

## A d v a n c e d T o p i c s

### Our Old Assumptions Don't Hold: Requirements, Adherence, and Non-Traditional Channels

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#### Things Are About To Become Much Busier For Us

If there is one obvious contact center trend in the last few years, it is this: the management of the "new" contact center channels and multiple sites/regions is rapidly becoming consolidated. Email, chat, instant messaging, branch offices, back-office and casework processing across multiple centers and regions are being handed over to contact center planners in order to take advantage of the hard earned expertise we have each developed. It is thought that many of the economies we have brought to our call center plans, and some of the mathematical wizardry we possess, can be brought to bear to help our companies again do more with fewer resources.

We workforce management types are about to get a lot more work and a lot more responsibility.

This makes a whole lot of sense. Our companies have other operations that are large, people-intensive, and queue-based. Sounds like a job for the workforce management gurus!

To complicate matters, these contact types – email, chat, instant messaging, back-office and casework processing – are expected to be handled by groups of multi-skilled and multi-tasked agents and we are expected to have in our bag of tricks the methods and computing power to staff and plan for these more complex operations.

If you aren't responsible for these lines of business yet, you soon will be. Congratulations, I think.

#### Let's Discuss Complexity First

In the world of computer models (like our contact center strategic planning and workforce management systems) there is a concept called computational complexity. Basically, mathematicians can look at a math (or business) problem and determine how hard it is for a computer to solve.

We are getting to the point where the problems we are trying to solve are very difficult, not just because of our lack of decision support systems, but because the math, by its very nature, is intrinsically tough. The scheduling problems and the planning problems associated with these more complex multi-channel operations are very computationally difficult (Google NP-Hard Mathematical Complexity).

So that's difficulty number 1.

#### But We've a Bigger Problem: Current WFM Concepts May Not Hold

We've been doing a fair amount of research into these newer problems, and we may have uncovered a truth that I hadn't heard from others, and it is this: many of the concepts and constructs associated with our traditional workforce management processes probably do not have much meaning in this new, more complicated world.

The ways we traditionally develop our plans (first we forecast, then we build requirements, and then we build schedules), the way we track schedule compliance, and the ways we manage our employees may not be ideal or even correct in a multi-channel environment.

Here is an example. Quite a few years ago, while working at a very large collections center, I was responsible for scheduling our collections agents. These calls were a combination of inbound and outbound calls.

When trying to develop work schedules, it was very clear that the standard models – build requirements, then schedules, then track adherence – did not make as much sense for the outbound component. What, after all, is an outbound requirement? The answer is, of course, there is no outbound requirement, because a calling attempt can be made at any time on any day.

There is, however, outbound calling efficiency; outbound calling attempts to a home address are much

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more effective early in the weekday morning, in the evenings, and on the weekends. However, the concept of a requirement – where agents absolutely must be on the phones at a particular time – has no real meaning.

So what did that mean to our scheduling process? It meant that the standard mathematical algorithms were not applicable. We had to develop our own methodologies and algorithms, which we did. We later even went so far as to allow agents to develop their own outbound work schedules – but that is a very cool story for another day.

These are the next batch of difficulties.

### **We Need New Models**

As in the previous example, the outbound math model is very different from our standard Erlang model. An outbound operation is different from an inbound operation which is different from an email operation which is different from a processing operation. And because of this, the models, in order to be even moderately accurate, must be different too.

### **Standard Erlang Does Not Apply**

To determine the relationship between staffing, handle times (or servicing standards), contact volumes, and operational performance, you need to develop an accurate model of your operations, with the proper queuing structure, the correct operational metrics, and the appropriate service timeframes. For example, a staffing model with a 24-hour service standard is not well served by a 15-minute interval requirement model. The only model that makes sense in such a situation is one of much longer duration than the service standard and the average processing times.

Further, deferred work, by its nature, involves deciding to warehouse contacts for some period of time. This warehoused work must be considered when developing staff plans; a critical part of your staffing decisions involves tracking and managing this backlog of work tasks (more on this in a bit).

### **Old Concepts Don't Apply: Requirements, Adherence, and Occupancy**

Let's talk requirements first. For outbound contact types it is clear that the concept of the traditional staffing requirement is nonsense. How about email?

For work that can be deferred, work like email and back office processing, the concept of interval requirements has much less meaning. If your performance standard is expressed in several hours to a few days, what does it matter that you have employees show up to work at exactly 9:00AM? Further, a requirement that X people work in hour 1 and Y people work in hour 2 is probably as effective as a requirement that Y people work in hour 1 and X people work in hour 2. Or X+Y people work in hour 1 and no people work in hour 2. See where I am going with this? The whole concept that "you have to have so many people on the floor at this interval" makes little practical sense.

What does this mean to our standard view of our daily staffing? Our standard approach is to look at an over/under graph or report to determine if we need folks to work later or go home earlier. Without a solid requirement calculation, this over/under picture is, well, not too terribly clear. Over what? Under what? How does this real issue affect our management of interval staffing?

Let's extend this to the concept of agent adherence. For outbound contacts, email, and back office processing, does the concept of non-adherence have much operational value? I think it probably does not, except as a means to oversee our agent's productivity (in a Big Brother sort of way). Simply, does it matter if an email agent returns from their break 10 minutes early or late as long as we get the proper amount of work from them? In most cases, I think the answer is no – it does not matter to our efficiencies that an agent is a little sloppy with their schedule adherence.

How about agent occupancy? As far as I can tell, the concept of occupancy for these other contact types has meaning only insofar as agent task completion times (e.g. AHT) and expected workload are matched with the overall daily or weekly staffing levels. It has less to do about the economics of the operation. While semi-random inter-arrival rates of contacts will be similar to that of call centers, the email or back office operation is expected to almost always require a queue and, hence, occupancy is by definition near 100%.

Also, for the chat contact type, the number of concurrent chat sessions is a variable that changes our overall definition of occupancy. For example, an agent who can handle three chat sessions at a time may be fully busy on one chat session, but still only be 1/3 occupied.

These are also difficulties we must overcome.

## The Concepts of Capture, Purity, and Queue Ebb and Flow

Any time that agents are expected to be multi-skilled (especially having skills across multiple channels), the concept of capture and purity becomes super important. These two metrics represent a way to prioritize staffing solutions in an environment that has a whole bunch of potential “right” answers.

Here is an example, and then we’ll discuss each metric’s definition.

Let’s say I have two call types and two agent groups, and let’s call them customer service and sales. Given my druthers, I would prefer my sales calls to go to my sales agents, and my customer service calls to go to my customer service agents, but for cost reasons, we cross utilize these groups. All things being equal (like handle times and wage rates), if my agents can handle either sales or customer service contacts, then the “optimal” staff plan would necessarily include solutions that are any combination of sales or customer service agents. For instance, I can staff with 100% sales agents, or 100% customer service agents, or any combination in between, and I would be “optimally” staffed.

But we know that this is not optimal, because I would like each call to go to its right place – I’d like my sales folks to work on sales and my customer service folks to work on customer service calls.

This is where the concepts of capture and purity come in (borrowed from a very smart customer of ours, by the way).

Capture rate is simply the percentage of contacts that end up where you want them to end up. In our example, the sales capture rate is the percentage of sales calls that are answered by a sales agent.

Purity rate is merely the percentage of time that an agent spends working the types of calls we want them to work. In our example, the customer service purity rate is the percentage of the time a customer service agent is on the phone with a customer service call.

These concepts are critical to determining your truly realistic optimal staffing levels. You can add an additional constraint – your capture rate constraint – to your staffing optimization to get to an answer that is truly optimal. For instance, we can staff both of our customer service and our sales agent groups to hit both our service goals and our capture rate goals. This creates a staffing problem that has as its solution an answer that is both at least cost and hits your servicing strategy preference. In my opinion, any multi-skill or multi-channel plan that does not include a concept like capture rate is a guess or has a hidden capture rate assumption (e.g. a resource allocation assumption) that you need to explicitly understand.

Finally, deferred work, like email, leads to queue behaviors that have a specific tipping point. That is, in your operation at any point in time, you are most likely to be either building a queue or working down a queue. This is a very good thing; it allows you to disconnect staffing requirements from the work arrival patterns. Unlike the call center environment, processing centers allow managers to spread the work across their peaks and valleys of arrivals, saving staffing costs.

The trick is to make sure the queue lengths are never too long or nonexistent. The tipping point is the staffing level that turns a queue building operation into a queue reduction operation.

Does your work backlog ebb and flow in your current email staff planning model? Can you account for work that remains at the end of a day or week in your staffing plan? Do your service metrics include queue counts at various servicing timeframes? If not, you don’t have a workforce model that mimics your real world operation, and it is time to build a better one.

## Tactical and Strategic Plans Start to Blur

There has always been a bright line between strategic plans and tactical workforce management plans. But in contact types that involve work that can be deferred and long servicing times, the more pertinent question is not scheduling, but long term staffing. It is more important that you have the right number of agents trained and on the premises than it is that you have rigid and exact interval schedules. Interval plans aren’t as important.

The strategic planning problem (determining when and where to hire our agents over longer time horizons) for these types of operations is more important than traditional tactical workforce management. Improving daily agent planning has much less value in these operations than in our regular inbound call center operation. You need to solve your strategic planning problem well to get efficiency associated with your planning process.

## It is Time to Revise Our Systems and Our Thinking

These new operational constructs and these new approaches have our workforce planning vendors working to develop new algorithms and approaches to help us solve these bigger problems. There will be (and absolutely should be) a slew of modeling approaches newly developed, and these need to be skeptically tested by all.

The most basic challenge of us workforce planning vendors, whether we provide tactical workforce management software or long-term strategic capacity planning systems, is to prove to you that our computer models of your operation accurately represent your actual operation. It is where the rubber meets the road.

With all these changes, the stability of our standard systems is in flux, and you need to know that your planning tools are representing your operation correctly.

This is the real difficulty. And we're all working on this.

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