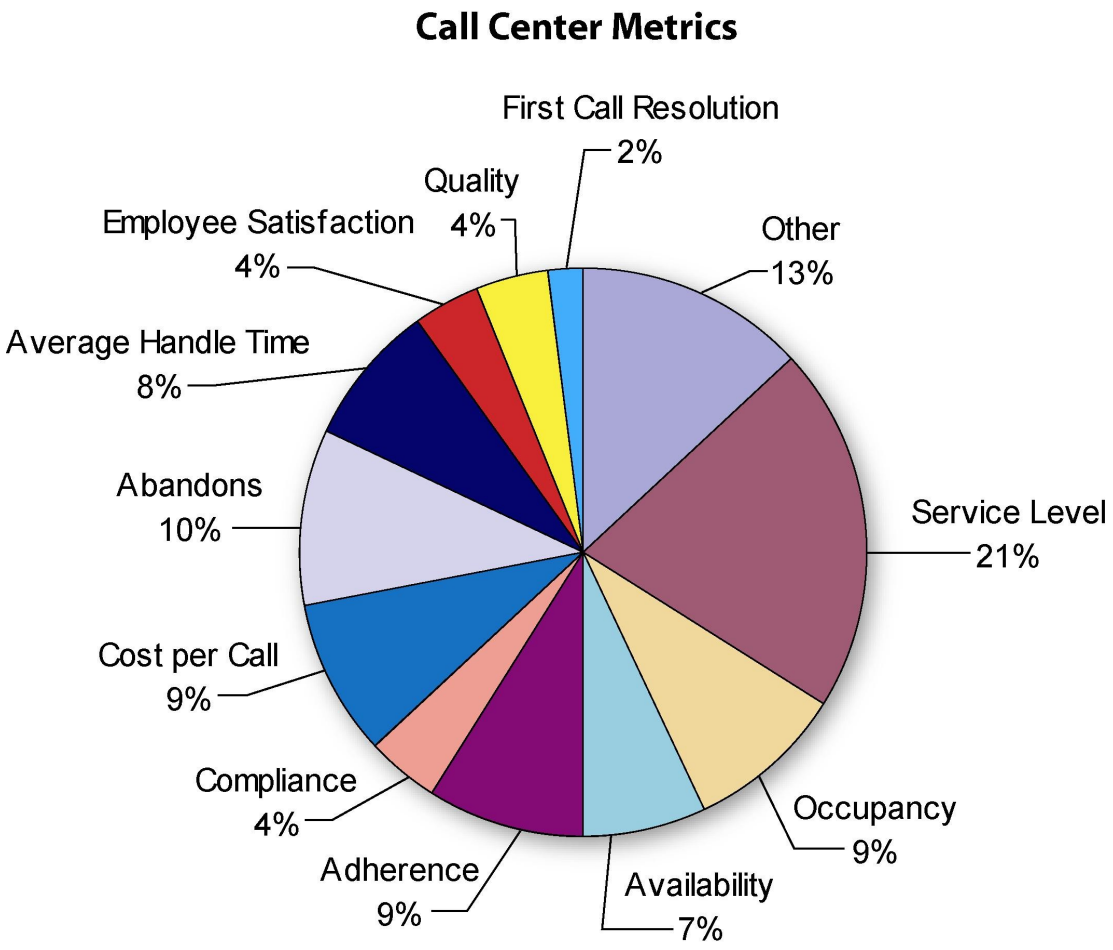
Workforce Management Metrics

This section addresses the metrics focused on optimization of the workforce. The key metrics of every call center should drive behaviors to those activities which will delight the caller. Of course, all metrics must also support the company's goals and an engaged workforce.

> "That which gets measured gets done."
> Nowhere is this adage truer than in the call center.

Overall Call Center Metrics Focused on Customer Satisfiers

In a recent survey, we asked the question: "What are the metrics you use to evaluate the overall efficiency and effectiveness of your call center?" Of the 14 companies surveyed the most common metrics being used were as follows:



The most selected eight metrics on the chart are important data points. The question is: "Just what do they tell management?" These are the traditional measures that are relatively easy to gather:

1. Service Level
2. Occupancy
3. Availability
4. Adherence
5. Compliance
6. Cost per transaction/call
7. Abandons
8. Average Handle Time

The following four measures: Caller Satisfaction, Employee Satisfaction, Call Quality and First Call Resolution require more effort to collect and understand. However, we are no longer just looking at data points. These are the measures that will move the quality of the center's performance, ultimately delivering a better experience to the caller.

Management Information

When the participants in this study were asked the question: "Please list the 5 most critical reports to managing your center." The responses were again nearly as diverse as the metrics.

However, in some centers there are initiatives to provide senior management real information, rather than a collection of data points.

Here is a list of the new information tools being used by study participants:

- Analytics – Graphing tool to show important trends
- Business revenue trending tool
- Dashboards of information with trend indicators
- Balanced Scorecards (the center's contribution to the Corporate Balanced Scorecard)

At this time, this list is relatively short. However, with the increasing visibility and use of decision support systems, and performance optimization tools, we believe this list will be far more comprehensive a year from now.

Workforce Management Metrics

How is WFM effectiveness measured? There are essentially two components of workforce management that the team is responsible for:

- Forecast Accuracy
- Schedule efficiency

Forecast Accuracy

When the study participants were asked, "How is the effectiveness of workforce management measured?" 100% of the respondents included *Forecast Accuracies.*

There were some variance in the responses, in that one company measured the accuracy weekly, and others were measuring at the interval. Generally, the larger the call volume the more granular the measurement.

Here are the responses:

Size of Center	Accuracy Goal	Actual Accuracy
Large	10%	20%
Large	10%	6%
Large	5%	5%
Large	5%	<5%
Large	3%	<2%
Large	2%	2%
Mid	10%	<10%
Mid	10%	5%
Mid	5%	5%
Mid	5%	4%
Small	10%	10%
Small	10%	10%
Small	10%	9%

Note: Small Centers are <150, Mid Centers are 151-250 and Large are >250 CSRs.

To calculate forecast accuracy:

Forecast of 10,000 calls for the period, actually received 9,487 calls:

Actual (9,487) minus forecasted (10,000)/divided by forecasted (10,000) for -5.13%

OR

Absolute value of forecast minus actual/divided by forecast for a 5.13% variance from forecast

Schedule Efficiency

Schedule efficiency is the measure of how accurately the generated schedules match the forecast. This is the under and over of staffing number.

The command center and direct supervisors should be working closely together on ensuring adherence to the WFM-generated schedule. Also, the command center should have control of modifying schedules intra-day based on the intra-day patterns. These

changes could go anywhere from moving the times of breaks and lunches to removing and/or adding training, overtime, or time off without pay.

To calculate schedule efficiency:

Original schedule of 27 CSRs for the interval (based on 10,000 calls for week, with 9,487 actual calls received):

Actual CSRs (26) required (based on 9,487 calls received) for the interval /divided by scheduled CSRs (27).

This would equate to a 96% schedule efficiency.

How is CSR Performance Measured

From a WFM perspective, there are two or three measures, as follows:

- *Adherence*: is a measure of how the CSR adheres to the schedule, which in turn allows them to satisfy the caller by being available when the customer needs them.

  One of the keys to schedule adherence is providing CSRs the flexible schedules and the ability to request changes in the schedules when needed in order to help them comply with their pre-set schedules.

  Adherence among the study participants ranged from 90% to 98.5%.

- *Compliance or Conformance*: is a measure of the amount of time in scheduled activities as compared to the scheduled time. For example, if a CSR was scheduled for 8:00 am to 5:00 pm but instead the CSR worked from 8:15 am to 5:15 pm in the scheduled activities, the CSR was in 100% compliance, but not in adherence.

  From the centers who measure compliance and/or conformance, their performance ranged from 90% to 95%.

- *Attendance*: is a measure that is the opposite of being absent from work. Typically, the centers interviewed allow a specified number of absences during the year. If within the allotted number of absences, a CSR is not out of line. The exception will be noted in the WFM System.

Recommended Best Practices

Overall Center Metrics Focused on Customer Satisfiers

The following is the only first-order metrics:

- Caller Satisfaction – typically top box (or "perfect score") satisfaction

Best practice center metrics should be focused around the above measure. If the center is not delivering an excellent experience to the caller, do the other measures even matter?

Employee Satisfaction, Call Quality, First Call Resolution and Service Level are second-order metrics that simply support the attainment of high scores on first-order metrics.

Workforce Management Metrics

- The best practice companies participating in this study had forecast Accuracy in the +/-10% range for smaller centers, and for larger centers with dedicated WFM staff and full system support they had accuracy results in the =/-5% range.
- Of the best practice study participants only two are currently tracking *Schedule Efficiency*. This is a metric that will provide a valuable data point to evaluate the effectiveness of both forecasting and scheduling.
- Employee satisfaction surveys sent from the WFM team to the CSRs and frontline supervisors is another tool to be used in the pursuit of continuous improvement.

How are Frontline Supervisors Measured

- The frontline supervisor has direct and immediate impact on CSR adherence to schedules and must also be measured on her/his team adherence achievement.
- When the frontline supervisor overrides the WFM team, this event and/or exception should be coded for tracking. The frontline supervisors exceptions should then be measured against a department norm and the supervisor held accountable.

How is CSR Performance Measured

- The expectation of the concept of adherence to a schedule should be set during the interviewing process as well as the first day on the job.

Adherence to the schedule is what makes or breaks the work that the command center does. This is an element that is outside of the control of the command center, but needs to be the responsibility of the CSR, and that of the direct line supervisor in order to achieve the overall goals established for the center.

- The WFM performance standards for the CSRs and the direct supervisor should be tied to those center operational attributes that contribute to the caller's delight.

How are CSR Schedules Developed

CSR schedules, no matter what method is used for developing schedules, are designed with one basic goal in mind: to use the fewest number of payroll hours to meet the anticipated call volume demand.

Even if schedules normally remain unchanged from week to week, hiring practices or periodic schedule alterations have the same end state in mind as does a center that uses sophisticated software packages and weekly variable CSR schedules. That end "goal" is one in which call arrival is anticipated and human resources are deployed to ensure achievement of key metrics with the greatest of ease.

With that as an accepted goal of any call center WFM scheduling practice, the optimal schedule is one that changes to exactly meet all call arrival patterns, leaving just enough CSRs staffed to narrowly exceed metric goals without wasting payroll. But in any normal call center, where call arrival is a constant variable, an optimal schedule cannot practically or logically be deployed. The reasons for this lie in the limitations we must place on schedule development and real-time practices.

Optimal scheduling would require scheduling CSRs to work perhaps a single peak half hour interval, only to send them home due to a drop in demand in the following interval and then re-calling them to meet a later peak in calls. Realistically, CSR schedules cannot be deployed with that level of flexibility. Logically though, the closer to that optimal state a center can reach by placing the fewest limitations on scheduling practices, the more efficient that center can be.

Types of Schedules

Fixed Schedules

Fixed scheduling is done by completely limiting all schedule variables to produce a predetermined list of shifts that are assigned to the CSR staff as demanded. Fixed schedules rarely, if ever change. Centers that use fixed schedules must either request that some existing staff members switch to a new shift or must require newly hired CSRs to assume schedules that address understaffed days or intervals.

Intuitively or statistically, call demand patterns are taken into account when assigning fixed schedules, but this method does not anticipate the ever-changing call demand conditions and inherently engenders consistent over and understaffing. This over and understaffing also means wasted payroll, and often call center performance goals that are not met.

Fixed schedules do not require any sophisticated software solution and normally are not done using any workforce management software or methodology. The tool to develop these schedules is usually somewhere between pen & paper or an Excel spreadsheet.

Flexible Schedules

Flexible scheduling requires that at least one factor used to determine scheduling outcomes is variable. Flexible schedules can have an optional outcome with regard to a single or even multiple schedule elements including shift lengths, break placement in each shift, total hours scheduled or shift start and stop times. Flexible schedules may include items that vary on a day-to-day basis, or may only include variation at the time of each generation of schedules (i.e. weekly, bi-weekly, quarterly)

Schedule flexibility can run a full spectrum of outcomes, from all scheduling elements being changeable to only one or two being variable. Since an optimal schedule has 100% variability, the degree of variability is the determinate for how optimized schedules can be. Conversely, the greater the constriction on variability, the less optimized schedule production and call center operation will be. The following is a study of different methods of variable scheduling practices.

Variable Shift Times

Variable shift times are a scheduling methodology that relies on using varying shift begin and end times to best meet expected call demand peaks and valleys. Variation can take place from day to day, from shift to shift, from CSR to CSR or from schedule generation period to period.

The more frequent the variation, the closer the schedules can flex to meet variable call arrival patterns while mitigating the need for periodic overstaffing during shift cross over periods (e.g., when the morning team shifts have not ended and the evening team has already begun).

Whatever limitations are placed on the scheduler with regards to shift times, for instance requiring each schedule having a consistent start time for the duration of the scheduling period or requiring that full-time employees receive days off consecutively, the greater the cost to the center due to scheduling inefficiency.

Variable Shift Duration

Shift duration variation is accomplished by applying differing lengths to best meet expected call demand peaks and valleys. Shift duration can vary from day to day, from shift to shift, from CSR to CSR or from schedule generation period to period. For example, the Monday, 12 hours, Tuesday 10 hours, Wednesday 8 hours and Thursday and Friday 4 hour shifts.

Shift variation is normally used in a very limited way, due to the perception of low acceptance by CSRs. Also, because it can be viewed as more difficult to manage, front line supervisors and managers do not often favor wide use of variable shift lengths. However,

shift variation by even a small minority of the staff can very effectively marry the CSR resource supply curve to the expected call demand line.

CSR Preferences

This method of schedule determination is done in most WFM software packages and relies on a set of constraints applied at the individual CSR profile level. In the CSR definition screen, preferences on scheduling variables can be used to determine a CSR's final schedule makeup by noting preferred: shift start times, shift duration, break preferences, lunch time preferences, etc. For example, CSR B's preferences are Friday/Saturday off, start time between 7:00 a.m. and 8:00 a.m.

Each schedule option per CSR is listed in a hierarchy that shapes the final output from the WFM software by ranking the variables from most desired to least important. Of course, using preferences to determine schedules will compromise the optimal schedule and therefore contains a very real cost element.

Shift Bidding

Shift bidding is a scheduling method that uses a forecasted call demand curve to determine an exact blend of shifts to ideally meet the predicted arrival pattern. This blend can be constrained prior to generation by listing logical limits to factors such as maximum and/or minimum number of schedules required, total hours to schedule, and minimum opening or closing shifts. Upon generation of the schedules, the optimum blend of shifts, given the constraints applied, is produced as a roster without assigned owners of the various shifts. CSRs then select, through various methods, one of the schedules on the roster. Shift bidding can be time consuming and is usually done at wide intervals throughout the year, usually monthly or quarterly. Therefore, even though the first roster of schedules is nearly optimally matched to the forecasted demand pattern, that pattern will vary over time. The final outcome is a blend of schedules not designed for the changes in demand.

The order of CSRs shift bidding is typically seniority or performance based with seniority the predominant choice of most centers, as it is easier to explain and sell to the CSR population.

Some variations observed at best practice centers were:

- Some number of CSRs will be hired. The workforce team will run a new schedule, forcing in the existing schedules, but with a number of new schedules available (equal to the expected new CSRs).

  The workforce management system will then generate new schedules to move the existing schedule closer to optimal. These new schedules can then be made available to the existing CSR population. The remaining schedules can then be made available to the Human Resources for their recruiting efforts.

Tools Used

There are many methods for CSRs to have access to bidding. It can be done through a Web site, through IVR, and or e-mail based. This is also where they can request the time off.

Recommended Best Practices

Fixed versus Flexible Schedules

From the findings of this study, all centers should explore flexible schedules.

- All participants in this best practice study use some level of flexible schedules, even if the only variables used are breaks and lunch.
- The findings of this study were that the centers utilizing flexible schedules with greater degrees of variableness had the highest performance in forecast accuracy, schedule efficiency (if measured), ASA and many of the other traditional measures.
- Surprisingly the center with the highest degree of variableness (2 hour variance in start times in some shifts) also had the highest degree of adherence.
- CSR retention appears to increase with greater flexibility in scheduling. The center we visited with the greatest variability in schedules, also had the most available schedule patterns (100+) and the highest retention rates. Anecdotal information collected during interviews with CSRs supports their increased job satisfaction with schedule flexibility.

Preferences versus Bidding

There really is no single answer here. In a couple of the centers participating in this study, a combination of the two methods were used.

This is done in centers where the staff is predominantly full-time. The workforce management team will use CSR preferences to mold the individual schedules to as close to the optimal schedule as possible. The schedules will then be made available for bidding, either by seniority or performance.

WORKFORCE MANAGEMENT AND MULTI CHANNELS

This section addresses the issues and challenges of workforce management and multi channels—namely, phone, e-mail, and Web-chat.

Findings

- Of the study participants, 75% are doing e-mail in the center, ranging from 24,000 to 220,000 e-mails per year. 60% of the centers using e-mail have some type of e-mail management.
- 50% of the companies are doing inbound and outbound, handling up to 2,300,000 outbound calls. None of these are in a predictive out dial environment. The outbound calls are either made in blocks of scheduled time, or in an after call mode to complete a transaction.
- None of the centers studied are using a universal CSR or the "blended" scheduling model.
- Of those participants scheduling e-mail or outbound when mixed with inbound call volumes, all are doing dedicated blocks of time.
- In smaller centers, e-mail is available to "fill in time" between calls.
- None of the companies interviewed or visited have plans to go to a completely blended universal CSR model where a CSR with a specific skill set will be dynamically switching from inbound to e-mail to inbound or to outbound.

Multi Channel and Workforce Management Issues

This is a much more complex issue than simply having the technology solution to accomplish scheduling multiple channels per CSR.

As in center budgets, the staffing issues typically make up at least two-thirds or more of the issues surrounding workforce management and multi channel. Issues such as:

- Are the CSR's able to handle inbound, outbound, e-mail and chat consecutively?
- Do excellent telephone skills equate to excellent written skills?
- Is it really more efficient when the CSR changes from a voice call to a written media at constantly changing intervals?
- Do you actually achieve economies of scale in this configuration?

Then there are the pesky customer expectations:

- What is the time to service expectation in each channel type?
  - Caller expectations for maximum delay.
  - Expectation for e-mail response time
- What is the customer tolerance for delay? Some applications will require immediate availability or response.
- What happens when backlog occurs?
- What happens when the service expectation is not met?

Cost differentials:

- Depending on who is doing the calculation and the specific application, you will see cost for the telephone call anywhere from $3.00 to $30.00.
- The e-mail contact can be as little as a few cents depending upon automation and volumes to a few dollars per e-mail.

Workforce Management Scenarios for Multi Channel

Here are basic scenarios being used in the developing forecast and scheduling for multi channel applications:

1. Deploy the new channels into single skill queues. Isolate and test assumptions for accuracy. During this time the historical information is developed which will allow you to determine if this is adequate or if you need to move to a multi-skilled arrangement.
2. Schedule specific skills for blocks of time. This can be an effective model when there is enough flexibility to build the blocks of time outside of the highest volume for alternate skills assigned. For example, is the volume of e-mail such that it can be handled during the intervals of lower inbound call volume? If so, this is an effective model.

   There is no real efficiency gain or FTE reduction in this model.

The next phase of this process would be to move to:

3. A combination of single and multi skilled CSRs. In this scenario, you would use a core group of single skilled CSRs and some number of multi skilled CSRs to assist in peak volume situations.

   This is probably most effective in small to mid-sized centers where the peaks and valleys of call volume allow “gaps” where additional CSRs may have “fill” time. This does offer possible reductions in the net FTEs required, with the added benefit of work variety for the CSRs.

And finally:

4. The “universal CSR” where any CSR is trained to handle any type of interaction with a client.

   The larger the center the less likely there will be any economies of scale or FTE savings with this, as the scheduled skills have probably already been optimized. In fact, there can sometimes be an actual loss of efficiency as CSRs move from media type to media type and loose the “rhythm of the work pattern.”

   This also adds significant complexity to the workforce management process.

Cautions

- One vendor has a white paper on their Web site which says, “If you are looking at sharing CSRs across contact channels, you should proceed with caution. Integrating shared CSRs first requires a successful mastery of ‘true’ skills-based routing and scheduling.”

  We concur!

DEVELOPING SCHEDULES

This section addresses the various ways of distribution of the call center schedules and how they are managed.

By the Direct Supervisor

During the supervisor's weekly one-on-one session with the CSR, the supervisor can review the CSR's schedule and the upcoming events that are driving the schedule requirements. Often in this scenario, the CSR receives paper from the supervisor, and in return, provides on paper all requests for schedule changes or vacation. This can be time consuming and inefficient.

By Central Command Center

The command center distributes all schedules to CSRs. All changes to these schedules are then sent back to the central command center so that the impact to the overall schedule can be adjusted. This exchange can be paper or an e-mail distribution. This is more efficient.

By E-mail

Another method is to have the individual schedules broadcast to the CSRs by e-mail. The schedule is then available for review when the CSR checks their inbox. The CSR can then respond back to the command center with any changes he/she may wish to make. Using form management will increase the efficiency of this method. The workforce team will not have to read through lengthy explanations, when all they are looking for is the change dates requested by the individual CSRs.

By Database

All schedules are loaded into a database by X time on Y day. All CSRs and supervisor can access, view and print their schedules. CSRs do have to be on the company's network (intranet) in order to have access to the schedules.

By Web/Automated Self Service

CSRs log in, review and print their schedules – request their time off and changes to the schedules all via an on-line Internet access or dial into an IVR/VRU.

This may also provide a view of current conditions and the upcoming volumes and expectations. Also, in the newer versions, the requests can be approved, waitlisted or denied automatically and in near real-time.

Recommended Best Practice

Our interviews with best practice organizations confirm that the timely delivery of information related to schedules is crucial. Therefore electronic delivery is optimum. Where electronic delivery of schedules or CSR requests for schedule changes is not feasible, a WFM workstation in a centralized cubicle for the CSRs to use is an excellent alternative. If the call center is going to operate with flexible schedules for optimal performance, real-time access by the CSR to their personal schedule is critical.

The best practice organizations are either currently providing as much CSR control and access as possible.

Intra-day flexibility of moving lunches and breaks to meet the changing call volumes requires, at a minimum, access to e-mail and optimally, a system that will alert the CSR to go to the workforce management site to check for changes in the daily schedule.

COMPENSATION IMPACT

This section addresses the impact of compensation on WFM. We found that there are actually multiple components to this issue.

Integration to Payroll Systems

WFM systems can be integrated into the organizations payroll systems. In this integration scenario, the CSR only gets paid based on phone login/log out times as well as adherence to the schedule and other factors that can be tied directly to variables captured and disseminated to the CSR and payroll.

Surprisingly, of the companies interviewed, only three have payroll integration, and that integration was with homegrown systems. Another three are planning for integration of their WFM Systems and are scheduled for 2004.

Pay for Performance

All call centers interviewed or visited have some type of direct or indirect tie between adherence goals and compensation. This can certainly drive behaviors, however, as one of the workforce managers pointed out, it is more important to reward the behaviors that contribute to adherence, rather than adherence in and of itself. For example, a CSR goes into ACW four minutes before lunch or break, so as not to take a call that would extend over the time the CSR was to leave, thusly being out of adherence. In another center, to avoid such behaviors, the CSRs have an allowed seventeen minutes per day that is not tracked. We recommend the latter approach.

Reward and Recognition

Reward and recognition systems promote and reinforce desired behavior. To be effective you must make the link between performance and reward clear, explicit and achievable. There are many metrics that you can tie the reward to. The most common ones workforce management focuses on are absenteeism and adherence to schedule. Meeting these goals will deliver benefit to the team, center, customer and enterprise.

Recommended Best Practices

Without doubt, there is a significant benefit to integrate the payroll systems, ACD and workforce management. One manager related a savings of seven payroll minutes per day with this integration. The CSRs no longer measure their time to the clock, but rather to login and taking calls. Adherence to the schedule begins to take on any entirely different personal aspect.

In nearly all of the call centers interviewed, adherence and attendance contribute to the CSR performance review. In some of the centers there were direct financial rewards as part of the compensation package. Additional compensation based on performance specifically tied to attendance and adherence should be available for performance greater than the standard. For example, if the CSRs can accrue one sick day per month and the adherence goal is 94%, the CSR would be eligible for this compensation with less than 3 sick days and greater than 96% adherence. (These numbers are for illustrative purposes only. They will vary depending upon your center's specific operational goals.)

Reward and recognition programs are critical to the call center's ability to meet the customer and enterprise's increasing expectations for delivery of exceptional service.

The workforce team should be an active participant in the center's celebrations of success. The workforce metrics of attendance, adherence, and compliance should be integrated in the center operations reward and recognition celebrations.

WORKFORCE MANAGEMENT FEATURES

Forecasting

The WFM system accurately forecasts future contact center volumes and handling times over each time interval from historical contact patterns. Data can be weighted to give emphasis to recent history or create an equal average over several weeks. The system automatically applies daily, weekly, monthly, and other seasonal trends, and excludes data that is statistically unusual to deliver accurate forecasts.

Sophisticated mathematical models calculate staffing requirements for each contact type, according to the defined service level targets. Service level targets can vary by time of day (interval), by contact type or queue, and by site.

For multi-skilled contact centers, the system simulates ACD call routing rules so staffing requirements reflect efficiency gains from multi-skilled agents.

Planning is essential to effective management and sound decision making. The WFM system's planning functions extend your forward vision from months to years, automatically applying trends from historical performance. The best weeks, day and hours for training, or critical weeks when vacation time may need to be limited.

Analyze the effects of business changes using "what-if" scenarios to determine the impact on requirements and performance if service levels, growth rates, or other parameters are changed. If a new service or product line is expected to increase call handling time, the system can help you quickly find out whether your service level will be impacted.

Schedule Management

Powerful work rules build a solid foundation for the WFM system's scheduling processes. You define shift start and end times, minimum and maximum limits on consecutive days on or days off, how to schedule breaks, lunches and other activities, and the degrees of variability in a generated schedule. The WFM system builds schedules that maximize your efficiency and still fit your business environment, whether that environment consists of one site or many, uses standard or skill-based routing, and handles only calls or handles multiple contact channels, like calls, e-mail, and Web chats. Schedules can be unique from day to day, be copied from previous weeks, or rotate in custom patterns. The WFM system even allows you to span schedules over midnight and end-of-week boundaries, and accounts for overhead, weekend fairness and other parameters.

Assigned schedules are easily manipulated through the WFM's graphical schedule management screens. Intuitive icons clearly show each agent's assigned activity throughout the day. Activities can quickly be added, deleted, or rescheduled simply by

dragging and dropping their icons. Schedules can be sorted and filtered by start time, agent name, and other criteria in any combination. Specialized schedule management functions streamline routine tasks like schedule trades, and can even automatically find the best time to schedule meetings and training.

Adherence

The performance of a contact center depends on how well agents follow their scheduled activities. When agents are in adherence, the contact center's service level goals can be met, which increases customer satisfaction, and shrinkage is decreased, which reduces staffing costs. WFM's real-time and historical adherence features enable supervisors to easily monitor and analyze agent activity, based on comparison between an agent's scheduled activity and the agent's actual activity, as determined from login and logout codes from ACDs, e-mail servers, and other contact routing systems.

Historical Adherence

This feature provides comprehensive agent adherence reports for past days, comparing scheduled activity to actual activity as reported by the ACD.

Historical Adherence presents information, on screen or printable documents of how well individual agents and groups of agents follow their schedules.

Adherence reports include a summary of scheduled time, available time, and times and percentages in adherence. In addition to reporting an individual agent's adherence for individual days, Historical Adherence can summarize data for groups of agents and ranges of days, which can help supervisors track agent performance over time, and help managers track how successful supervisors are at keeping their teams motivated.

Reports can be generated for only the agents whose deviation in a given activity exceeded a specified threshold value, to allow supervisors to document or review performance only of the agents who are most in need of management attention. Since the activity data is actually stored precisely as reported by the ACD, thresholds may be adjusted so that different report generations use different variance values.

Real-Time Adherence

Real-Time Adherence provides an at-a-glance real-time view of each agent's activity in real time and compares current actual activity to scheduled activities using a real-time data stream from the ACD. It gives managers the information they need to work with individual agents to help them better adhere to their schedules, which makes overall staffing plans more effective.

Easily readable desktop windows show how many minutes early or late an agent logs on, when the agent logs out, and when the agent is on break or otherwise unavailable. Status bar or icons constantly present the number of agents scheduled to the number actually logged in and signals when an agent has spent more than a specified amount of time in any predetermined activity.

Multiple Location Routing (Virtual Center Routing)

The multi-site WFM scheduling feature must take into account networking and call distribution plans across the multiple sites. This call distribution will have significant impact on skills and schedules at each site.

Many systems are now able to be integrated with the intelligent call routing systems in place for multiple site enterprises.

The multiple site feature can be used as a single point for viewing information and monitoring performance across a multi-site network. It also allows for decision-making at individual sites. Managers can view site information on either a consolidated or an independent basis.

For businesses operating multiple contact center sites:

- Allocate incoming contacts on a percentage basis across multiple sites
- Calculate staff requirements based on network wide volume forecasts
- Base schedules on global staffing requirements
- Use skills-based routing across multiple sites

Intra-Day Management

The WFM systems typically include real-time tools to track performance and adapt to changing conditions throughout the day in the contact center. The software also records exceptions as they become known and continually tracks performance. The daily forecast is continuously updated as new data is received, providing a forecast of your ability to meet your service targets in upcoming intervals.

This allows management to take advantage of unexpected overstaffing by assigning offline work to extra agents or releasing excess CSRs, or react to unexpected understaffing by canceling meetings or calling in reserve agents.

Skills

Skills in WFM replicates and harnesses the power of today's advanced skills-based routing ACDs—and is designed to manage single and multiple-site call centers.

This feature in WFM:

- Accurately simulates agent skills, network routing and ACD skills-based routing.
- Automatically creates effective forecasts and schedules for multiple call types to meet goals for service level and agent occupancy.
- Calculate agent availability and multi-skill efficiency to measure the impact of changes on skill assignments and call delivery.

- Easily evaluates the efficiency of skill assignments and the rules controlling call routing.
- Responds to changes in staffing or call volumes using sophisticated analysis tools to pinpoint corrective action.

CSR Self-Service

The self-service features of WFM make managing simpler and are an effective component in a strategy to improve employee satisfaction by enabling call centers to:

- Automate complex and time-consuming schedule changes
- Empower agents to manage their own schedules
- Improve communications between agents and supervisors
- Free supervisors from the manual change notification process
- Increase employee morale and reduce costly agent turnover empowering CSRs to control their own schedules and to give them easy access to information regarding their work life

Many of the WFM systems automate the complicated management of agent schedules and at the same time serve the scheduling needs of contact center agents. It allows employees to make changes to their schedules within parameters that contact center managers control. The research we completed demonstrated significant time saving for front line supervisors.

CSRs can make schedule requests on-line from intranet or internet. Some systems provide access via IVR/VRU from telephones, or mobile phones. The requests go into a queue, where they are processed. The system confirms, denies, wait-lists or alerts a defined supervisor. Each request response is based on rules that contact center managers define. Managers can override results when and if necessary.

Agents can view both the team/center's available vacation dates and their own schedules, making it easy for them to balance work requirements and private commitments.

Additionally, some systems provide complete self-service for CSRs allowing them to see schedules and other performance data such as, adherence stats and other performance data.

Multimedia Agent Scheduling

The successful scheduling of multimedia (typically, voice call, chat and e-mail) agents is complex. There are a number of issues. The following list includes just some of the issues which need to be carefully considered.

- The skills required by an agent to successfully handle a customer interaction are dependent on the type of media used. Written communication skills are important for e-mail and chat contacts, verbal communication for traditional and

IP based voice contacts. Specifying the appropriate skill set for each contact type and identifying the skill set(s) your agents possess allow these dependencies to be taken into account when generating schedules.

- Accurate data is even more critical.
- The type of media, being scheduled.
- Available contact center technology features.
- Queue or media type service level requirement are quite different:

  o Calls and chats require immediate response and if response time is not adequate, the call or chat abandons.

  o E-mail response can be deferred for some period of time while calls or chats are handled. However, they do not abandon they become a backlog of work.

  o If the chat or e-mail is not handled in a perceived acceptable time, this delayed interaction often results in additional contacts from the "caller." For example, the caller starts a chat, a response is not received in the perceived acceptable time, it is highly probable the failed chat session will generate a call to the center. This scenario holds true for slow response with e-mails also.
- Deferrable work, i.e., e-mail allows much greater flexibility of scheduling.
- Cost differences of the media contacts are significant. The Gartner Group estimates the cost of an Internet contact, i.e., e-mail or chat session is less than $3.50. And in a highly automated response environment the cost can be less than $1.00 per contact. Whereas, a voice call—speaking with a live agent, averages around $5.00.

Centers which are adding multiple contact channels to their center typically start this learning process with serious analysis of the center goals and current operational strengths and weaknesses. There are four basic approaches to serving multiple contact channels.

1. Isolated, dedicated groups handling specific channels, i.e., e-mail and chat team versus the team handling the calls.
2. Block of time scheduling. The CSR may be multi-skilled, but for assigned periods of time, is handling a single specific contact type. For example, on Monday from 8:00 a.m. to 11:00 a.m. and Friday from 12:00 p.m. to 4:30 p.m. this CSR handles e-mail. The Tuesday shift this CSR does call backs for the entire shift. All other scheduled times, this CSR takes inbound voice calls.
3. Blended CSR skill scheduling. This is the "universal" agent model, which says that all CSRs can handle any call type from any channel type.
4. A combination of all of the above.

Each of these approaches to multiple channel and multi-skill scheduling brings different economies of scale savings, but also additional levels of complexity to the workforce management process.

The order listed above is typically the order of adoption in the implementation of multiple channels in a multiple skill center. As a center progresses through this evolution, there are significant opportunities and challenges.

When looking at these opportunities and challenges here are some issues to be thinking about:

- Where are the economies of scale?
- Does the universal CSR model does not always bring the lowest cost?
- What happens to training cost?
- What is the impact on quality and accuracy.
- Are there changes in handle time when all CSRs handle all call types?
- Does service level improve because you now have more CSRs available to handle each call type?
- Will the staff savings offset the cost of more advanced technologies?
- How will this impact CSR job satisfaction?
- What level of complexity will this add to the process of workforce management?

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GLOSSARY OF TERMS

Abandoned Call: Also called a Lost Call. The caller hangs up before reaching an agent.

Adherence To Schedule: A general term that refers to how well agents adhere to their schedules. Begin availability on schedule, break on schedule, return from break on schedule, etc., and end on schedule. Typically stated as a percentage in the 93% to 98% range as the goal.

After-Call Work (ACW): Also called Wrap-up and Post Call Processing (PCP). Work that is necessitated by and immediately follows an inbound transaction. Often includes entering data, filling out forms and making outbound calls necessary to complete the transaction. The agent is unavailable to receive another inbound call while in this mode.

Agent Group: Also called Split, Gate, Queue or Skills Group. A collection of agents that share a common set of skills, such as being able to handle customer complaints.

Agent Out Call: An outbound call placed by an agent.

Agent Status: The mode an agent is in (Talk Time, After-Call Work, Unavailable, etc.).

Algorithm: A step-by-step problem-solving procedure, especially an established, recursive computational procedure for solving a problem in a finite number of steps.

Associate Preferences: This method of schedule determination is done in most WFM software packages and relies on a set of constraints applied at the individual associate profile level. In the associate definition screen, preferences on scheduling variables can be used to determine an associate's final schedule makeup by noting preferred shift start times, shift duration, break preferences, lunch time preferences, etc.

Automatic Call Distributor (ACD): The specialized telephone system used in incoming contact centers. It is a programmable device that automatically answers calls, queues calls, distributes calls to agents, plays delay announcements to callers and provides real-time and historical reports on these activities. May be a stand-alone system, or ACD capability built into a CO, network or PBX.

Availability: Usually stated as a percentage of the total shift time. How much time they were available to take calls during their shifts, including the time spent handling calls and the time spent waiting for calls to arrive.

Available State: Agents who are signed on to the ACD and waiting for calls to arrive.

Available Time: The total time that an agent or agent group waited for calls to arrive, for a given time period.

Average Handle Time (AHT): The sum of Average Talk Time and Average After-Call Work for a specified time period.

Average Number of Agents: The average number of agents logged into a group for a specified time period.

Average Speed of Answer (ASA): The average delay of all calls. It is total delay divided by total number of calls.

Bidding: See shift bidding.

Call Blending: Combining traditionally separate inbound and outbound agent groups into one group of agents responsible for handling both inbound and outbound contacts. A system that is capable of call blending automatically puts agents who are making outbound calls into the inbound mode and vice versa, as necessitated by the incoming call load.

Compliance: Also referred to as Schedule Compliance or Schedule Conformance. Measures the amount of time in scheduled activities as compared to the scheduled time.

Customer Service Representative (CSR): The person who handles incoming or outgoing calls. Also referred to as telephone sales or service representative (TSR), rep, agent, consultant, engineer, operator, technician, account executive, team member, customer service professional, staff member, attendant and specialist.

Erlang B: A formula developed by A.K. Erlang, widely used to determine the number of trunks required to handle a known calling load during a one hour period. The formula assumes that if callers get busy signals, they go away forever, never to retry. Since some callers retry, Erlang B can underestimate trunks required. However, Erlang B is generally accurate in situations with few busy signals.

Erlang C: Calculates predicted waiting times (delay) based on three things: the number of servers (reps); the number of people waiting to be served (callers); and the average amount of time it takes to serve each person. It can also predict the resources required to keep waiting times within targeted limits. Erlang C assumes no lost calls or busy signals, so it has a tendency to overestimate staff required.

Erlang, A.K.: A Danish engineer who worked for the Copenhagen Telephone Company in the early 1900s and developed Erlang B, Erlang C and other telephone traffic engineering formulas.

Erlang: One hour of telephone traffic in an hour of time. For example, if circuits carry 120 minutes of traffic in an hour, that's two Erlangs.

Fixed scheduling: The limitation of all schedule variables to produce a predetermined list of shifts that are assigned to the associate staff as demanded. Fixed schedules rarely, if ever change.

Flexible scheduling: This schedule type requires that at least one factor used to determine scheduling outcomes is variable. Flexible schedules can have an optional outcome with regard to a single or even multiple schedule elements including shift lengths, break placement in each shift, total hours scheduled or shift start and stop times. Flexible schedules may include items that vary on a day-to-day basis, or may only include variation at the time of each generation of schedules (i.e., weekly, bi-weekly, quarterly).

Full-Time Equivalent (FTE): A term used in scheduling and budgeting, whereby the number of scheduled hours is divided by the hours in a full workweek. The hours of several part time agents may add up to one FTE.

Grade of Service: The probability that a call will not be connected to a system because all trunks are busy. Grade of service is often expressed as "p.01" meaning 1% of calls will be "blocked." Sometimes, grade of service is used interchangeably with service level, but the two terms have different meanings. See Service Level.

Handled Calls: The number of calls received and handled by agents or peripheral equipment. Handled calls does not include calls that abandon or receive busy signals.

Handling Time: The time an agent spends in Talk Time and After-Call Work, handling a transaction. Handling Time can also refer to the time it takes for a machine to process a transaction.

Logged On: A state in which agents have signed on to a system (made their presence known), but may or may not be ready to receive calls.

Next Available Agent: A call distribution method that sends calls to the next agent who becomes available. The method seeks to maintain an equal load across skill groups or services. When there is no queue, Next Available Agent reverts to Longest Available Agent.

Occupancy: Also referred to as agent utilization. The percentage of time agents handle calls versus wait for calls to arrive. For a half-hour, the calculation is: (call volume x average handling time in seconds) / (number of agents x 1800 seconds). See Adherence to Schedule.

Overflow: Calls that flow from one group or site to another. More specifically, intraflow happens when calls flow between agent groups and Interflow is when calls flow out of the ACD to another site.

PBX/ACD: A PBX that is equipped with ACD functionality.

Peaked Call Arrival: A surge of traffic beyond random variation. It is a spike within a short period of time.

Percent Utilization: See Occupancy.

Predictive Dialing: A system that automatically places outbound calls and delivers answered calls to agents. It puts the number back in queue when the dialer detects busy signals, answering machines or ring no answer.

Preference Scheduling: Preference scheduling allows agents to rank their shift preferences, including desired start time, end time, lunch time, number of days to work, days off, and more. The system automatically assigns each agent to the schedule that best meets their preferences, automatically accounting for seniority or other ranking criteria. Through preference scheduling, your contact center gains maximum flexibility to meet changing needs while increasing agent satisfaction with their schedules.

Quantitative Forecasting: Using statistical techniques to forecast future events. The major categories of quantitative forecasting include Time Series and Explanatory approaches. Time Series techniques use past trends to forecast future events. Explanatory techniques attempt to reveal linkages between two or more variables.

Queue: Holds callers until an agent becomes available. Queue can also refer to a line or list of items in a system waiting to be processed (e.g., e-mail messages).

Random Call Arrival: The normal, random variation in how incoming calls arrive. See Peaked Call Arrival.

Real-Time Adherence Software: Software that tracks how closely agents conform to their schedules. See Adherence to Schedule.

Real-Time Data: Information on current conditions. Some "real-time" information is real-time in the strictest sense (e.g., calls in queue and current longest wait). Some real-time reports require some history (e.g. the last x calls or x minutes) in order to make a calculation (e.g., Service Level and Average Speed of Answer).

Real-Time Management: Making adjustments to staffing and thresholds in the systems and network, in response to current queue conditions.

Received Calls: A call detected and seized by a trunk. Received calls will either abandon or be answered by an agent.

Response Time: The time it takes the call center to respond to transactions that do not have to be handled when they arrive (e.g., correspondence or e-mail). See Service Level.

Retrial Tables: Sometimes used to calculate trunks and other system resources required. They assume that some callers will make additional attempts to reach the call center if they get busy signals. **Retrial**: A caller who "retries" when they get a busy signal.

Rostered Staff Factor (RSF): Alternatively called an Overlay, Shrink Factor or Shrinkage. RSF is a numerical factor that leads to the minimum staff needed on schedule over and above base staff required to achieve your service level and response time objectives. It is calculated after base staffing is determined and before schedules are organized, and accounts for things like breaks, absenteeism and ongoing training.

Schedule Bidding: See shift bidding.

Schedule Compliance or Schedule Conformance: Measures the amount of time in scheduled activities as compared to the scheduled time.

Schedule Efficiency: The art and science of having the right number of people, at the right time in their seats, to answer an accurately forecasted volume of incoming calls at the planned service level.

Scheduling Exception: When an agent is involved in an activity outside of the normal, planned schedule.

Service Level: Also called Telephone Service Factor, or TSF. The percentage of incoming calls that are answered within a specified threshold: "X% of calls answered in Y seconds." See Response Time.

Shift Bidding. Shift bidding allows agents to select their shifts from generated schedules, according to the work and bidding rules you specify. Bidding can be managed by seniority or other ranking criteria, by work team, and by full-time, part-time or other schedule type. Once bidding is complete, the assigned schedules can be applied to future weeks, until the next scheduled bidding cycle. Ideal for contact center environments where contact volumes are more predictable, schedule bidding allows agents maximum choice and predictability for their time at work.

Shrink Factor: See Rostered Staff Factor.

Skill Group: See Agent Group.

Skill-Based Routing: An ACD capability that matches a caller's specific needs with an agent that has the skills to handle that call, on a real-time basis.

Smooth Call Arrival: Calls that arrive evenly across a period of time. Virtually non-existent in incoming call center environments.

Split: See Agent Group.

Supervisor: The person who has front-line responsibility for a group of agents. Typical ratios are one supervisor to every 10-15 agents. However, help desks can have one supervisor for every five people, and some reservations centers have one supervisor for every 30 or 40 agents. Generally, supervisors are equipped with special telephones and computer terminals that enable them to monitor agent activities.

Talk Time: The time an agent spends with a caller during a transaction. Includes everything from "hello" to "goodbye."

True Calls Per Hour: Actual calls an individual or group handled divided by occupancy for that period of time.

Unavailable Work State: An agent work state used to identify a mode not associated with handling telephone calls.

Universal Agent: Refers to either: A) An agent who can handle all types of incoming calls or B) An agent who can handle both inbound and outbound calls.

Workforce Management Software: Software systems that, depending on available modules, forecast call load, calculate staff requirements, organize schedules, and track real-time performance of individuals and groups.

Workforce Optimization: Workforce Optimization includes, but is not limited to, the use of WFM software solutions. Workforce Optimization goes far beyond systematic generation of forecasts and schedules. In short, it is the cultural adoption of the principles which underlie the WFM discipline with the added layers of CSR empowerment and analytics.

Workload: Often used interchangeably with Call Load. Workload can also refer to non-call activities.

Appendix A: Workforce Management One-Minute™ Survey Results

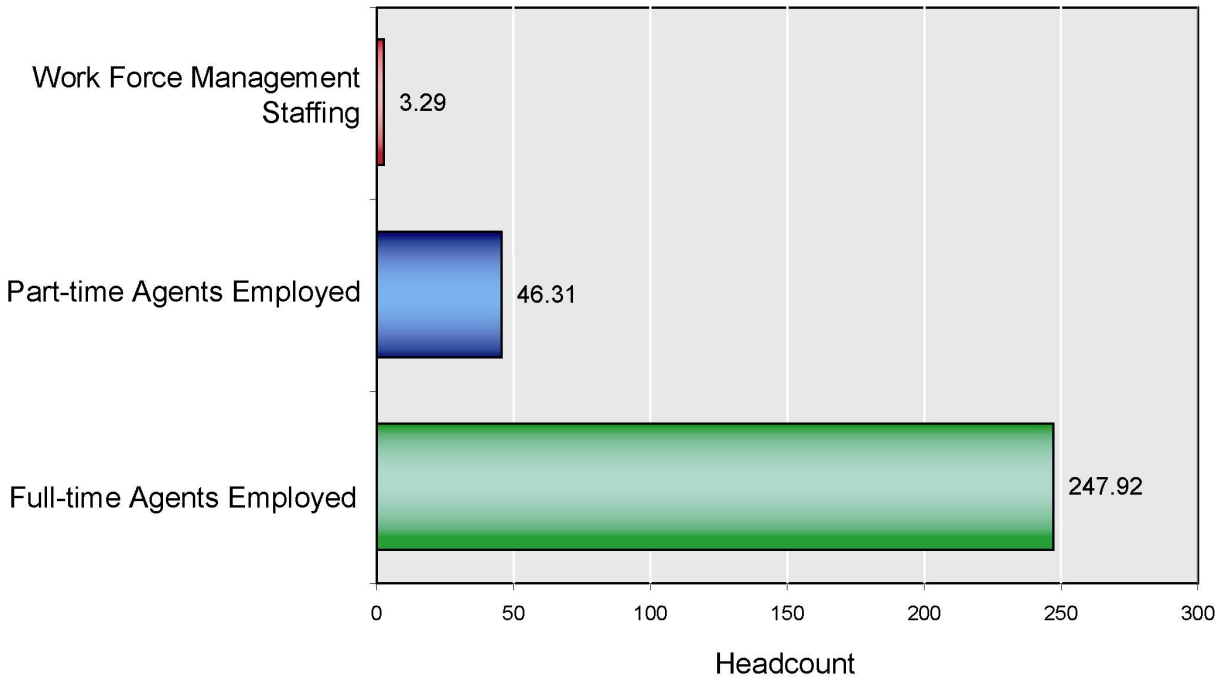
Introduction

The survey results presented in the following pages are the result of responses to BenchmarkPortal's One-Minute Survey™, sent in October 2003 to 5073 call centers across 29 industry sectors that are part of the BenchmarkPortal/Purdue University International Benchmarking Community. There were 366 responses to this survey questionnaire, indicating a 7.2% response rate.

Survey Questions

For the survey, we asked call center managers to offer their view of WFM systems in use within their call center.

Survey Respondent Profiles



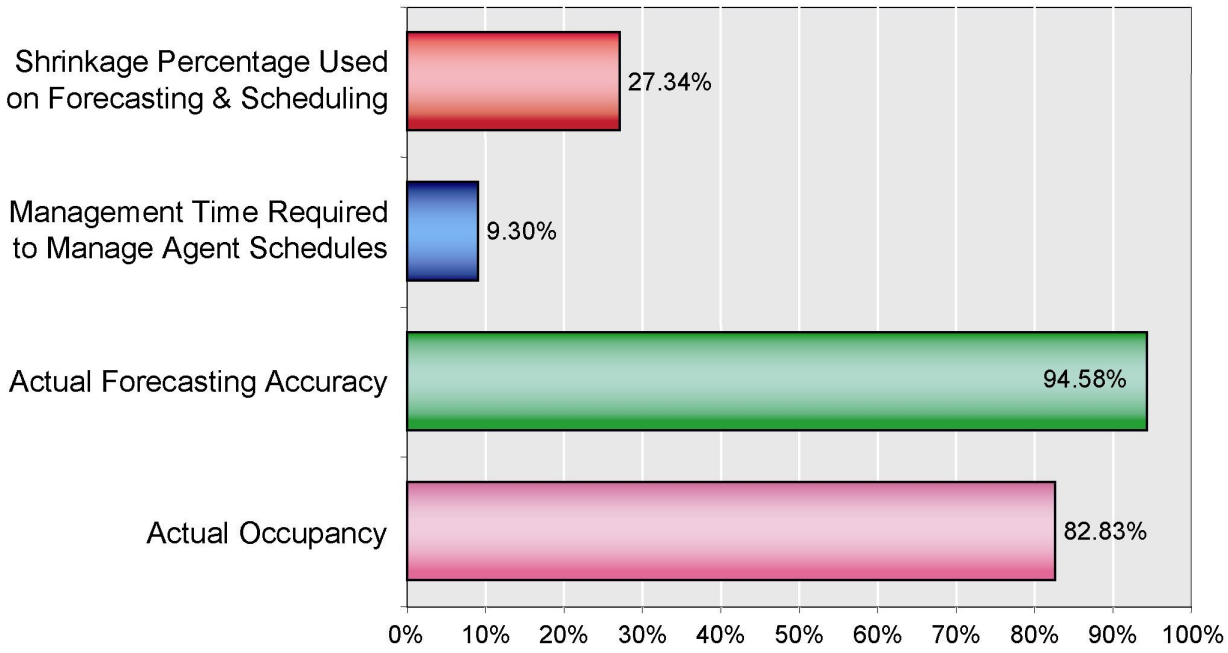
Question 1: Please provide the following demographic information:

- How many on your workforce management staff?
- How many part-time CSRs do you employ?
- How many full-time CSRs do you employ?

Finding: The average CSR staffing of the call centers represented by the survey respondents is about 271 full-time-equivalent (FTE) CSRs.

Interpretation: The average ratio of WFM staff to CSR staffing to is 1.1 to 100.

Key Performance Indicators for WFM



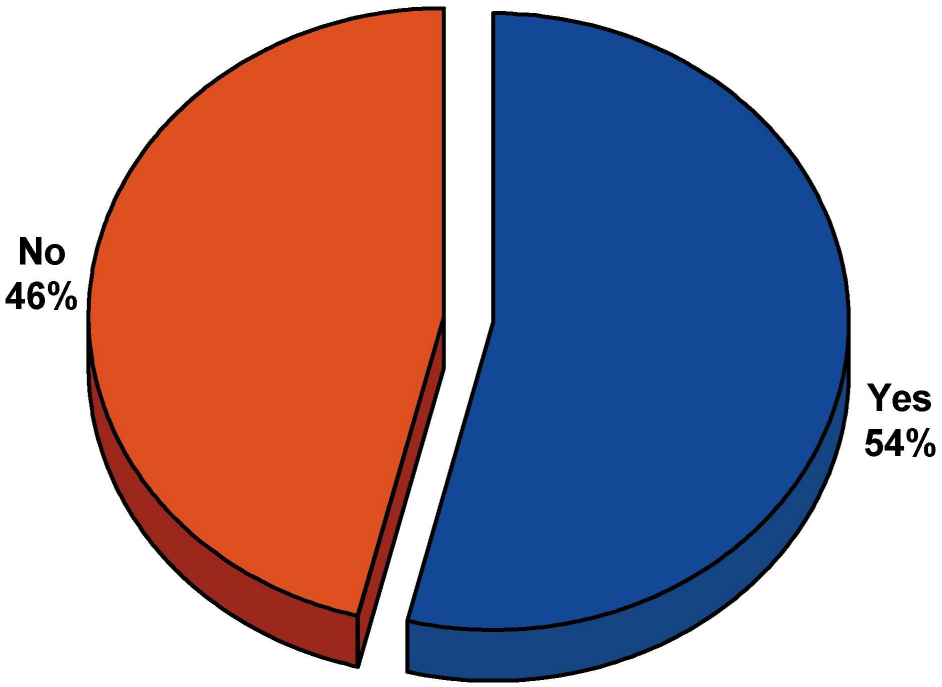
Question 2: Please give your best estimates of the following:

- What is your actual percent occupancy?
- What is your actual percent of accuracy on forecasts?
- What percent of Supervisor/Manager time is required to manage CSR schedules?
- What percent Shrinkage do you use on forecasting & scheduling?

Finding: These averages represent a cross-section of these metrics for call centers across all industries, with and without a WFM system, as depicted in the figure on the next page.

Interpretation: The metrics above are the principal factors for which a WFM system is expected to have a favorable impact.

Have You Implemented a System for WFM for Your Call Center Within the Past 5 Years?

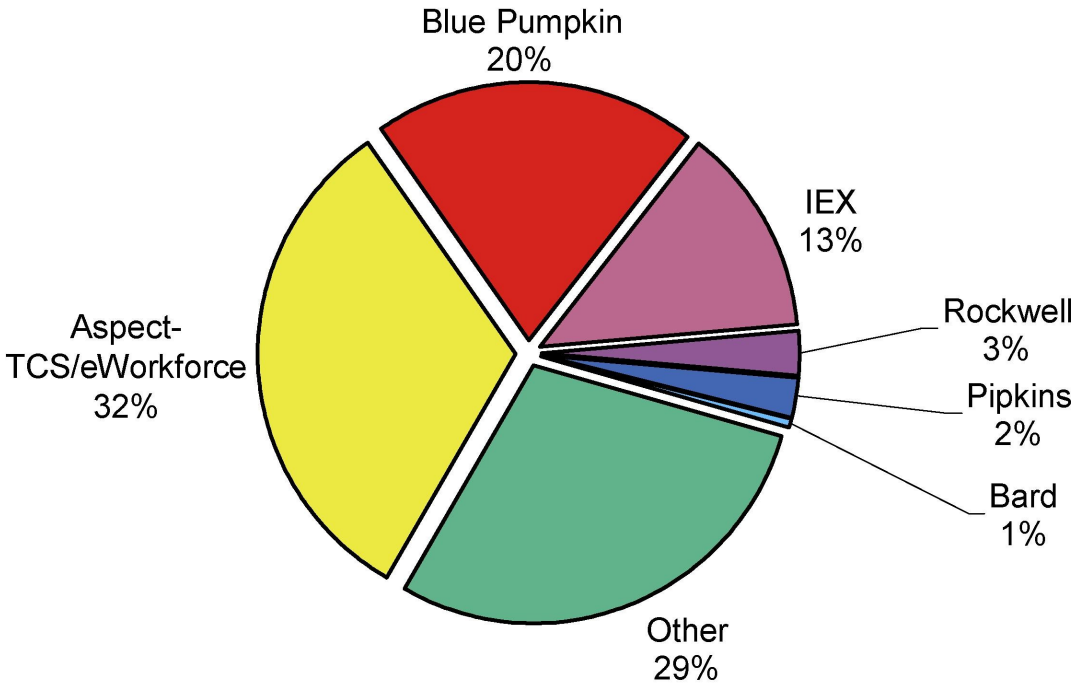


Question 3: Have you implemented a system for workforce management for your call center in the past 5 years?

Finding: Slightly less than half of the call centers surveyed have an up-to-date WFM system.

Interpretation: With call center management under increasing pressure to deliver optimal customer service within an ever-tightening budget, WFM systems offer a means of better forecasting, CSR scheduling, and time-management to meet these goals.

From Which of the Following Vendors Did You Purchase the WFM System?

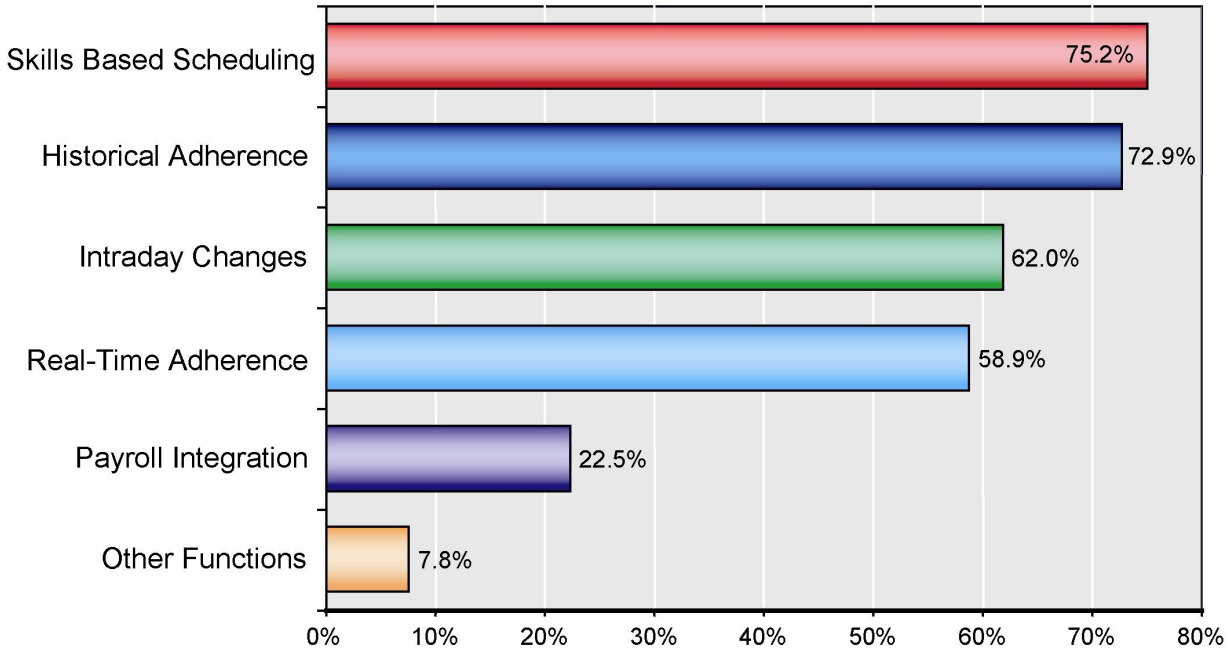


Question 4: From which of the following vendors did you purchase the WFM system?

Finding: Of the "Other" responses, about one-half reported that they have built and implemented their own WFM system. The top three WFM systems in use are Aspect-TCS, Blue Pumpkin, and IEX.

Interpretation: Although the responses to this survey question indicate the percentage of the commercial WFM system in use by the respondents, there is no intent to compare the systems' features, effectiveness, and quality, nor to imply that any system is rated higher than another.

Which of the Following Functions Are Your Able To Perform With Your System?

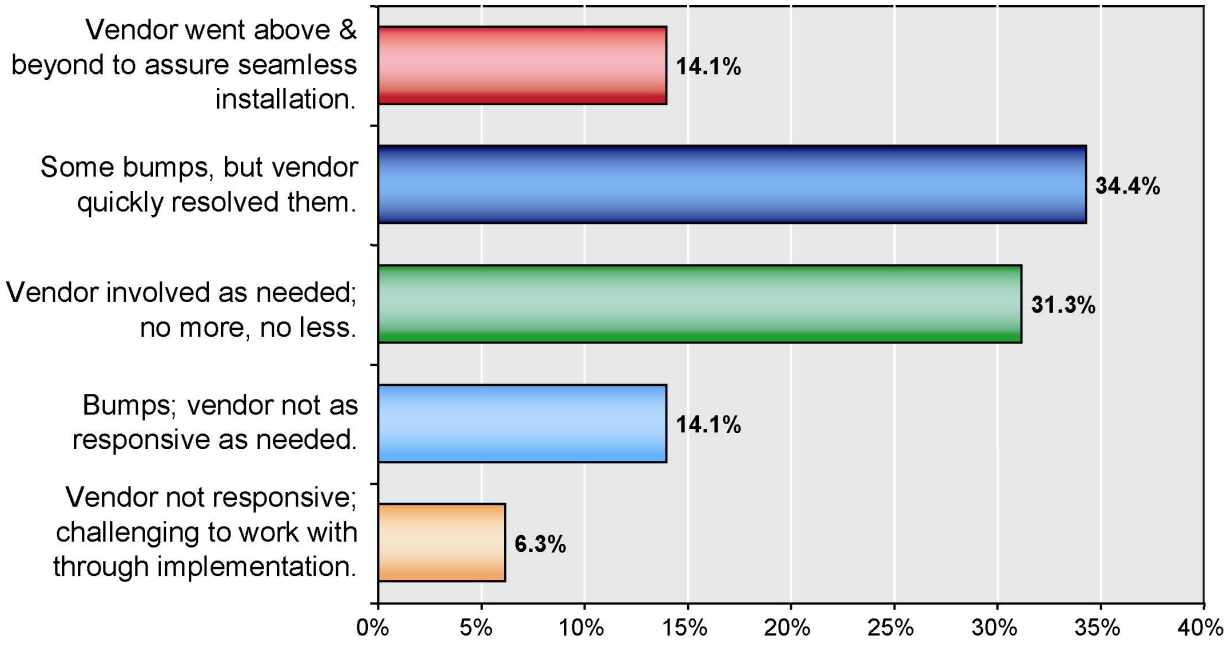


Question 5: Which of the following functions are you able to perform with your system? (Please select all that apply.)

Finding: About three-quarters of all WFM systems surveyed enable basic Skills Based forecasting and scheduling, and Historical Adherence tracking and monitoring.

Interpretation: The more advanced systems offer Intra-day scheduling, real-time adherence monitoring, and payroll integration. Also mentioned in the "Other" category are vacation planning and scheduling, and multi-media forecasting.

Overall Experience with Vendor During Installation of the WFM system

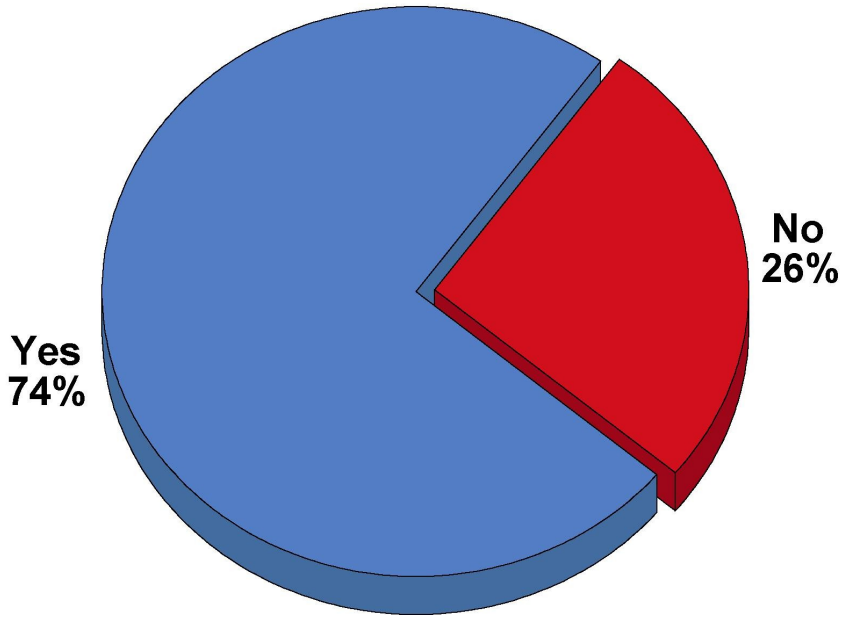


Question 6: Please describe your overall experience with the vendor during installation of the WFM system?

Finding: 48.5% of the respondents surveyed indicated a positive experience with their vendor during installation of the WFM system, with one-out-of-seven reporting that their vendor went above-and-beyond to make certain that the installation was seamless.

Interpretation: While most respondents were satisfied with their vendor, one-fifth reported a negative experience with their vendor during their WFM implementation, and one out of eighteen reported that their vendor was not responsive and was challenging to work with.

After the Installation, Have You Had Any Issues That You've Needed to Get the Vendor Involved In?

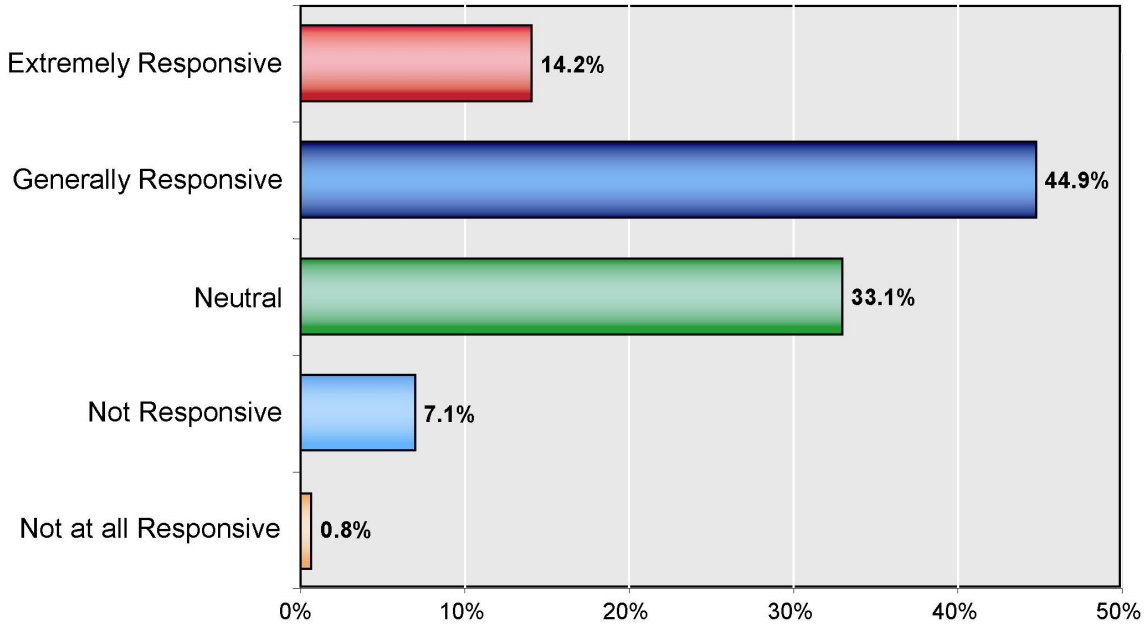


Question 7: After the installation, have you had any issues that you've needed to get the vendor involved in?

Finding: Nearly three-quarters of the survey respondents indicated that they had issues after installation of their WFM system that required vendor involvement.

Interpretation: Without knowing the specific nature of the "after installation" issues, we cannot determine which of their issues could have been averted with a more seamless installation on the part of the vendor. However, it can be determined that even those who reported they were satisfied with the installation in Question 6, experienced issues following installation that required the vendor's involvement. It is also reasonable to infer that some of those issues resulted from a less-than-seamless installation, and could have been avoided.

How Would You Rate Your Vendor's "After Installation Technical Support?"

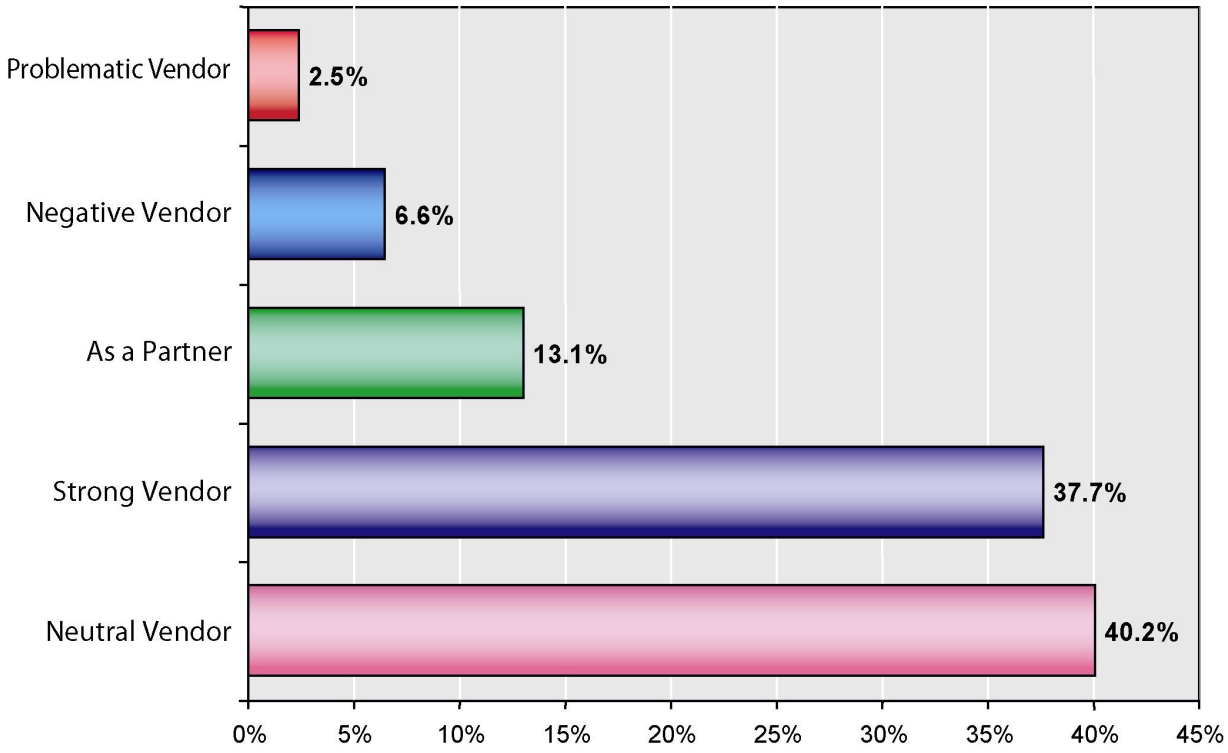


Question 8: How would you evaluate your vendor's "After Installation Technical Support?"

Finding: The percentage of respondents rating their vendor as "Extremely Responsive" is virtually identical to those reporting that their vendor "went above and beyond to assure a seamless installation" in question 6.

Interpretation: Almost 60% of the respondents felt that their vendor was responsive in providing after-installation technical support, with only 8% reporting that their vendor did not deliver responsive support.

View of WFM Vendor's Relationship Approach



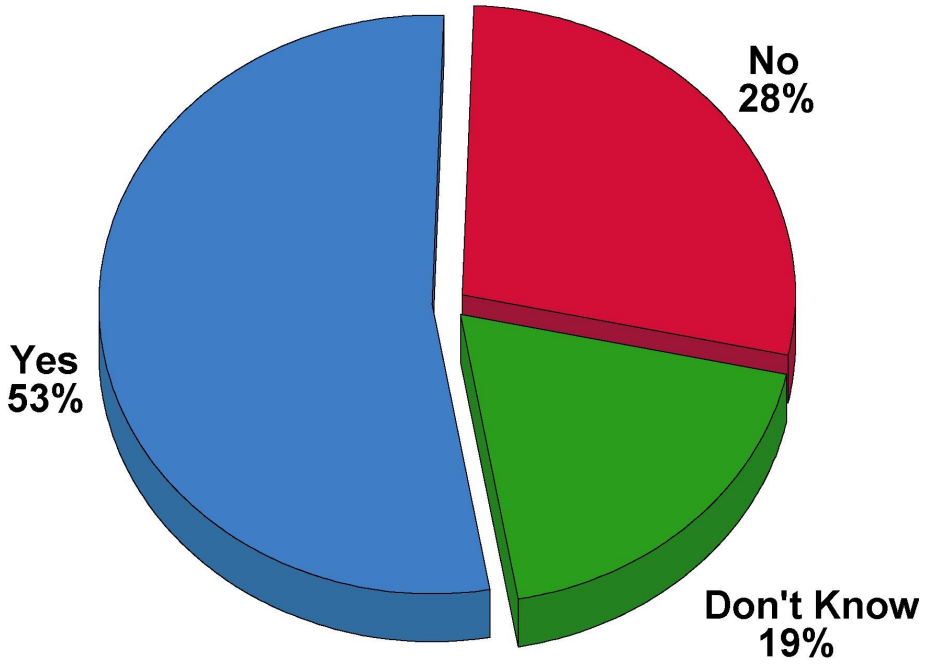
Question 9: Which of the following statements best describes your vendor's overall approach to their relationship with you:

- A Partner
- A Strong Vendor
- A Neutral Vendor
- A Negative Vendor
- A Problematic Vendor

Finding: 13.1% of the survey respondents indicated that their WFM system vendor regards their relationship as a partnership.

Interpretation: Over half of the survey respondents report a positive relationship with their WFM vendor, with another 40% indicating that they experience a neutral relationship with their vendor. However, one-out-of-eleven respondents responded that their vendor relationship is negative or problematic.

Was a ROI Used to Justify the WFM Purchase?

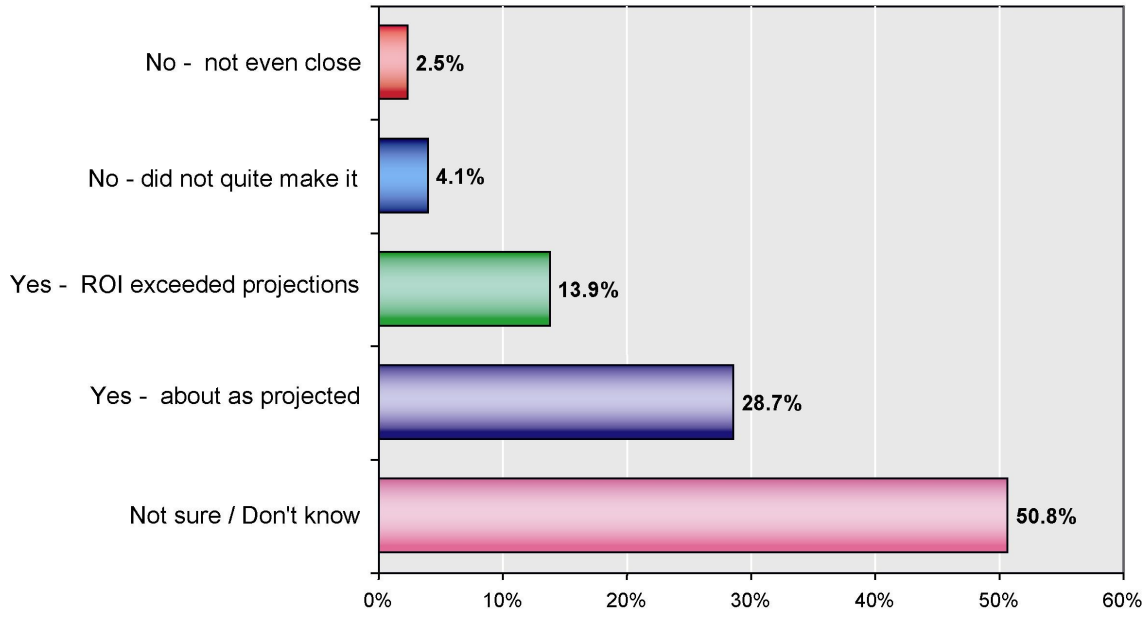


Question 10: Was a return-on-investment (ROI) used to justify the purchase??

Finding: Over half of the survey respondents reported that a return-on-investment (ROI) analysis was conducted to justify the purchase of their WFM system.

Interpretation: It was somewhat surprising to learn that over one-quarter of the companies implementing workforce management did not undertake ROI analysis prior to their purchase. One can only speculate about what their justification for such an investment might have been, and how they determined whether their investment produced the value they were expecting to receive.

Did You Achieve the Projected ROI?

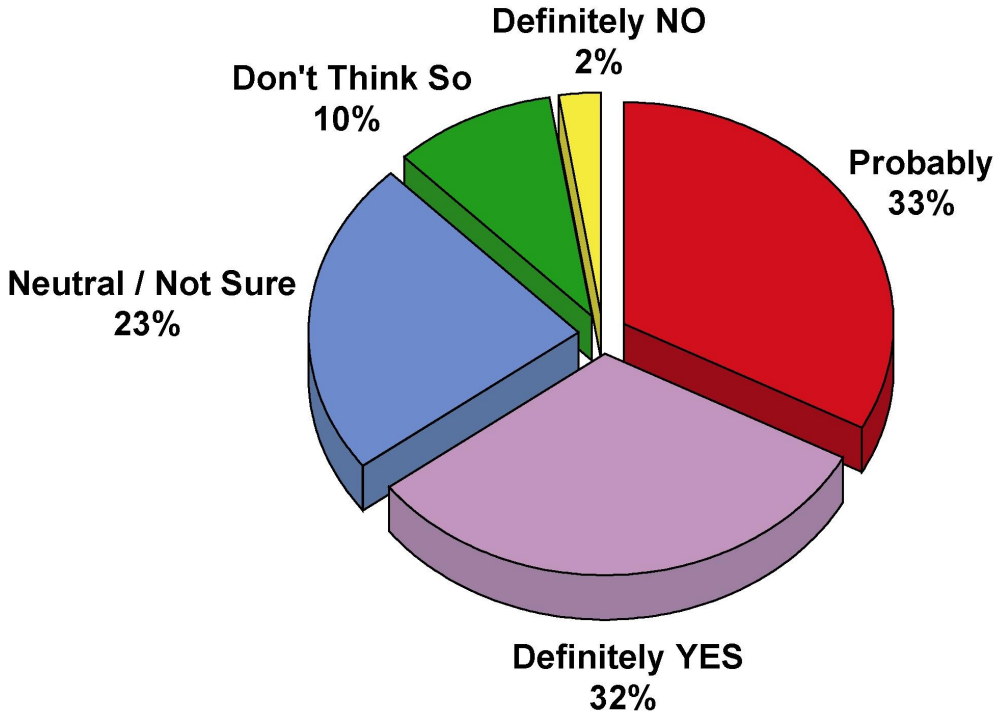


Question 11: Did you achieve the ROI you had projected for the WFM system you purchased?

Finding: Only 42.6% reported their investment met or exceeded their projected ROI. Over half of the survey respondents didn't know or were unsure whether their WFM system implementation met their ROI objectives.

Interpretation: By factoring the percentage of companies that conducted a ROI analysis (a 50.3% response to question 10) with the 42.6% who indicated that they had met or exceeded their ROI projections, we conclude that only about one-in-five companies represented in this survey that implemented a WFM system were able to report a positive return on their investment.

Would You Recommend the WFM system That You Purchased to Others?

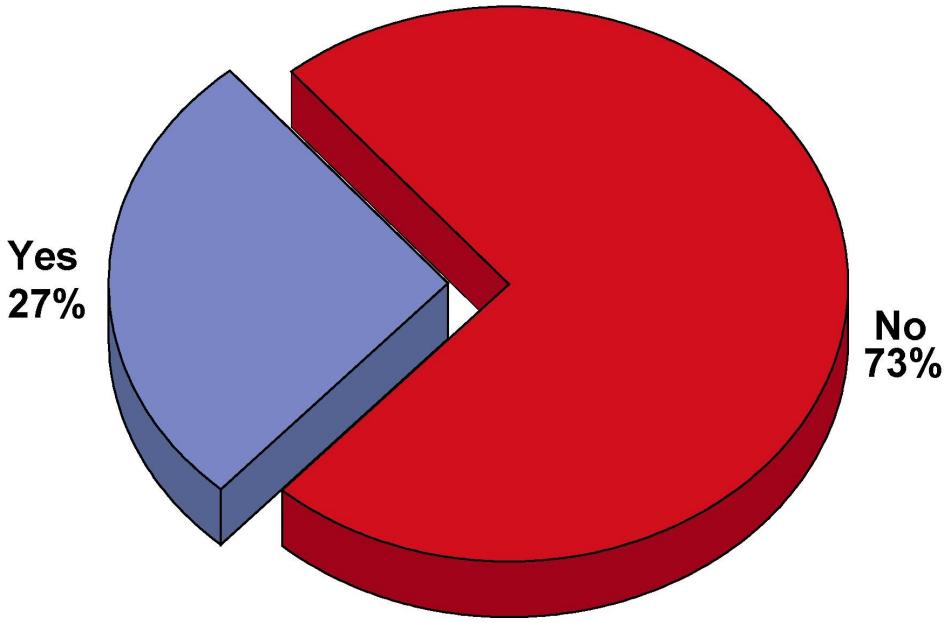


Question 12: Would you recommend the WFM system that you purchased to others?

Finding: Almost two-thirds of the survey respondents indicated that they would recommend the WFM system they purchased to others. One-in-eight respondents stated that they would not recommend the system to others.

Interpretation: We can infer that, with a clear majority of the survey respondents indicating they would recommend their system to others, most companies regard WFM systems as a valuable tool for any call center.

Are You Planning to Purchase a WFM System in the Next 12 Months?

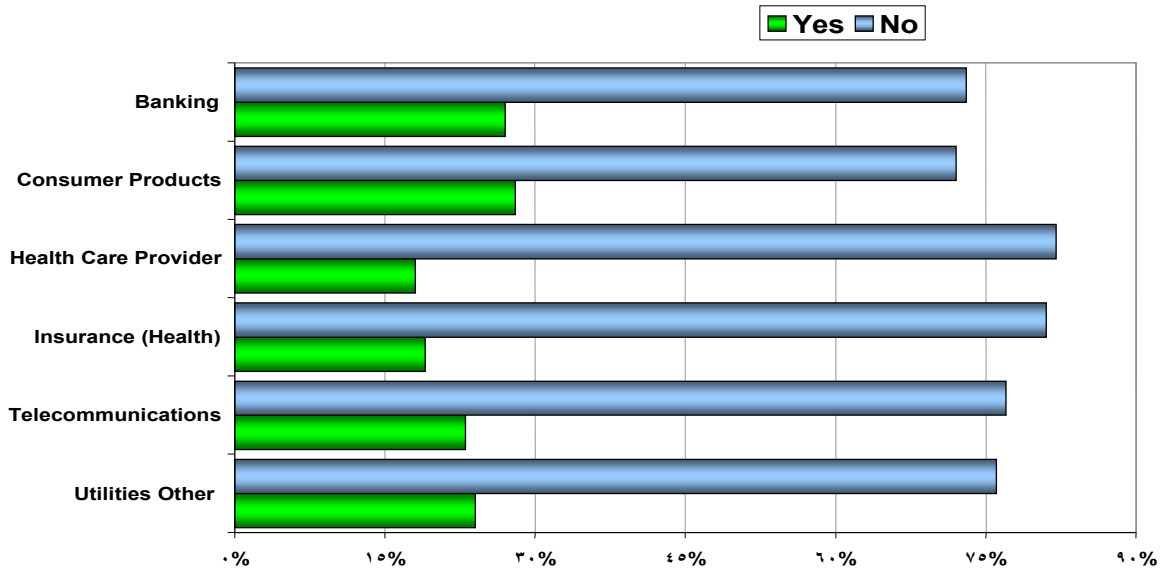


Question 13: Are you planning to purchase a WFM system in the next 12 months?

Finding: Only slightly more than one-quarter of the survey respondents indicated that they are planning to purchase a WFM system within the next year.

Interpretation: While this survey result may look low at first glance, it is actually quite encouraging. Given that two-thirds of the survey respondents who currently have WFM systems would recommend to others a WFM system (meaning that they probably do not intend to replace it with a new one in the next year), the actually percentage of survey respondents who plan to acquire a new WFM system or replace one that they currently have is much higher.

Are You Planning to Purchase a WFM System Within the Next 12 Months? (by Industry)

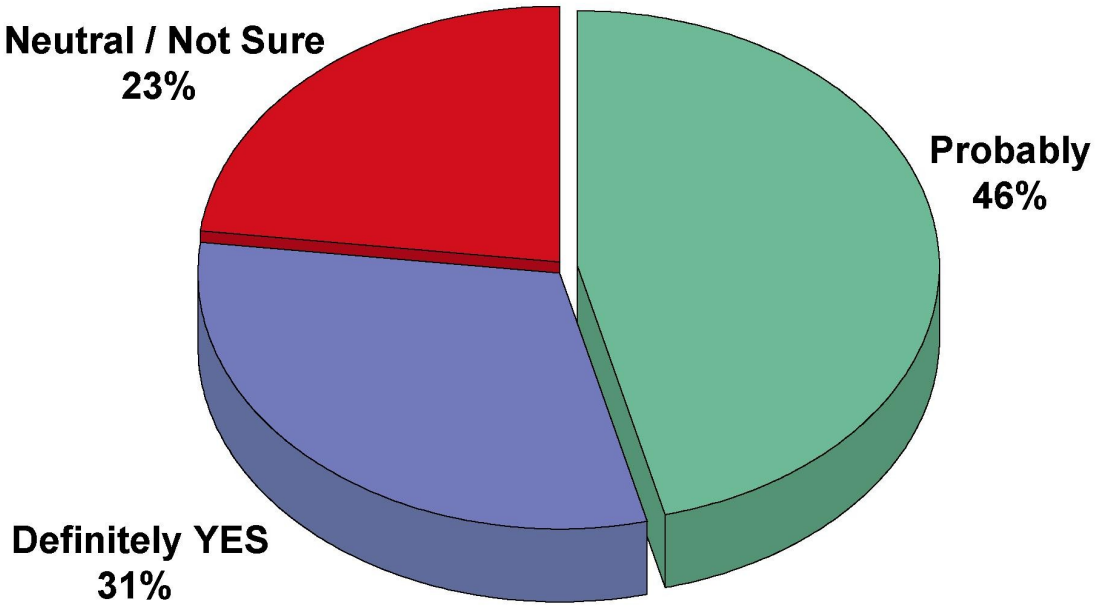


Question 13 (cont): The six top industries planning to purchase a WFM system in the next 12 months.

Finding: Of the top 5 industries represented by the survey participants, the Consumer Products Industry appears to be planning the most purchases of WFM systems within the next 12 months, followed closely by the Banking Industry. The average across all six industries shown is 23%.

Interpretation: With 23% of the call centers across the Industries represented above planning to purchase a WFM system within the next year, this statistic reflects broad market acceptance of this valuable tool.

Correlation of Survey Participants Whose Vendor Went "Above & Beyond" to Assure Seamless Installation with Their Willingness to Recommend the WFM System They Purchased to Others

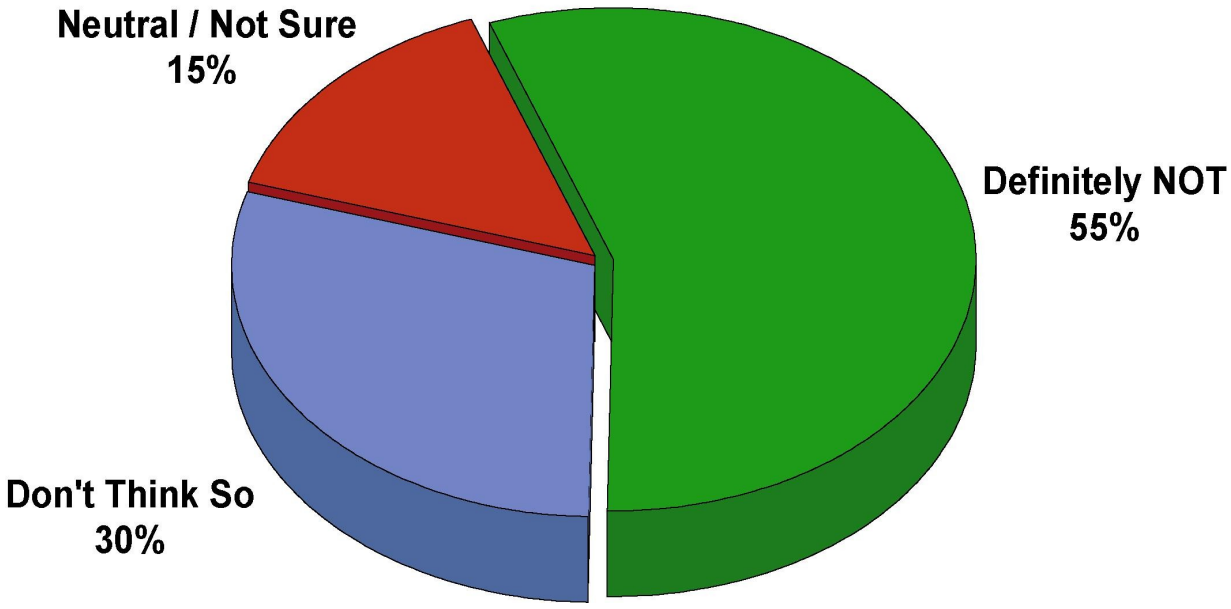


Question 14: Correlation of survey participants whose vendor went "Above & Beyond" to assure seamless installation (Question 6) with their willingness to recommend the WFM system they purchased to others (Question 12).

Finding: Almost one-third of the survey respondents whose vendor went "Above & Beyond" to assure seamless installation indicated that they are willing to recommend their system to others.

Interpretation: Satisfied customers make excellent references to influence other companies for their choice of vendors.

Correlation of Survey Participants Whose Vendor Was "Unresponsive" During Installation With Their Willingness to Recommend the WFM System They Purchased to Others

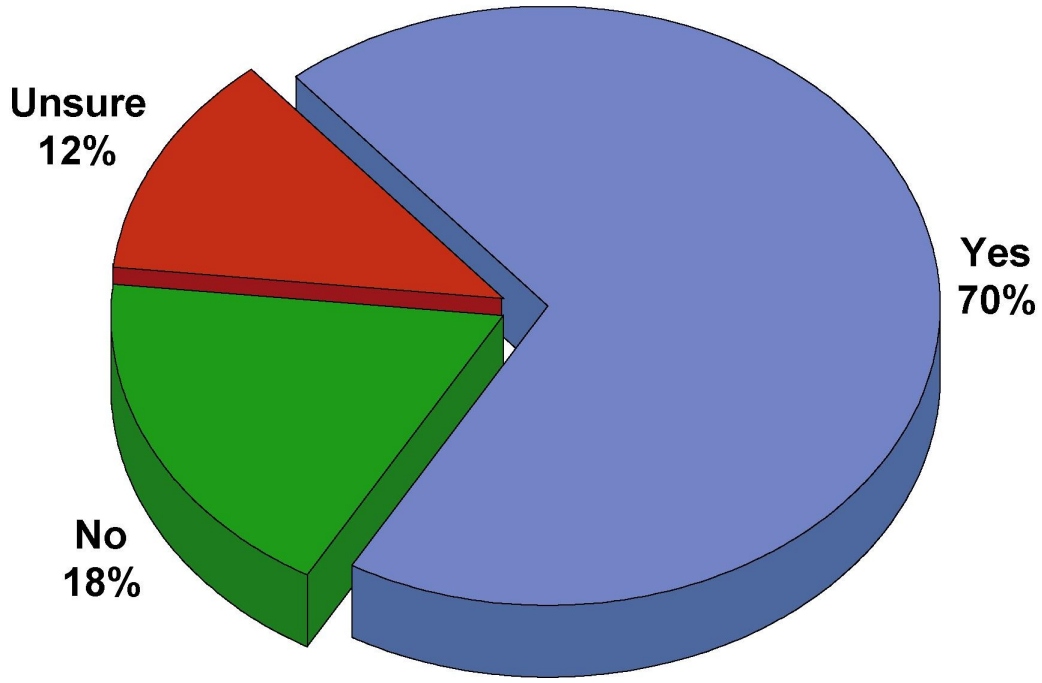


Question 15: Correlation of survey participants whose vendor was "Unresponsive" during installation (Question 6) with their willingness to recommend the WFM system they purchased to others (Question 12).

Finding: Eighty-five percent of participants unsatisfied with their vendor's responsiveness indicated that they would not recommend the WFM system they purchased to others.

Interpretation: Customer dissatisfaction is a powerful deterrent, and if not corrected, will ultimately cause many companies to fail, especially in such a highly competitive market such as this.

Correlation of Survey Participants Who Had Issues That Required Vendor Involvement With Their Willingness to Recommend the WFM System They Purchased to Others

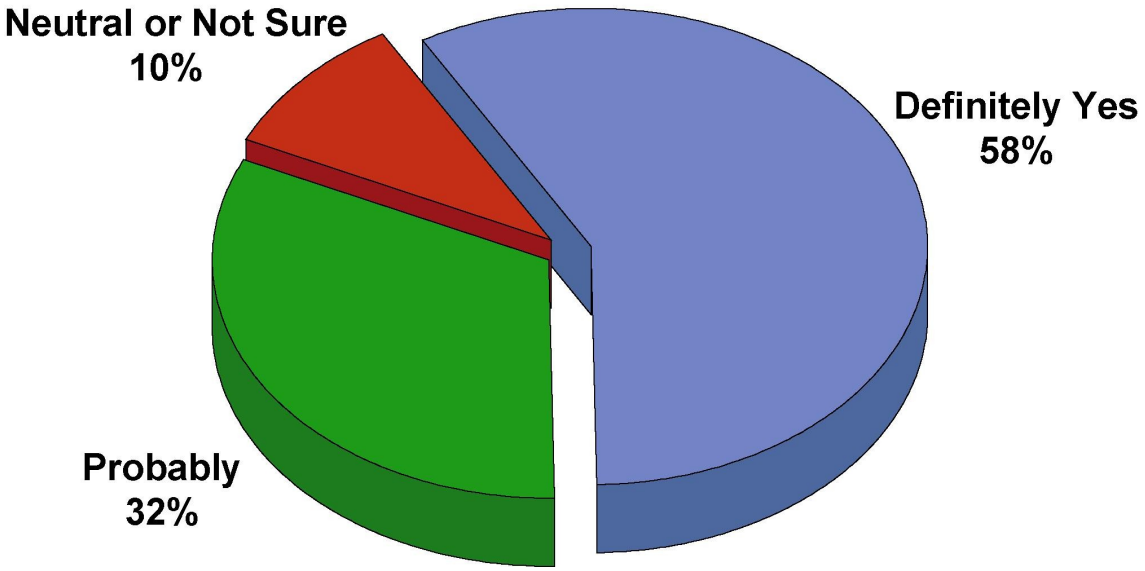


Question 16: Correlation of survey participants who had issues that required vendor involvement (Question 7) with their willingness to recommend the WFM system they purchased to others (Question 12).

Finding: Seven-out-of-ten participants indicated their willingness to recommend their WFM system to others.

Interpretation: It is not uncommon to find that you may require a vendor's involvement after installation of a new system, and most vendors recognize this situation as an opportunity to build a lasting relationship with their customers, a condition that this statistic appears to infer.

Correlation of Survey Participants Who Indicated That They Regarded Their Vendor's Approach "As a Partner" With Their Willingness to Recommend the WFM System They Purchased to Others.



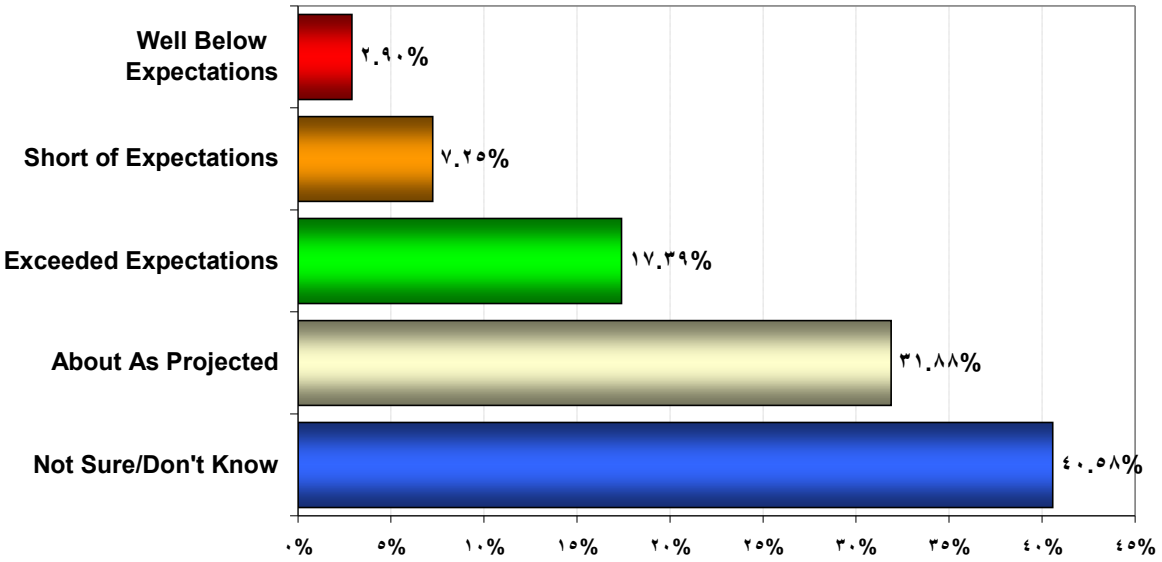
Question 17: Correlation of survey participants who indicated that they regarded their vendor's approach "As A Partner" (Question 9) with their willingness to recommend the WFM system they purchased to others (Question 12).

Finding: Nine-out-of-ten call centers represented by the survey responses indicated that they would recommend their WFM system to others because their vendor regarded them as a partner.

Interpretation: This correlation underlines that the closer the relationship is between a vendor and their customers, the higher the likelihood is that the customer will recommend the vendor to their friends and others.

Correlation of Survey Participants Who Indicated That They Used a ROI to Justify the Purchase With Whether They Achieved the ROI They Had Projected For the WFM System They Purchased

Correlation of survey participants who indicated that used an ROI to justify the purchase (Question ١٠) with whether they achieved the ROI they had projected for the work force solution they purchased (Question ١١).



Question 18: Correlation of survey participants who indicated they used an ROI to justify the purchase (Question 10) with whether they achieved the ROI they had projected for the WFM system they purchased (Question 11).

Finding: Almost half of the participants who used an ROI analysis to justify their purchase of a WFM system indicated that they achieved their projected ROI. Another 40% indicated that they either didn't know or weren't sure, leaving about 10% who felt that the system failed to meet their expectations.

Interpretation: The correlation between forecasted and actual ROI is essential, why else bother in the first place. If we disregard those who didn't know how their projected and actual ROI correlated, then we can infer that the ROI projections were realized in about 80% of the cases for those surveyed.

APPENDIX B: WORKFORCE MANAGEMENT QUESTIONNAIRE

This questionnaire was used as a "guide" to collect information from participants.

Purdue University
Center for Customer-Driven Quality
Workforce Management Study Benchmark Questionnaire

Section	Description		Enter Your Answer in the Green Fields	Comments/ Questions
		Company Name		
		Industry		
			Your Center	Company Wide
		Number of seats		
		Number of FTEs		
		Number of sites		
		Address		
		City		
		State		
		Zip Code		
		Phone Number		
		Phone Extension Number (if applicable)		
		FAX Number		
		Company Website		
		Contact Center Toll Free Number		
		Are you participating because you feel your company is currently using world class workforce management or because you would like to know more about what others are doing in this area?	1 to 5 scale (use scale below)	
		5 - We have an excellent method and others could learn from it		
		4 - We have a basically solid method that works most of the time for us. Not necessarily anything to highlight specifically		
		3 - We have a fairly typical method. It generally works.		
		2 - Our methods need some work. We are looking to learn from others.		
		1 - We need help.		

1	Call Types	**What kind of calls does your call center handle?**		
		Only inbound calls		
		Only outbound calls		
		Both inbound and outbound calls		
		When "both" please provide percent split between inbound and outbound		
		Inbound: ___%; Outbound: ____%		
		How do these calls break down in the following two categories:		
		Business to business		
		Business to consumer		
		Total (This must total to 100%)	0.00	%
2	Agent function	**Which of the following functions do your agents provide regarding inbound calls?**		
		Advising/Consulting/PreSale		%
		Fill in the percentage of calls where majority of time is spent advising or consulting		
		Complaint resolution		%
		Fill in the percentage of calls that are dedicated to resolving customers' complaints (the complaints do not have to originate from a transaction with the call center).		
		Consumer affairs		%
		Fill in the percentage of calls that are general inquiries about your products or services. An example would be calls prompted by your 800 number on your product encouraging customer feedback.		
		Customer service (questions and inquiries)		%
		Fill in the percentage of calls that are general customer service calls, that do not specifically match the other options available within this question.		
		Dispatching		%
		Fill in the percentage of calls dedicated to dispatching calls, equipment, or personnel.		
		Technical support to internal customers (helpdesk)		%
		Fill in the percentage of calls dedicated to resolving technical issues for other employees		
		Inside sales		
		Fill in the percentage of calls that require a "sales pitch" before the sale can be completed.		
		Order taking and tracking		%
		Fill in the percentage of calls dedicated to taking orders (no sales pitch required) and/or tracking the progress and delivery of such orders.		
		Information requests		%
		Fill in the percentage of calls that are requests for specific information that do not match the other options provided within this question.		
		Public relations		%
		Fill in the percentage of calls specific to public relations and company image.		
		Reservations		%
		Fill in the percentage of calls specific to taking and making reservations.		
		Technical support to external customers		%
		Fill in the percentage of calls related to technical support to external customers.		
		Other		%
		Fill in the percentage of calls that are another function that does not match any of the options provided. Any data entered in this option will not be included in the benchmark study.		
		Total (This must total to 100%)	0.00	%

3	Outbound reasons	**Which of the following functions do your agents provide regarding outbound calls?**		
		Outbound sales/telemarketing		%
		Scheduled Call Backs		
		Lead generation		%
		Collections		%
		Customer satisfaction surveys		%
		Follow-up to inbound calls		%
		Follow-up to forms received from customers		
		Market research		%
		Other		%

		Total (This must total to 100%)	0.00	%
4	Call Volumes	**Approximately how many contacts are handled by your contact center per year?**		
		Calls handled per year **Inbound**		
		Outbound		
		Emails handled per year		
		Fill in the number of all emails handled, not including automatic acknowledgements		
		Chat sessions per year		
		Fill in the number of all emails handled, not including automatic acknowledgements		

5	**System**	**What workforce management software do you use in the center?**		
		Fill in the actual system used (i.e. Aspect/TCS, IEX, Blue Pumpkin, Pipkins etc)		
		How satisfied are you with your workforce management software?	**1 to 5**	
		Drop box with 5--point scale (1-very dissatisfied, 2-dissatisfied, 3-neutral, 4-satisfied, 5-very satisfied		
		What are the best features of the system you have?		
		What are the weaknesses of the system you have?		
		What functions of workforce management do you use?	**Yes**	**No**
		Skills Based		
		Historical Adherence		
		Real Time Adherence		
		Payroll Integration		
		Intraday		
		Other		
		What is your method of distributing agent schedules?	**Yes/No**	**How Frequently**
		Paper		
		Electronic		
		Web		
		IVR		
		What has been the greatest impact since implementing your software?		
		Please describe.		
		Would you recommend your system to other companies?	**Yes**	**No**
6	**Center Specific**	**What are the metrics used to evaluate the overall efficiency and effectiveness of the center?**	**Goal**	**Actual**
		Please list the ***key performance indicators:***		

7	Center Metrics	How is the effectiveness of workforce optimization measured?	Goal	Actual
		Average Speed of Answer		
		Service Level		
		Adherence		
		Compliance		
		Cost per Call		
		Occupancy		
		Forecast Accuracy Measurement		
		- Do you forecast by period/interval?		
		- Or do you forecast by day?		
		Do you use Intraday forecasting and adjustments?		
		Please describe activity and frequency.		
		How are measurements aggregated? Informally, Reports, Dashboard		
8	Agent Metrics	**If adherence and compliance are used as measures, please describe what role they play in agent performance evaluation.**		
		Please describe.		
			Goal	Actual
		What is the adherence goal?		
		What shrinkage or overhead factors do you use?		
		What elements of schedules and exceptions are included within your adherence calculation?		
		What is the compliance goal?		
		Who receives agent specific metrics?		
		How are results disseminated to Agents and in what time frame?		
		How is this information compiled Manual or Auto?		

9	Reporting	**Is your workforce management system integrated to other enterprise systems?**		
		If yes, please list the systems.		
		Please list the five most critical reports to managing your center.	**Interval Delivered**	**Media**
		1.		
		2.		
		3.		
		4.		
		5.		
			Yes/No	
		Are available reports historical only (yesterdays data)?		
		Are available reports real time (current interval)?		
			Yes/No	**Frequency**
		To whom are reports available: Manager		
		Supervisor		
		Agent		
		Do you use an analytics tool?		
		Please identify analytic tools used		
		What differentiates analytical tool from reporting tool?		
10	Multiple Center	**Is forecasting and planning centralized or de-centralized?**		**Comments**
		Please describe		
		Is scheduling centralized or de-centralized:		**Comments**
		Please describe.		**Comments**
		Do you collect data from multiple sites and multiple ACD types for forecasting and scheduling?		**Comments**
		If yes, Manual or Automated and how often?		
		Number of Data Analysts required to manage process?		

11	Leadership	**What is the ratio of agents to workforce management staff?**		
		What percent of the direct supervisor's time is spent managing agent schedules? (approximately)		
12	Forecasts	**How do you arrive at forecasts?**		
		Daily Volumes		
		Historical Patterns		
		External Sources, please list		
		Do you run 'what if" scenarios?		
		Please describe.		
13	Scheduling	**Are you using fixed or flexible schedules?**		
		Please describe.		
		Are you using variable shift start times?		
		If yes, please indicate hourly, half hourly or quarter hourly.		
		Are you using variable shift duration?		
		Please describe.		
		Are you using variable shift hours?		
		Please describe.		
		Do you use shift bidding or agent preference?		
		Please describe rules surrounding process and priority.		
		Are you scheduling multi-media?	Yes/No	
		If yes, please indicate which media type: ***Inbound Calls***		
		Outbound Calls		
		eMail		
		Chat Sessions		
		If yes, are you scheduling multimedia in a blended environment or during low inbound call volume times?		

14	Agent	How are agents able to access and view their schedules	Yes/No	
		From their desktop		
		From a website		
		Through the IVR/VRU		
		How are agents able to request vacation or schedule changes?	**Yes/No**	
		From their desktop		
		From a website		
		Through the IVR/VRU		
		Are agents able to get immediate automated response to their request?	**Yes/No**	
		If agents are able to access and view their adherence/compliance performance results on the desktop, across what durations?	**Yes/No**	
		Quarter to date?		
		Month to date?		
		Week to date?		
		Other		
		Is there any type of reward and recognition system for agents meeting adherence and compliance goals?		**Comments**
		If yes, please describe		
		If yes, how effective do you consider your current rewards & recognition program?		**Comments**
		Please describe:		
		What would the agents say is the #1 focus within the center?		**Comments**

15		How does your company know that it's doing well? (i.e. what metrics are used to define success?)		Comments
		Are performance targets established based upon historical analyses or hunch?		
16	Open Opinion	Are there other factors that you think significantly contribute to the success of your workforce management? Please describe.		Comments
		Thank you very much for your time and effort in completing this survey!		

APPENDIX C: LIST OF VENDORS AND ASSOCIATIONS

Aspect, eWorkforce, 1310 Ridder Park Drive, San Jose, CA 95131-2313, 888-412-7728, <www.aspect.com>

Bard Technologies, Rt. 4, Bedford, NY 860-536-4214, <www.bardtech.com>

Blue Pumpkin Software, 800 W. El Camino Real, Mountain View, CA 94040, Toll-free in U.S. 877-257-6756, <www.bluepumpkin.com>

Centerforce Technologies, Inc., 7200 Wisconsin Ave., Bethesda, MD 20804, 301-272-2955, <www.cforcetech.com>

EIS International, Inc., 555 Herndon Parkway, Herndon, VA 20170, 800-274-5676 / 703-478-9808, <www.ser.com>

Genesys Telecommunications Laboratories, 2001 Junipero Serra Blvd, Daly City, CA 94014, 1-888-GENESYS, <www. genesyslab.com>

GMT Corp, 2831 Peterson Place, Norcross, GA 30071, 770-559-6211 <www.gmtcorp.com>

Goldmine Software Crop., 1125 Kelly Johnson Blvd., Colorado Springs, CO 80920, 719-531-5007, <www.benddata.com>

IEX Corp., 2425 N. Central Expressway, Richardson, TX 75080, 800-433-7692, 972-301-1300, < www.iex.com>

InTelegy Corp, 18 Crow Canyon Court, San Ramon, CA 94583, 925-736-4114, <www.intelegy.com>

Interactive Software Systems, 4500 N State Road, Ft. Lauderdale, FL 33319, 954-717-0192, <www.intersoftsys.com>

InVision Software GmbH, Halskestr.38, 40880 Ratingen, Tel.: 0049-(0)2102-9473-0 up to the 15.05.2000, after 0049-(0)2102-728-0, e-mail: info@invision.de, <www.invisiononline.com>

ISC, 14 East 4th Street, New York, NY 10012, 877-472-4472, <www.isc.com>

Odysoft USA, 9216 Foxboro Drive, Brentwood, TN 37027, 615-371-1143, <www.calabrio.com>

Pegasystems, Inc., 101 Main Street, Cambridge, MA 02142, 617-374-9600, <www.pegasystems.com>

Pipkins Inc., 1031 Executive Parkway, St. Louis, MO 63141, 314-469-6106, <www.pipkins.com>

Portage Communications, Inc., 49206 SE Middle Fork Road, North Bend, WA 98045, 425-888-5320, <www.portagecommunications.com>

Professional Resource Management, 50 North Brockway, Palatine, IL 60067, 847-359-3990, <www.prminc.com>

Remedy Corp., 1050 Salado Drive, Mountain View, CA 94043, 650-903-5200, <www.remedy.com>

Saligent Software, 4630 Forge Road, Colorado Springs, CO 80907, 719-590-4044, <www.saligentsoftware.com>

Society of Workforce Planning Professionals (SWPP), 6508 Grayson Court, Nashville, TN 37205, 615-352-4292, <www.swpp.org>

Stevens Communications, Inc. - 11 South LaSalle, Suite 900, Chicago, IL 60603, 312-895-5297 phone and fax, <www.stevenscom.com>

SYMON Communications, Inc. - 1600 Highway 6, Suite 333, Sugar Land, TX 77478, 281-240-5555, <www.symon.com>

System Management Software, Inc. (SMSI) - 2845 N. Hamline Ave., St. Paul, MN 55113, 800-765-SMSI (7674), <www.smsi.com>

Sytel Ltd., Two High Street, Chesham Bucks HP5, 1EP UK 44-1494-793200, <www.sytelco.com>

TCS, Aspect, 1310 Ridder Park Drive, San Jose, CA 95131-2313, 888-412-7728, <www.aspect.com>

APPENDIX C: ASPECT TCS/EWORKFORCE WFM ROI CALCULATOR

Workforce Management ROI Calculator

Your call center statistics		
Average number of calls per day	10,000	Input values specific to your call center
Number of days open per year	363	
Number of open hours per day	10.00	
Average total call length in seconds	200	
Number of calls / agent / day	60	
Number of calls abandoned per day	60	
Number of calls transferred per day	1500	
Additional handle time per transferred call	45	
Number of agents	120	
Number of supervisors	4	
Number of scheduling analysts	2	
Agent annual salary	$27,000.00	
Supervisor annual salary	$35,000.00	
Scheduling analyst annual salary	$40,000.00	
Burden rate as a percent of salary	25.00%	
Network cost per minute	$0.06	
Agent hourly burdened salary	$16.23	Calculated values
Supervisor hourly burdened salary	$21.03	
Scheduling analyst hourly burden salary	$24.04	
Number of sales calls per day	7933	Input values specific to your call center
Revenue per sales call	$50.00	
Number of abandon sales calls per day	200	
Average agent sales close ratio	54.00%	
Percentage of time overstaffed	30%	
Percentage overstaffed, when overstaffing occurs	20%	
Total average agent overtime in hours per day	20	
Overtime pay factor (example 1.5)	1.5	

Savings from increased staffing effectiveness		
Total overstaffing	6.00%	
Annual overstaffed hours	26,136	Calculated values
Anticipated percentage improvements in overstaffing from intra-day time management	30.00%	Typical improvement
Annual hours saved	7,841	
Annual labor benefit	$127,259	Calculated values
Annual benefit from reduced overstaffing	$127,259	
Anticipated percentage reduction in overtime	30.00%	Typical improvement
Annual benefit from reduced overtime	$53,023	
Current annual costs of scheduling analysts	$100,000	Calculated value
Anticipated number of analysts with WFM	1	Typical requirement
Annual costs of scheduling analysts after WFM	$50,000	Calculated value
Annual benefit from reduced scheduling cost	$50,000	
Revenue benefits from increased staffing effectiveness		
Anticipated percentage of recovered sales abandon calls	5.00%	Typical improvement
Annual recovered revenue	$98,010	
Total Annual Workforce Management Labor Benefit	**$230,282**	
Total Annual Workforce Management Revenue Benefit	**$98,010**	
Total Annual Workforce Management Benefit	**$328,292**	

AUTHORS' BIOGRAPHIES

Principal Investigator

Dr. Jon Anton (also known as "Dr. Jon") is the director of benchmark research at Purdue University's Center for Customer-Driven Quality. He specializes in enhancing customer service strategy through inbound call centers, and e-business centers, using the latest in telecommunications (voice), and computer (digital) technology. He also focuses on using the Internet for external customer access, as well as Intranets and middleware.

Since 1995, Dr. Jon has been the principal investigator of the Purdue University Call Center Benchmark Research. This data is now collected at the BenchmarkPortal.com Web site, where it is placed into a data warehouse that currently contains over ten million data points on call center performance. Based on the analysis of this data, Dr. Jon authors the following monthly publications: "The Purdue Page" in *Call Center Magazine*, "Dr. Jon's Benchmarks" in *Call Center News*, "Dr. Jon's Industry Statistics" in *Customer Interface Magazine*, and "Dr. Jon's Business Intelligence" in the *Call Center Manager's Report*.

Dr. Jon has assisted over 400 companies in improving their customer service strategy/delivery by the design and implementation of inbound and outbound call centers, as well as in the decision-making process of using teleservice providers for maximizing service levels while minimizing costs per call. In August of 1996, *Call Center Magazine* honored Dr. Jon by selecting him as an Original Pioneer of the emerging call center industry. In October of 2000, Dr. Jon was named to the Call Center Hall of Fame. In January of 2001, Dr. Jon was selected for the industry's "Leaders and Legends" Award by Help Desk 2000. Dr. Jon is also a member of the National Committee for Quality Assurance.

Dr. Jon has guided corporate executives in strategically re-positioning their call centers as robust customer access centers through a combination of benchmarking, re-engineering, consolidation, outsourcing, and Web-enablement. The resulting single point of contact for the customer allows business to be conducted anywhere, anytime, and in any form. By better understanding the customer lifetime value, Dr. Jon has developed techniques for calculating the ROI for customer service initiatives.

Dr. Jon has published 96 papers on customer service and call center methods in industry journals. In 1997, one of his papers on self-service was awarded the best article of the year by *Customer Relationship Management Magazine*.

Dr. Jon has published twenty-two professional books:

Managing Web-Based Customer Experiences: Self-service Integrated with Assisted Service, The Anton Press, 2003

From Cost to Profit Center: How Technology Enables the Difference, The Anton Press, 2003

Customer Service and the Human Experience: We, the People, Make a Difference, The Anton Press, 2003

Customer Service at a Crossroads: What You Do Next to Improve Performance Will Determine Your Company's Destiny, The Anton Press, 2003

Offshore Outsourcing Opportunities, The Anton Press, 2002

Optimizing Outbound Calling: The Strategic Use of Predictive Dialers, The Anton Press, 2002

Customer Relationship Management Technology: Building the Infrastructure for Customer Collaboration, The Anton Press, 2002

Customer Obsession: Your Roadmap to Profitable CRM, The Anton Press, 2002

Integrating People with Process and Technology: Gaining Employee Acceptance of Technology Initiatives, The Anton Press, 2002

Selecting a Teleservices Partner: Sales, Service, and Support, The Anton Press, 2002

How to Conduct a Call Center Performance Audit: A to Z, The Anton Press, 2002

20:20 CRM A Visionary Insight into Unique Customer Contact, The Anton Press, 2001

Minimizing Agent Turnover: The Biggest Challenge for Customer Contact Centers, The Anton Press, 2001

e-Business Customer Service: The Need for Quality Assessment, The Anton Press, 2001

Customer Relationship Management, The Bottom Line to Optimizing Your ROI, Prentice Hall, 2nd Edition, 2001

Call Center Performance Enhancement Using Simulation and Modeling, Purdue University Press, 2000

Call Center Benchmarking: How Good is "Good Enough", Purdue University Press, 1999

Listening to the Voice of the Customer, Alexander Communications, 1997

Contact Center Management by the Numbers, Purdue University Press, 1997

Customer Relationship Management: Making Hard Decisions with Soft Numbers, Prentice-Hall, Inc., 1996

Inbound Customer Contact Center Design, Dame Publishers, Inc., 1994

Computer-Assisted Learning, Hafner Publishing, Inc., 1985

Dr. Jon is the editor for a series of professional books entitled *Customer Access Management*, published by the Purdue University Press.

Dr. Jon's formal education was in technology, including a Doctorate of Science and a Master of Science from Harvard University, a Master of Science from the University of Connecticut, and a Bachelor of Science from the University of Notre Dame. He also completed a three-summer intensive Executive Education program in Business at the Graduate School of Business at Stanford University.

Dr. Jon can be reached at 765-494-8357 or at <DrJonAnton@BenchmarkPortal.com>.

Research Analyst

Dayne Petersen has experience managing and operating both business-to-business and business-to-consumer call centers. Additionally, she has a successful track record evaluating and implementing call center solutions that meet defined client requirements.

At Carlson Companies as Director of Call Center Operations, she acted as the internal "best practice and benchmarking consultant," leading the Gallup employee satisfaction surveys, introducing of Six Sigma for call center process improvement and design, and implementing multi-media in the contact center.

Dayne also spent several years with AT&T Solutions where she consulted with many of the Fortune 100 companies focusing on contact center technologies particularly network services, intelligent call processing, IVR and ACD solutions.

Dayne focuses on driving results through the fine-tuning of people, process and technology that your business currently owns.

Dayne graduated from Minnesota State University and has completed graduate level coursed in various business disciplines.

Dayne Petersen, Senior Consultant with Minnesota based Call Center Solutions is a Purdue University certified contact center auditor specializing in all areas of contact center operations.

Dayne can be reached at 612-819-7433 or at <DaynePetersen@BenchmarkPortal.com>.

Content Editor

Anita Rockwell is the Director of Business Intelligence at BenchmarkPortal, Inc. She is a Purdue University certified contact center auditor specializing in assisting contact center managers in optimally integrating people with processes and technology. Anita's primary passion is around creating the optimal environment in the contact center, with a special emphasis on the dynamics required to release the potential of each team member. In 2001, Anita co-authored a popular professional book called, "Minimizing Agent Turnover" with Dr. Jon Anton.

Anita's other core competencies include all of the following human resource challenges: 1) recruiting and screening, 2) hiring and training, 3) employee development, 4) organizational structure, 5) agent monitoring, coaching, and motivation, 6) change management, customer satisfaction surveys, and finally 7) agent quality measurement and benchmarking.

Anita has also developed a proven methodology to first discover the root causes of workflow process problems in a customer service contact center (including telephone and e-mails), and then to recommend specific solutions to improve efficiency and effectiveness to acceptable, best practice levels.

Anita was the Vice President of Customer Service with Simon Delivers.com where she designed, implemented, and managed an inbound customer service contact center for customer support.

Anita also spent sixteen years with the Blue Cross and Blue Shield of Minnesota where she was quickly promoted to Vice President of Customer Service, which included all aspects of customer contact management. In this capacity she was responsible for over 1 million members, 235 employees, 7 regional offices and an annual budget of over $10 million. Anita lists the following as her major accomplishments while with the Blue Cross and Blue Shield organization:

1. Re-organized the division, and championed technology enhancements.
2. Increased percent of inquiries resolved on first contact by 20%.
3. Increased customer satisfaction for regional service team from 75% to 87% in less than a year.
4. Dramatically reduced service employee turnover rate from over 50% to under 10% and improved employee satisfaction to a level 15% above the company average.
5. Developed and piloted first Intelligent Customer Service Workstation to streamline service delivery.
6. Increased market share in the region she managed grew from 45.5% to 49.5%.

7. Developed innovative client review tool that resulted in the identification of 250 initiatives to improve service.

8. Developed, implemented and directed one of the company's first successful pay-for-performance initiatives which increased claims productivity by over 20% while incurring no additional costs.

9. Developed processes and tools that enhanced effectiveness of the team resulting in the retention of key provider partners and turning around the satisfaction ratings of the providers with her company.

10. Worked directly with a Senior Vice President and CIO and other senior staff members on key corporate projects as part of the company's overall performance improvement strategy.

Anita graduated Cum Laude from Bethel College with a Bachelors Degree in Business Management with an emphasis in Organizational Studies. She is also currently working toward her Masters in psychology.

Anita can be reached at 651-755-1210 or at <AnitaRockwell@BenchmarkPortal.com>.

