Client-Server Computing and the Call Center

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What Is Client/Server Computing?

You hear the "client/server" buzzword everywhere these days, it seems — and usually in the context of some arcane technical discussion. But client/server computing is going to have an important effect on call centers, because it allows you to do what you've always wanted: add new features and capabilities to support your service reps, without having to touch those old, difficult-to-change data processing systems. And as you'll see in a moment, client/server computing isn't really hard to understand. Mostly, it's just common sense.

Simply put, client/server computing is organizing an information system as a co-operating group of independent, modular subsystems. What's new about this, you ask? It's the way people have always worked: Everyone has his specialty, and groups of people work together to accomplish an overall task.

But until recently, this is not the way information systems have worked. Take airline reservation systems, for example. Designed decades ago, they operate on the principle of a huge central computer system that handles all the tasks involved in booking an airline seat: maintaining the database of available seats, administering booking procedures, and even arranging each character of text on many thousands of reservation terminals worldwide.

The Problems of Monolithic Design

The idea of "centralized" systems was developed when computing power was expensive and hard to install outside of a "glass house" computer room. Centralized design makes a single computer a "jack of all trades," sharing its time and resources between many tasks and many users. What's wrong with this "monolithic" approach? Let's look at two problems that directly affect call center operations.

The first problem is that ease-of-use often suffers. In the call center, the user is the service rep. To make the CSR more productive, we would like the system to be easy to use. The ideal would be a system so straightforward that no training was necessary. But this kind of user interface takes computer power to manage — the kind of computer power that is cheap to provide on the desktop, but expensive to provide from a central site.

The second problem is our ability to change the system to adapt to new business practices or campaigns. We'd even like CSR's on different projects or with different duties to have interfaces customized to their work. But central systems are more difficult to change, because changes affect everyone and must therefore be painstakingly designed and thoroughly tested.

The next time you check in for an airline flight, peek over the counter and look at the reservation system screen. You'll see the consequences of a monolithic, centralized system design: a cryptic interface that was chosen to optimize central computing and network resources, but which requires extensive training before an agent can be productive. If you have a choice, this is not the kind of system you want to give your CSRs!

The Alternative: Client/Server Computing

Now that computing power is relatively cheap and conveniently packaged to fit the desktop, we do have an alternative: client/server computing.

Let's say we want a better user interface for our CSRs. We can put personal computers on each CSR desk, thus gaining the computing power to generate more sophisticated displays and the flexibility to change this interface as we wish.

But we still need to get our database information from somewhere, and we certainly don't want to recreate the old mainframe system's database. For many of our applications, a central database makes sense anyhow. What do we do?

We get the old and new systems to co-operate. The CSRs enter queries into the desktop systems, and the desktop systems reformat and forward them to the old mainframe system. The mainframe system answers the queries, and the desktop system receives and reformats them for the CSRs. We get consistent data from a centrally administered database, but we get local flexibility to display and manipulate that data as we wish.

See, I told you: It's just common sense. The rest of the issues around client/server technology revolve around details — such as choosing specific networks, database formats, message formats, and the like. Details that are generally unimportant in terms of their impact on the business aspects of a call center.

Now Let's Add CTI

There's one additional quirk to call centers that doesn't always show up in other business applications: The need for computer-telephone integration, or CTI.

Call centers are, by definition, groups of people who do business over the phone. Which means that the telephone calls should be synchronized with information systems for best productivity and quality customer service.

Getting your telephone and information systems synchronized is a lot easier than it was a few years ago. Most major switch vendors offer CTI links as optional features, and most major computer vendors do likewise. So you would think that all you need to do is buy the correct options and hook them together with a cable.

It's not quite that easy. You see, what the CTI links give you is telephone events. The switch can pass along important telephone events to the information system — events like "Here comes a call," or "This call was just transferred over there."The catch is that your information system has to do something to react intelligently to these events. And this means that someone has to teach your information system what to do when the phone rings.

Which brings us back to the discussion of monolithic central systems versus client/server systems.

If you have a non-client/server system, you will need to connect your CTI link into that system. Then you will have to reprogram your application software for that system to teach it what to do when the phone rings — for example,

to pop up the database record corresponding to the caller. Making these changes to a central system is difficult and risky, and must be done by your already-busy MIS staff. And it won't work at all should your CSRs need to see records from two or more central systems when the phone rings!

On the other hand, CTI automation is much easier to install using client/server principles. Remember the desktop personal computers from before? All we need to do is deliver the telephone events from the CTI link to the appropriate desktop system, and teach that system what queries to send to which database system (or systems) when the phone rings. The rest happens automatically, just as if the CSR had entered the query manually.

How do we get telephone events from the CTI link to the appropriate desktop? That's easy too, if you use products from a computer vendor whose CTI products support the client/server approach. The vendor will provide you with a CTI server, which is connected to the switch's CTI link. This server is connected to the same data network which connects the CSRs' personal computers, and it uses that same network to distribute the telephone events as necessary.

What If I Don't Have Client/Server Systems?

No problem. It's easy to shift from a monolithic system to the client/server approach. In fact, you don't even have to change your original mainframe system, nor do you have to move all your users to the client/server approach at the same time.

This is possible because you can use the existing access to your original system — probably through so-called "dumb" terminals — for client/server access as well. Your new desktop systems (or another new intermediary, or gateway system) can generate the necessary query commands to make your old mainframe system fetch the data you need. The new system can also "read" the data coming back from the old system, pick out the meaningful information needed by your users, and display it in whatever format you want.

This whole process is so invisible to the old system that you could install client/server systems in your call center and the MIS manager might never know! Common sense tells you, though, that you ought to plan this migration carefully with the MIS staff. Over time, for example, they may want to eliminate the old "dumb terminal" access methods — which, after all, consume unnecessary resources on their central equipment — and substitute query messages better suited to client/server-style system interaction.

How About Voice Response?

Voice response systems, and their close cousins, voice messaging systems, are an essential part of call center automation. And you need to consider them as an integral part of the client/server picture. Think of a voice response system as just another group of CSRs, and look at the computer that drives the voice response system as an equivalent to the CSRs' desktop systems.

Surprisingly, very few voice response systems are made to participate in a client/server enviroment. Most are made to fit the old monolithic, centralized model and thus support only two kinds of connections: a "dumb telephone" connection to the telephone system, and a "dumb terminal" connection to the information system. These systems can fetch data from the mainframe and speak it to a caller, but they have no way of sharing information over the network with other systems and they cannot receive or process telephone events from a CTI server.

For easy integration into a client/server environment, you'll want to look for the same things in a voice response system that you look for in desktop systems: full client/server network connectivity, flexible user interfaces (which in this context means good script generation tools), and the ability to receive and process telephone events from your CTI server.

How Do I Get Started?

One of the exciting things about client/server computing is that it makes trials, pilots, and other kinds of demonstration projects much easier and less risky. So you may want to try out these ideas in a small-scale demonstration of some kind. Demos are a great way to get a feel for what client/server and CTI technology can do, and they can help you show senior management the business benefits that CTI can deliver.

If you have some good desktop system people in your company, all you'll need is the right tools and advice from a good client/server computing company. If you don't have desktop system people available, ask your computer vendor for help or hire a systems integration firm. Do a trial project first, so you can get a feel for what the final result should be. And in any case, because you're in the call center business, don't forget to choose a vendor who has both client/server and CTI experience!

So don't let the client/server buzzword scare you away. The concept is really just common sense, and applying that concept to your call center can bring concrete benefits that will affect your day-to-day operations. ■

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