



Workforce Management:

What Is It? Do You Need It?

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In order to meet the objectives of Workforce Management of having the right people in place at the right time, contact center managers must make calculations based on a number of factors. Among these factors are call volume, average call handle time, call distribution patterns by intervals and agent off-line requirements. Managers should work to avoid agent shortages or surpluses, and calls and agents must be managed on a daily basis to meet the actual demands of the day. While it is possible to handle some of these tasks manually, for most operations an automated workforce management system is required.

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What is Workforce Management?

Workforce Management can be defined as having the right people in place to perform the right activities at the right time.

This concept can be applied to any business that involves customers waiting for services. Whether you're scheduling tellers at a bank or cashiers at a grocery store, using the principles of Workforce Management prepares you to meet your customer's needs at every hour of every day.

Implementing the principles of effective Workforce Management in a contact center is not always easy, even in the best organization. Employees in today's contact centers are often responsible for many other tasks in addition to answering incoming calls. However, if the events of the day are not properly planned and managed, an entire day's productivity can be lost to putting out fires. Workforce Management allows your company to be proactive instead of reactive.

Let's get acquainted with the fundamental principles of Workforce Management.

Principle #1: Forecast to develop accurate call volume requirements.

Luckily for those of us in call centers, history is a good indicator of the future. Historical information, such as the number of calls received each day, and the average time it takes to handle each call, is the fundamental basis of Workforce Management forecasting. However, because we need accurate Call Volume Requirements and not simply the total number of calls on a given day, the distribution pattern of calls needs to be considered.

During the week, every day receives a percentage (or distribution) of the total call volume. Dividing each day's call volume by total calls for the week gives you a Distribution Percentage for that day. When analyzing call volumes over a period of time, the Distribution Percentage makes it easy to see similarities in the way calls are distributed from week to week. Trends and patterns become evident as you analyze weekly Call Volume Distribution during the month, so does monthly Call Volumes Distribution during the year. Being aware of the Distribution Percentage (daily, weekly, and monthly) is a key element to accurately forecasting call volumes.

External events can cause your Forecast Call Volume to increase or decrease, including events that are currently unknown. Some events, such as holidays, affect call volumes for everyone and apply whether your business is open or closed. But other events are industry specific. For example, stock market activity can impact call centers in the financial industry.

If the Call Volume you received in the past is not typical, eliminate that particular period from the forecast to keep your data pure. Let's assume you used the most recent 13 weeks of history to develop your Call Volume Forecast. If Monday is usually your highest call volume

day and your data contains a Monday holiday, including a day with zero call volumes in your calculations would lower your forecast unrealistically. The same holds true if call volumes are higher than normal the day after a holiday. You should plan future events by adjusting your historical forecast, but how much depends on the type of event and how it impacted call volumes in the past.

Unplanned events, such as sick time and unscheduled Off-Line time, are just as critical to your Call Volume Forecast as events you do know about. Don't forecast too tightly. Add a percentage of Schedule Overhead to increase your Agent Requirements and help better prepare for the unknown and inevitable events of the day. If you're not sure how much to add, 10 percent is a good place to start.

Average Handle Time is the length of time an employee needs to answer an in-coming call and complete any required administrative tasks. Like call volumes, Average Handle Times have a unique daily distribution. One of the factors that can influence Average Handle Time is an agent's experience level. If you scheduled experienced agents in the morning and trainees in the afternoon, you may notice shorter Average Handle Times early in the day and longer times when less experienced agents are scheduled.

Daily Agent Requirement (sometimes called Daily Call Volume Requirement or Daily Staffing Requirement) is the number of employees needed to be available (or On-Line) to take calls. You determine the Daily Agent Requirement as follows:

1. Multiply the Number of Calls forecast for your Daily Operating Hours by the Average Handle Time (in minutes or seconds). This is the Work Volume.
2. Divide the Work Volume by total number of minutes in your Daily Operating Hours and round the answer. It's tough to schedule 1/2 a person.

If you use minutes for Average Handle Time, then be consistent and use minutes for Daily Operating Hours. The equation now looks like this:

**Number of Calls x Average Handle Time / Daily Operating Hours (in minutes) =
Daily Agent Requirement**

Let's Do an Example

Your call center operates Monday to Saturday, from 8:00 am to 5:00 PM. You expect 10,000 calls this week, with a Distribution Percentage on Monday of 20%, or 2,000 calls.

Your Average Handle Time is 6 minutes, so the Daily Agent Requirement would be: Monday = 2,000 calls x 6 minutes / 480 minutes per day = 25 Agents

This calculation gives you the average number of Full Time Equivalent (FTE) agents needed on Monday. For each day of the week, you'll want to calculate the number of people you'll need. To make it easier to calculate, organize a worksheet with the days of the week in a column:

Daily Worksheet			
Operating Hours (480 min.)	Forecast Call Volumes	Average Handle Time (min.)	Daily Agent Requirement
Monday	2,000	6	25
Tuesday	1,600	6	20
Wednesday	1,440	6	18
Thursday	1,760	6	22
Friday	2,000	6	25
Saturday	1,200	6	15

Are we finished? Not yet!

Knowing just the Daily Agent Requirement, however, is not enough to help you schedule effectively. In the same way that weekly, monthly, and annual call volumes have distribution patterns, call volumes each day are distributed among Requirement Intervals, or periods during the day. If you graphed daily call volumes by Interval, you would see a curve with peaks representing Intervals with high call volumes, and valleys representing Intervals with low call volume. To schedule your agents efficiently within a day, you must know the Agent Requirement for each Interval. The shorter the Interval, the more accurate your Interval Agent Requirement will be. Most call centers use an Interval of 15 or 30 minutes for their forecasts. Yes, it does increase the number of calculations but it's worth the effort!

Where can you get historical data in Intervals of 15 or 30 minutes to prepare a Call Volume Forecast? Most Automatic Call Distributors (ACDs) will collect call volume statistics for these time periods and print reports to help prepare a forecast. If you do not have an ACD in your call center you'll need manual procedures to collect call volumes.

Interval Agent Requirements can be calculated for every Interval of the day using the same formula we used in the previous example:

Number of Calls x AHT / Requirement Interval (in seconds) = Interval Agent Requirement

Add a new column to your Daily Worksheet to list the Intervals for each day, and use this formula to calculate the Interval Agent Requirement for every Interval. We use seconds to measure the Requirement Interval and Average Handle Time, and we'll vary AHT for each Interval:

Interval Worksheet				
	Requirement Interval (1,800 sec.)	Forecast Call Volumes	Average Handle Time(sec.)	Interval Agent Requirement
Monday	8:00-8:30	100	360	20
	8:30-9:00	125	330	23
	9:00-9:30	100	390	22
...	...	...	...	...
Saturday	4:30-5:00	115	420	27

We've accomplished a lot with Principle #1. Not only have we forecast our call volumes, but we've determined how many people are needed each day. More specifically, we identified how many agents would be needed On-Line for each Interval during the day. Our next step is to see how we can best match these requirements with current staff.

Principal #2: Schedule agents efficiently to meet not only call volume requirements, but Off-Line requirements as well.

Let's go back to our original example and see what happens when we schedule to meet Agent Requirements. This call center operates Monday to Saturday and employs 25 full-time agents. During the week, 3 agents were given vacation days. How would we determine the number of agents to schedule each day? Let's take it one step at a time:

1. Multiply the Number of Agents (total 25) times their normal working schedule (5 days per week). Then subtract the number of Days Not Available (the 3 days that you granted for vacations). This is the total Available Work Days you can schedule:

Number of Agents x Work Days per Week - Days Not Available = Available Work Days

2. List the number of agents that are not available for each day in a column titled "Days Not Available." In this example, it would be the 3 agents that were granted vacation days.
3. Multiply Available Work Days by the Distribution Percentage for each day and enter the answer in a column titled "Daily Agent Availability – Calculated." This is a guide to assist you in determining how many agents to schedule each day.
4. Look at the "Daily Agent Availability - Calculated" and round to the nearest whole number. When you make your adjustments, remember to look at the column titled "Days Not Available" to ensure you don't schedule more agents than are actually available. The total Daily Agent Availability should balance to the total Available Work Days.
5. Subtract the Daily Agent Requirement from Daily Agent Availability. This will show whether you have a Surplus or Shortage of agents each day.

Let's organize a worksheet for our example and do the calculations:

25 Agents x 5 Days per Week - 3 Days Not Available = 122 Available Work Days

Your Daily Worksheet should now look like this:

Daily Worksheet							
	Distribution Percentage	Days Not Available	Daily Agent Availability Adjusted		Daily Agent Requirement	Surplus (Shortage)	Days Off
			Calculated	Adjusted			
Mon.	20.0%	1	24.4	=24	25	(1)	-
Tues.	16.0%	1	19.52	=20	20	-	5
Wed.	14.4%	-	17.58	=18	18	-	7
Thur.	17.6%	-	21.47	=21	22	(1)	3
Fri.	20.0%	1	24.40	=24	25	(1)	-
Sat.	12.0%	-	14.64	=15	15	-	10
Total	100.0%	3		122	125	(3)	25

Using this worksheet helps to analyze several things. First, it allows us to see where a Surplus or Shortage falls during the week so we can do advance planning. Analyzing this call center, you can see that temporary help or overtime may be needed on Monday, Thursday, and Friday. If you saw a Surplus you could schedule training, team meetings, or allow additional vacation days.

This worksheet also helps in determining whether additional staff needs to be hired. For example, this call center needs more staff since it does not have enough to accommodate vacations, meetings or training. It also shows you how many Days Off are available each day. In our example, Days Off are not available on Mondays and Fridays.

The Daily Worksheet illustrates how well current staffing levels meet Daily Agent Requirements. Now, using the Interval Worksheet, let's see how current Agent Schedules match Interval Agent Requirements.

Next to the column titled Agent Requirement in your Interval Worksheet create an Agent Scheduled Line. For each Interval, indicate the total number of agents you currently have scheduled On-Line taking calls. Make sure this number does not include Off-Line activities such as breaks and lunches. Subtract your Schedule Line from your Requirements Line. The difference is your Agent Net Line. Your Interval Worksheet should now look like this:

Interval Worksheet						
	Interval (1,800 sec.)	Forecast Call Volumes	Average Handle Time(sec.)	Agent Requirement Line	Agent Schedule Line	AgentNetLine
Monday	8:00-8:30	100	360	20	25	5
	8:30-9:00	125	330	23	25	2
	9:00-9:30	150	390	22	25	(3)
...	...	...	...	...	...	...
Friday	4:30-5:00	115	420	27	25	(2)

The most efficient schedule would show zero in the Net Line for every Interval. However, the degree in which you can match the Requirement Line to your Scheduled Line is often restricted by call center work rules. The tighter your work rules, the less flexibility you have in scheduling to meet the Call Volume Requirements of the day.

Call center work rules, such as standard schedule lengths, fixed or limited start time windows, and fixed breaks and lunches make it almost impossible to achieve a zero Net Line. Even in the most flexible of environments, a Net Line with no surpluses and no shortage is virtually unattainable. But, regardless how varied your Net Line may be, there are things you can do while developing schedules to increase efficiency. **Surplus in the Net Line is just as bad as a shortage.**

If your call volume is seasonal but your employees are not, you may have entire days or even weeks when your Net Line shows a surplus. Finding ways to maximize productivity is crucial all year long. If you do not have the luxury of simply sending agents home, you must incorporate Off-Line Activities into your schedule where surpluses exist.

Off-Line Activity is any activity where agents are not scheduled to take incoming calls. Some are as simple as breaks, lunches, and team meetings. Other, more complex activities are able to reap huge productivity increases, such as making collection calls, or job sharing with other departments. The type of Off-Line activities you can include in your schedules depends upon your business. The main thing to remember is that a little bit of creativity can not only result in productivity benefits for your corporation, but in opportunity benefits for your agents as well.

To reduce shortage in your Net Line you must be flexible.

Fixed start times, lunches and breaks may delight your agents, but if they don't answer customer's calls your agents will quickly lose their delight when your business closes its doors. Fixed schedules, when they are placed correctly, can work in environments where call volumes are predictable. If they are not suited for your call center, you will quickly see the inefficiency of fixed schedules in your Net Line.

Major gains in efficiency can be made by allowing scheduled start times to be placed where

they are most needed each day. However, if the needs of your agents do not allow for this flexibility, even making small changes such as incorporating flexible break and lunch times can make a difference.

The more experience you gain in scheduling, the more you'll see that balancing the needs of your customers with the needs of your agents is truly an art.

Principle #3: Manage calls and agents to meet the actual demands of the day.

The day has arrived. Forecast Call Volumes look great, your agents are scheduled, and your Net Line is looking tight. You've done a lot of work and now you can sit back, kick up your feet and relax, right? Wrong!

Up until this point, you have been in the planning stages of Workforce Management. As John Steinbeck once wrote, "The best laid plans of mice and men oft fall astray." After all your painstaking preparation, don't make the mistake of failing to manage your workforce to meet the real-time demands of the day.

Schedules, no matter how necessary, are nothing more than snapshots in time. It is almost certain that before you finish distributing them to your agents some will need to change. Forecast Call Volumes may also need to be adjusted to reflect the most recent call trends. In order to incorporate these inevitable changes, you need processes for Interim and Intraday changes.

Interim processes are changes to the Forecast or Schedules after it has been distributed, but prior to the actual day it is used. An example of Interim Schedule Changes would be updating the Scheduled Line because an agent went on disability or transferred to another department.

Intraday processes are also changes and updates, except they take place once the day has arrived. For example, an agent calling in sick or a supervisor requesting a last minute meeting.

In either case, updating the Scheduled Line is critical. If the Scheduled Line is inaccurate, the Net Line will be as well. You may think you have enough agents On-Line, when you actually have a shortage.

Interim and Intraday forecast changes are sometimes needed to incorporate the current Call Volume trends. Updates in Interval Call Volumes will also require changes to your Requirement Lines so that you can see the impact on the Net Lines.

When making changes to your Forecast, do not forget about the distribution of weekly call volume. Just because actual calls came in 15% above the forecast on Monday, does not necessarily mean that Tuesday will increase by 15%. However, if you notice this trend for

several days in a row, you may want to increase your Forecast for the remaining days of the week.

It's just as important to pay attention to the Forecast deviation for each interval. By not monitoring this closely, you may have a knee-jerk reaction to a spike in calls that lasted only an hour. Good workforce management decisions are based not only on your ability to be reactive, but more importantly on your ability to be proactive.

The Bottom Line

If you are in the business of taking calls from customers who are not willing to hold forever, and you have limited resources, you need workforce management in your corporation. Can these principles be accomplished manually? It depends entirely on your organization's size and structure. If you have a single site call center and a manageable number of agents, you could even use pencils and a legal pad!

However, as your business expands to multiple locations, or as you start to optimize operations, the task may become so complex that it doesn't appear to be worth the effort. This is where an automated Workforce Management system would help you deploy these principles with much less time and effort. But no matter how you go about incorporating the principles of Workforce Management, it is worth the effort.

About the Author:

Rebecca Wise began her career in workforce management in 1990 at AT&T Universal Card Services, where she participated in the selection and implementation of the TotalView system. In 1995 Rebecca joined IEX and held positions in both training and international sales support until she took a senior management position with the Convergys Corporation in 2000. Rebecca supported a team responsible for providing forecasting, scheduling and intra-day management services for the technical support services division of Convergys until September of 2003 when she re-joined IEX as a Sales Engineer. In this capacity she provides TotalView technical expertise and contact center consultative support to members of the regional sales management team and their prospective customers.

About IEX Corporation

IEX Corporation, a subsidiary of NICE Systems Ltd. (NASDAQ: NICE), is a leading provider of feature-rich, scalable workforce management software that enables contact centers to develop accurate forecasts and build efficient staff plans. Founded in 1988, Richardson, Texas-based IEX has a strong global market presence in over 45 countries with more than 900,000 agents in over 3,100 sites. IEX is part of the NICE family of companies, which offers the industry's broadest set of contact center business performance and analytics solutions. In addition to workforce management, the NICE product portfolio is comprised of quality monitoring, interaction analytics and performance management technology. These solutions address the entire spectrum of contact center business issues while supplying valuable strategic information to enterprise-level decision makers. For more information about IEX, visit <http://www.iex.com>. For more information about NICE, visit <http://www.nice.com>.