Scheduling Strategies:

Definitions and Decisions for Successful Schedules

Scheduling the staff is the next step in the workforce management process after the forecasting is done, staffing calculations and strategies are in place. The primary objectives of the scheduling process are to meet the staffing requirements as efficiently as possible while balancing stakeholder needs.

- The customer perspective includes a set of expectations based on the competitive landscape and the unique characteristics of the corporate image.
- Employees (agents) are looking for workable schedule that comply with any rules in place and support the company culture.
- The business wants to balance the need to meet service goals and control operating costs.

It is a complex balancing act to meet as many of these stakeholder desires as possible, and requires a more creative approach than forecasting or tracking. Some keys to successful scheduling include:

- Continual drive to improve
- Awareness of change
- Always open-minded
- Eager to test ideas
- Maintain big picture focus

Pre-Scheduling Steps

As the process begins, there are 7 steps that need to be done before creation of the schedules. There may be multiple work types and/or skills involved and each may have its own answers to the steps. These include:

1. Determine hours of operation
2. Calculate the workload (volume X handle time)
3. Identify model for each work type (random vs. sequential work, immediate vs. delayed answer) and calculate the staffing required to meet the service goal
4. Calculate shrinkage
5. Choose coverage approach (balance the overs and unders vs. full coverage in all periods)
6. Determine the schedule horizon (how long the schedule will remain in place)
7. Establish service goals (service level, ASA, response time, etc.)

Calculating Shrinkage

Shrinkage is a planning placeholder that is used to set aside time in the plan for activities that are not yet detailed in the schedules. The staffing must be sufficient to ensure the “bodies in chairs” that were calculated in Step 3 above are in place even when some personnel may be on

vacation, out sick, in training, etc. To make an accurate estimate of the losses that must be accommodated, details of past history are used just as they are in determining workload forecasts. It is important not to just use entitlements such as the number of sick days or vacation days employees have available in their HR benefits package. The actual losses could be more or less, and the actual loss should be used in the calculations. Lunch periods are not used in the shrinkage estimates as this time is built into the schedules.

When planning for months ahead (such as plans for hiring or physical space requirements), most if not all the shrinkage items are not known in detail. We know agents will be on vacation, we just don't know exactly when. Training will need to be scheduled, but we don't know who or for what dates. As the scheduled time is closer such as for next week, we will know those types of items and can build them into the schedule. The shrinkage percentage of loss will be reduced to recognize that these items are already accounted for in the agent schedules.

Even at the beginning of the day, there will still be some shrinkage assumption for such losses as absences, tardies, and lack of schedule adherence.

Here are some examples of shrinkage assumptions. They are based on a 40 hour per week employee. (Be sure to adjust the full-time equivalent hours for your calculations as needed.)

- Breaks – 2 15-minute per day (.5 hours/8 hours) 6.25%
- Vacation – 2 weeks per year (2/52) 3.85%
- Sick time – 4 days per year (4/250 workdays – 2 vacation) 1.60%
- FMLA (US family medical leave act) – 4 days per year 1.60%
- Coaching – 2 hours per month (24 hours/168 hours) 1.43%
- Training – 5 days per year (5/240) 2.08%
- Team meetings (2 hours per month) 1.43%
- Adherence losses (15 minutes per day) 3.13%

  Total **21.37%**

It is unusual to see shrinkage in the US at less than 20% unless a large part of the workforce is part-time. It is also common to see shrinkage at above 40% when the workdays are shorter or there is work other than taking income calls to be done such as research, call backs, email, social media responses, etc. These are all work that must be done so time must be set aside for them, but when they are not built into the details of the schedule, shrinkage percentage assumptions ensure that time will be available without risking the inbound call service goal.

Another shrinkage consideration is that just like workload, it varies by time of day, day of week, and even month of year. If one percentage is use for all time periods, over- and under-scheduling will likely occur. Defining percentage of losses in more detail will help to match the staffing to the workload for each period so that service goals are more consistently achieved.

Another loss that needs to be accommodated is the inability to make a perfect match of scheduled personnel to each period. There will be some over-scheduled times and some under-scheduled times as a results of building schedules that agents will actually work. This loss is called schedule inflexibility and can be 10-15% or more depending on the staffing model. If only full-time personnel are available and the rules are fairly rigid about days off together, timing of breaks, etc., it can be quite high.

Applying the calculation of the shrinkage loss is done as follows:

100% of scheduled time – shrinkage (21.37% in the example) = 78.63% productive time
Assume 30 bodies in chairs required / .7863 = 38 staff needed in the scheduling pool

Do not multiply 30 bodies in chairs times 1.2137. This calculation suggests that 36.4 staff is sufficient and the service goals will be missed.

Schedule Option Decisions

With all the above in place, the scheduling process can begin and we can start to define the structure of the shifts. Below are some of the most common parameters that will need to be decided during the scheduling process:

- **Start/Stop Limitations** - One involves determining if there are any start or stop time limitations. For example, if the center is open 24 X 7 or even late into the night, it may not be advisable to have a shift that starts or stops during the overnight period. Safety of personnel coming and going is a consideration. In addition, there may be extra pay for work during certain hours to take into account.
- **Shift Span** – Span is the total length of the work time including any breaks and lunch. For example, an 8-hour workday might include a 30-minute unpaid lunch period, making the span 8.5 hours total. Definitions for both full-time spans and part-time spans will be needed.
- **Lunch Length** - The length of the lunch period may be a single choice for all agents or there may be a variety of options from 30 minutes to 2 hours or more. Many centers find that agents have different desires for lunch period as some want to bring lunch and go home as soon as possible while others may want to visit the gym or do some shopping on their lunch breaks.
- **Break Length** - Break length is also open for variations. Many use the standard two 15-minute breaks for an 8-hour workday. But some agents prefer three 10-minute breaks or other options. Like a variable lunch length, having a mix of options to use in creating shifts can help to better match of staffing to the constantly changing workload across the day. The interval between breaks is also something that should be established. There is typically a minimum time that the person should work before a break is schedule, and there may be a maximum time between breaks as well. These can be set by union agreement, state regulation, or just the decision of the management.
- **Inter-break Interval** - This is the amount of time (minimum and maximum) between breaks. Some allow a break to be attached to lunch for a longer break, while others might allow the last break to be at the end of the shifts for early departure.
- **Off-Line Events** – If off-phone events, such as status meetings or alternative work activities are scheduled as a regular part of each day's shift, then it may be helpful to identify these and include them into the initial schedule creation process. Keep in mind that shrinkage for these events should have been factored into the calculation of your required staff.
- **Days On/Off** - How days off are handled is the next item to consider. If the center is closed on one or more days of the week, part of that decision is already made. Some centers operate 6 or 7 days per week and identifying how the days off will be offered is

an important item. It may be that 2 days off together is important to some agents, while others may prefer to split their days off. Once again, a variety of options will likely help to make a better fit of staffing to requirements and can also better match agent desires.

- **Extended Patterns -** Some centers find it desirable and practical to schedule more than a single week at a time. These extended schedules may include a full pay period of 2 week or even a month. This may offer the opportunity to schedule agents more hours/days in one week and the next and place 3- or even 4day weekends into the schedules occasionally. This option needs to be carefully considered with the HR and payroll departments and must comply with laws regarding overtime pay. It is often very attractive to the agents so worth the investment to figure out how to make it work. Shift rotations may be part of the multiweek plan as well. For example, agents might work every third Saturday when limited staffing is required. In some parts of the world, agents work a set number of contractual hours over a long period and how those hours can be scheduled is open to match up to seasonal peaks and valleys in the workload

Rules vs Constraints

In defining the schedule parameters, it is important to be clear about the difference between rules versus constraints that govern allowable schedules.

- **Rules -** Most of these will be absolute rules set by law or government such as breaks, Family Medical Leave Act (FMLA). Still others may be contractual including licensing requirements, regulatory expectations or contractual speed of answer penalties or rewards. Union agreements may define shift options, how seniority is applied and how overtime or voluntary time off may be offered. Human resource rules within the company may define how many hours constitute a full or part-time shift, when pay differentials kick in, and any payroll policies that might affect scheduling. There are also rules that apply to individual agents such as availability limitations around a college class schedule. These can be applied to a single shift definition rather than across the entire team.
- **Constraints -** Some rules are a function of the culture and management style of the organization and may be worth analyzing to see if they are serving the purpose they were designed for and are cost-effective. “We have always done it this way” is a common reason for a rule and one that deserve reconsideration occasionally. Typical rules that may be in this category include:
  - All workdays in the week must be the same length
  - Start times can only be on the hour or on the half-hour
  - Start times must be the same every day of the week
  - Breaks must all be the same length
  - Lunch must all be the same length
  - Break/lunch schedule must be the same for every day in a single week
  - Rigid inter-break intervals
  - Days off must be consecutive

Considering Occupancy and Abandon Rate

As schedules are matched up to workload, agent occupancy is determined. The definition of occupancy is the percent of logged in time the agent spends working the contacts vs. sitting in the available state waiting for work. It includes the talk time, the after-call work time, and may also include time the agent spent doing some non-call work serving customers. The calculation is workload hours divided by staff hours logged in over a period such as an hour. For example, if 40 agents were logged in and available to handle work (bodies in chairs) and there were 35 hours of workload in an hour, them 35 divided by 40 equals 87.5% occupancy.

It is critical to understand that occupancy is the result of a specific load of work and the staff needed to meet a specific speed of answer goal. If occupancy percent is the goal, the center must recognize that the speed of answer result must now change to accommodate the work and may go up and down to hold occupancy steady as the workload experiences peaks and valleys.

Abandon rate is defined as the percent of callers who hang up after reaching an agent queue but before an agent answered. Those who abandon while in the IVR menus are dealt with separately. Calculations of goal achievement vary in ACDs and WFM systems depending on how abandons are figured into the calculation. Some count all abandons regardless of how long the caller was in queue, other might only count those that abandoned after a minimum wait (such as 5 seconds), while others only count the callers who abandoned after the number of seconds defined in the speed of answer goal. Synchronizing all systems to a common calculation is strongly recommended.

Using an expected wait announcement can impact the abandonment results. When callers are told there is a longer than usual wait, they may decide to hang up and dial back in later. If there is a callback system in place, callers who choose that option will hang up and wait for the system to call them back when an agent becomes available. While most callers are available and answer these call backs from the system, some will not be reached. The treatment of these abandons can skew the reporting results so care is needed in understanding how the systems work and what goals may be appropriate.

Some centers try to set an abandon rate as a goal for their center. This is particularly true when each call is a revenue opportunity. However, this is problematic as abandons are a function of human behavior/decisions and can vary even among the same customer base. There is no accurate statistical prediction method and no good mathematical model to use to determine staffing to an abandon goal vs. a speed of answer goal.

Another consideration is whether to make an assumption that some percentage of abandons should be built into the staffing plan. If the center typically has a 20 percent abandon rate, staffing to the actual number of successfully handled calls will required fewer staff than assuming that all calls will need to be handled by an agent. However, staffing to the lower assumption will almost guarantee that the abandons will occur since there will not be enough people available to serve all the calls as they arrive. In a situation where abandon rates are relatively low (less than 5 percent in the busiest periods), it is best to calculate staffing to handle all calls. However, if the center is habitually understaffed, taking out the workload represented by the abandoned calls may be appropriate to help utilize the available personnel in the best way possible.

Scheduling and Assignment Strategies

There are two basic approaches to bring the staffing requirement, the schedules, and the employee schedule assignments together.

- Business-First Process - In the business-first approach, the staffing requirements for each period are calculated and schedules are created to meet those requirements first within the parameters acceptable to the business and employees (established in the rules for scheduling). Once these "ideal" schedules are created, they are assigned to the individual agents based on the agent's defined schedule preferences.
- Staff-First Process - In this approach, the staffing requirements for each period are calculated. Schedules are created one agent at a time while trying to balance the agent's preferred shifts, the remaining staffing needs in each interval, and allowable scheduling parameters (established in the rules of scheduling).

Both approaches are viable in many centers because both identify and balance the business needs and the employee preferences, but business-first assures that the business needs are met first (within acceptable limits to the employees) while staff-first assures that acceptable shifts are created for each employee first (within the limits of the business needs).

While neither in inherently better than the other, there are certain instances where one may provide a bit better fit than the other. The business-first approach may be preferred when operational efficiency is a top priority or there are extended hours of operation that may be difficult to staff because it will assure the schedules are created for all necessary shifts. It is also a good approach where understaffing is common because it creates shifts needed by the business even if there are no staff to take them, and then these can be used for recruiting and assignment to newer personnel. On the other hand, a staff-first approach is often preferred where each employee needs to be considered individually, such as when employees tend to have uniquely contracted or assigned schedules, where the center experiences high attrition, or has a high investment in each employee. The staff-first approach is also preferred where overstaffing frequently occurs because it assures that a shift well be created for each employee even if the extra hours are not needed.

Both approaches assign employees to shifts in some sort of ranked order (although this may be a random order where ranking is not allowed). The first ranked individual agent is considered for schedule assignment first and gets a schedule based on their personal scheduling preferences. In the staff-first approach, because schedules are created one employee at a time, this is done at the same time the schedule is created. In the business-first approach this occurs as a secondary process to schedule creation and may be accomplish by manually making assignments, using some sort of automated preference-based process, or through formal shift bidding processes. When using staff-first approaches or business-first with automated assignments, the agents must provide a detailed list of preferences for the process to use such as days off, start times, lunch length, etc. The last choice should always be "any shift" to ensure that the process can match the agent up to something even if he is the last person to be scheduled and there aren't many choices.

Both processes require a ranking order to determine the order in which agents will be matched up to schedules. Commonly used criteria for ranking include seniority, performance scores or some combination of them. When performance scores are used, it is important to ensure that

the metrics used are fair, accurate, and timely. The criteria should be communicated well in advance of the initial use and at each point where the metrics are changed. It is a good practice to involve some agents in the design to ensure greater acceptance. The calculation of the scores should be done regularly and certainly just prior to each new schedule assignment process.

Another option some centers find useful, and is the ultimate staff-first practice, is to provide performance rewards to a small percentage of the highest performers. In this case, the agents may have the option to design their own shifts or perhaps to work from home.

Scheduling Secondary Work

Many centers today handle more than inbound calls. This work may be chats, emails, social media, research or other back office tasks. While many ACDs today can blend the work so that an agent might receive a call or a chat as the next work item in queue, many centers find it more efficient to schedule off-phone blocks of time for these other tasks. This allows agents to concentrate of one media and process at a time, typically reducing handle time and errors.

Whether using an automated tool or a manual process, the steps for scheduling this secondary or off-phone work tends to be similar. First, determine the secondary workload requirements on a daily and intraday basis. Second, determine the combined workload requirements by adding the secondary workload into the primary requirements as shrinkage or extra workload hours. Now, create schedules for the combined workload requirements. Once those schedules are created, analyze the inbound call schedules to identify any periods of overstaffing and utilize these periods as the blocks of time to be utilized for the secondary work. Not all periods of overstaffing may be usable for secondary work assignments because there are often business rules or guidelines that govern the scheduling of secondary work blocks. These constraints include limits on minimal net staffing, the length of a work block, start time limits, business windows for each type of work, and the shift windows. For example, the net staff limit requires that there be at least 1 extra person in the schedule dedicated to the inbound calls, so only periods with more than 1 overstaffed can be utilized. The block duration might be limited to 30 or 60 minutes, so we can't schedule employees for only 15 minutes of secondary work. The business rules may state that no agents can be taken away from the inbound call queue during the busiest hours of the busy days or periods when lunch hours overlap and reduce staff availability.

Summary

There are a lot of issues to be considered in developing a scheduling strategy. Establishing accurate shrinkage assumptions will set the stage for the scheduling process. While there are rules that cannot be violated such a government regulation, many centers also have rules that are really just the way things have always been done. Analysis of the options and their impacts should be undertaken occasionally to ensure that rules and desires are separated and applied appropriately. Balancing the needs of the business, the expectations of the customers, and the desires of the agents is a complex process requiring the skills of a diplomat. As companies

move the handling of more types of work in the centers, and as workforce management processes are applied to back office environments, finding ways to integrate the mix of work in a way that meets all stakeholder expectations will become even more challenging.