

Handling Special Calls with Skill-Based Routing Using Irene

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Special Calls

There are a number of times when a company wants to introduce a new product but doesn't want to train its entire call center staff to be able to handle this new product. It just doesn't make sense to train everyone when the demand for the product will be initially very small. But, if a dedicated team is trained to handle only those special calls, call managers know that they will have to operate this team very inefficiently in order to get reasonably good grades of service.

Small Team Inefficiencies

One of the basic things call managers know about small teams is that each agent can handle fewer calls per hour in order to get the same speed of answer performance compared with a large team. The graph below points out the fundamental problem with small teams. Here, we are assuming that the average call handling time is three minutes and that we want our calls answered with a 30-second average.

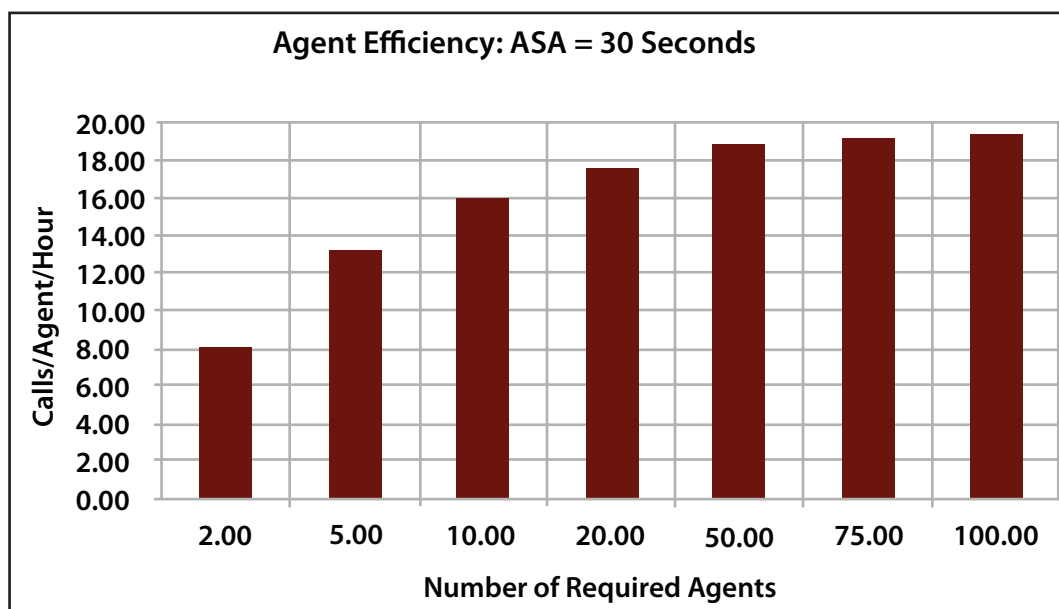


Figure 1

From the figure we can see that two agents can each only handle eight calls per hour in order to achieve a 30 second average speed of answer, whereas 20 agents can each handle nearly 18 calls per hour while still meeting the same answer objective. So, if we want to insure that our new product team gives good service, we must pay a high price in productivity.

The Solution – Skill Based Routing

Many modern ACDs have “skill based routing” capabilities, which the suppliers tout as a great cost saver. But what exactly is “skill based routing”. Well, that depends on who you talk to. Figure 2 is a depiction of one version of “skill based routing”.

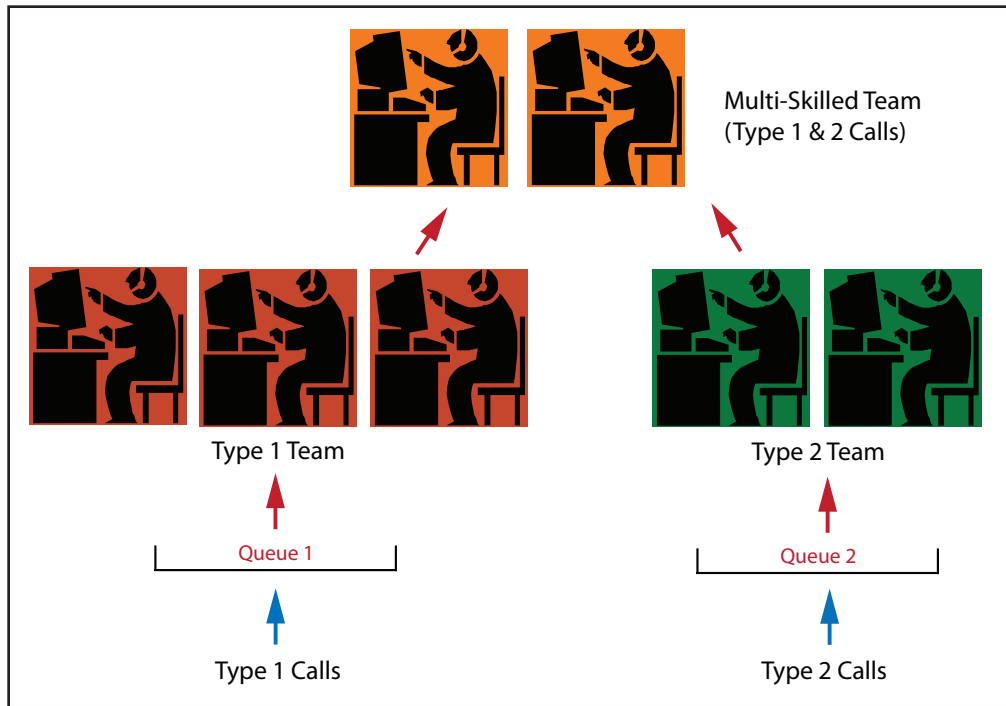


Figure 2 - Configuration 1

In this sample configuration we indicate, for simplicity, only two types of calls, although there could be more in practice. The general idea behind skill-based routing is to be able to somehow gain the efficiencies of large teams by using agents who are “multi-skilled” and can handle multiple types of calls. In the Figure 2, Type 1 calls are enqueued for service in one queue, while Type 2 calls are enqueued in another queue. You can think of Type 1 calls as being the “special” calls for the new product, whereas Type 2 calls are the ordinary calls. Type 1 agents can only handle Type 1 calls, and Type 2 agents can only handle type 2 calls. Multi-skilled agents can handle both Type 1 and Type 2 calls.

In the configuration depicted in Figure 2, when a multi-skilled agent becomes free, it looks at both queues and serves the call request with the longest delay. The motivation for this configuration is that the use of multi-skilled agents would provide for increased, large team efficiencies. We will examine some examples in a minute.



Example Use of Configuration 1

What types of efficiency gains can be expected from the use of skill-based routing as indicated in Configuration 1? First, we have to make some assumptions. A key assumption that is often forgotten when applying skill based routing is how effectively multi-trained agents can handle each of the call types. If multi-trained agents cannot handle calls with the same effectiveness as the specialized teams, then efficiency gains will not be forthcoming. Having said that, in our example, we will still assume that they do for simplification.

In our first example, for simplicity we assume that the Average Hold Time for all calls handled by all types of agents = 100 seconds, and the Type 1 load is 36 calls in 15 minutes, whereas the Type 2 load is 360 calls in 15 minutes. If we were to handle each queue with its own team, in order to get a 15 second average answer Irene indicates that we would need six agents to handle Type 1 calls and 43 agents to handle Type 2 calls, for a total of 49 agents.

Type 1 Calls	Type 2 Calls	ASA	Type 1 Agents	Type 2 Agents	Multi-Skilled Agents
36/15-min		15	6	0	0
	360/15-min	15	0	43	0
36/15-min	360/15-min	15	3	34	10

Table 1

Suppose now we allow some agents to be cross-trained to handle both types of calls. Irene indicates the optimal mixture of agents is three Type 1 agents, 34 Type 2 agents and ten multi-skilled agents, for a total of 47 agents. This is a saving of two agents over having separate teams. Our studies indicate that although this is the optimal mixture, small variations between groups does not significantly alter the service. It is good to have this kind of robustness. Table 1 below summarizes the results

Rules of Thumb

Our studies indicate that there are some configurations that are better than others in applying skill-based routing. The following are some general guidelines that may be useful in considering whether this form of skill-based routing is beneficial.

- ✓ If the multi-skilled team takes 5% longer to handle both types of calls, skill-based routing may reduce the overall number of agents required.
- ✓ Optimal benefits are obtained when the size of the multi-skilled team is above 20% of the total team required.
- ✓ Optimal benefits are obtained when the sizes of the specialized teams are proportional to their respective loads. In the example above, the Type 2 load is 10 times that of the Type 1 load, so the Type 2 team should be about 10 times the size of the Type 1 team.



Irene automatically does the right amount of scheduling that adheres to these guidelines.

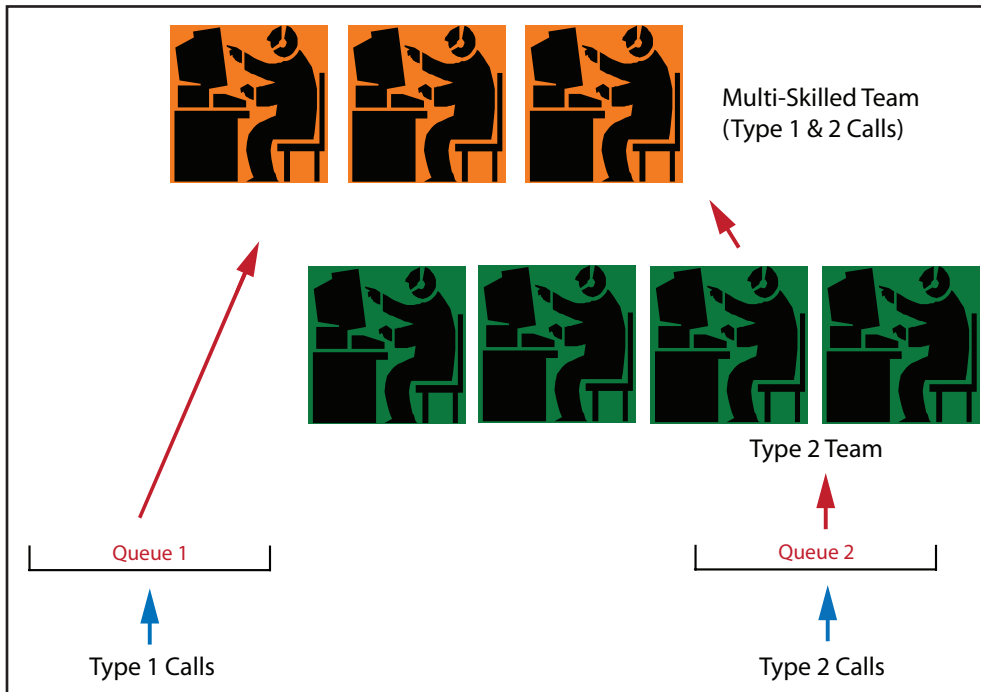


Figure 3, Configuration 2

Another Skill-based Routing Configuration

Another ACD configuration that is called “skill-based” routing is depicted in Figure 3 above, which we call Configuration 2. Here, only Queue 2 has a “primary” group of agents, Type 2 agents who can only handle Type 2 calls from Queue 2. There is no “primary” group of Type 1 agents for Queue 1. Instead, there is a group of multi-skilled agents who can handle both Type 1 and Type 2 calls from both Queue 1 and Queue 2. This is not just a special case of Configuration 1. The difference here is that the Multi-skilled agents can only handle calls from Queue 2 if there are no calls in Queue 1. Thus, they give Type 1 calls total priority over Type 2 calls.

Example 2 – An Application of Configuration 2

As before, we will assume that the Multi-skilled team can handle Type 2 calls as efficiently as the Type 2 team. We will assume all average handling times are 100 seconds. We will assume that there are 36 Type 1 calls on average in a 15-minute period and that there are 360 Type 2 calls on average in a 15-minute period. We assume that for both types of service we want the average speed of answer to be less than 15 seconds.

As in the previous example, we would require six agents to handle Type 1 calls if there were handled separately and 43 agents to handle the Type 2 calls separately. On the other hand, if we use configuration 2, Irene predicts that we would need 37 Type 2 agents and 10 Multi-skilled agents, for a total of 47 agents. This results in a saving of two agents. Table 2 (facing page) summarizes the results of this example.



Type 1 Calls	Type 2 Calls	ASA	Type 1 Agents	Type 2 Agents	Multi-Skilled Agents
36/15-min		15	6	0	0
	360/15-min	15	0	43	0
36/15-min	360/15-min	15	0	37	10

Table 2

Other Variations

Other variations of multi-skilled routing are also possible. The primary variation is to have Configuration 1, but allow for priority handling between the two queues. This would allow for the different services to have different grades of service. Without priorities, you have to force the configuration to so that the most stringent grade of service is satisfied. Sometimes, this does not result in any savings.

Summary

ACD suppliers tout skill based routing as a cost saving measure, but often without acknowledging the fact that this is only true under certain assumptions on average hold time and the proportion of agents of each type that are available. If these assumptions are not met, then skill based routing may not be the optimal configuration to use. It is necessary to use workforce management software such as Irene from ISC to automatically recommend the best configuration for the occasion.

About ISC

ISC provides Irene, the most advanced workforce management system available to contact centers today. Irene forecasts customer service demand and delivers schedules that support performance targets, agent preferences, and business goals. Irene reduces payroll costs, improve service levels, and increase employee satisfaction. Whether you are managing thousands of agents globally or several dozen agents from one site, Irene meets your needs.

ISC was founded in 1973 to provide training development and consulting services to the call and contact center industry. From the beginning, ISC has been dedicated to providing measurable, sustainable improvements in the performance of people, processes, and technologies that shape the customer experience. In 2000, ISC introduced Irene. This award-winning software uses innovative technology that provides unparalleled scalability and dramatic advancements in forecasting and scheduling capabilities for contact center managers.

