Universal Queuing™: A Cookbook for Transforming Your Call Center into a Contact Center

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About Callfinity®

Callfinity provides the easiest-to-use intelligent tele-communications applications for contact centers, service providers, and enterprises. Since 1999, over 300 customers in six countries around the world have selected Callfinity's on-premise systems, hosted services, and hybrid-hosted solutions. For more information about Callfinity, please visit Callfinity's Web site at www.callfinity.com or call (888) 480-1080. Callfinity is a registered trademark of Callfinity, Inc.

Everyone can cook, you just need the right ingredients

Everyday life transforms, technology evolves, communication methods advance, and organizations battle to stay ahead of the competition. Transformation is essential to survival. You have to see one step ahead or fall two steps behind. In the telecommunications world, the way we communicate is shifting and taking on new forms. Customer calls become online chats, poor customer service is broadcast to millions through social media networks, and agents need to be trained and enabled with technology to deal with the deluge.

Your contact center solution must transform with advancing technology. To be successful, your business must possess the ability to communicate with all of your customers, regardless of their preferred method of communication. The technology you choose can streamline the flow of information between employees and customers while providing administrators with the tools they need to configure their business rules, elevate employee performance, and ultimately increase customer satisfaction.

In this white paper, we'll discuss how transforming your call center into a contact center can make you more flexible and more efficient. We'll begin by providing some background information on traditional call centers and then explain how a move to a contact center is necessary to keep pace with ever-changing technology. Next, we'll discuss some Callfinity ContextACD™ features such as Universal Queuing™, Prioritized Skill Routing™, and "push queues", and show you how technology like this can enhance customer interaction and agent performance. Finally, we'll compare hosted and on-premise contact center solutions, discuss which model may be best for your business, and explain how Callfinity's HybridHosted™ technology combines the best of both on-premise and hosted systems without any compromises.

Define the difference between a call center and a contact center

A **call center** is often described as an office where inbound and outbound calls are transmitted via telephone. Traditional call centers typically employ staff in customer service, sales, or support roles.

For years this traditional call center format worked well for one reason: customers wanted to communicate via telephone. However, with the introduction of email, and live chat, IM, social media, and other interaction methods, call centers were forced to deal with these other interactions as well. The result marked the birth of the contact center. A **contact center** combines the role of traditional call center with the ability to support fax, email, chat, website inquiries, and other types of customer interactions.

Options for existing call centers

There are many ways an existing call center could start to interact with customers using other methods besides telephone calls. For example, a call center could:

- **Purchase a separate chat system** and dedicate agents to it
- **Use Microsoft Exchange** for email, or an application provider designed for email response
- **Buy** an expensive CRM system
- **Deploy a hosted CRM system** to put messages into "pull queues" (see section called "Push queues vs. pull queues" on pg. 4 for more info on "pull queues.")

Although options like these, and others, will allow you to interact with customers in multiple ways, the efficiency of your operations and the effect on your customers is far from ideal. The main disadvantage of using some of these options is that the success depends upon trusting your agents will make the right choice. Your experienced, most talented agents might be trusted to respond to the most important emails first, for example, and to never forget about an email, but that clearly doesn't scale well. The inevitable end is that some interactions will be inappropriate or, worse, missed altogether. The second disadvantage of systems like these is that they aren't linked so they underutilize your agents' availability. Phone calls go to one system, emails to another, live chat to a third, faxes to a fourth, etc. The only way, therefore, to manage a large team is to split them up and dedicate a specific interaction type to a smaller group of agents. In this case, agents dedicated to live chat may be twiddling their thumbs when your call queues are completely full. Why should even one of your customers have to wait longer in a call queue when you have perfectly capable email/chat/whatever agents available to take their call?

Pouring through the contact center advantage

If your business still has a traditional call center, chances are you've experienced some of the issues from the previous section. **Becoming a contact center can alleviate many of these problems.** Whereas call center technology only involves telephone calls, an integrated contact center system allows administrators to distribute all these interactions to agents using the same application suite.

For example, your call center could technically become a contact center by simply buying a solution that handles multiple types of interactions under the same umbrella. That way, when live chat queues are empty and call queues are packed, administrators can move agents as needed.

However, not all contact center systems take it to the next level. Unlike other contact center solutions, Callfinity's Universal Queuing blends all interaction types and delivers them to all agents without having to separate agents into individual functions, and also without manual rebalancing by administrators. Simply put, Universal Queuing means automatically and simultaneously sending the right interaction to the right agent at the right time.

Blend interactions with Universal Queuing – Stir until smooth

Universal Queuing takes the concept of blended interactions further than other contact center systems. Not only does Universal Queuing blend all inbound calls, outbound calls, emails, live chat, faxes, and voicemails, it also uses proactive decision making to assign the most important interactions to the most appropriate available agents.

An example will help demonstrate the added value of Universal Queuing. Let's say a contact center has 10 agents to handle both emails and telephone calls. Agents 1 through 5 are responding to emails while agents 6 through 10 are receiving phone calls. With other systems, if the call queue is slow and the email queue is overflowing, agents 6 through 10 are unavailable to work on emails since they've already been dedicated to the phone queue. Universal Queuing, however, allows agents 1 through 10 to receive both phone calls and emails in a blended fashion. All agents can get all types of interactions and as a result, the contact center is more efficient.

Callfinity's ContextACD implements Universal Queuing, but also includes important characteristics: push queues, and prioritized skill routing.

Push queues vs. pull queues

Some contact center software uses a concept of "pull queues" to distribute interactions. With a **pull queue**, agents simply 'pull' an interaction from a specific queue to which they've been assigned. The problem with pull queues is that you're relying upon agents to do the right thing: some won't pull one immediately when their last interaction ends, and some won't pull them in the right order. With pull queues, the success of a contact center depends too heavily on humans making the right decisions and taking the initiative to grab the right interactions at the right time.

Push queues are better. Where pull queues rely on agents to pull interactions, **push queues** proactively distribute interactions to agents without giving the agent a choice. As a result, agents always receive the right interaction at the right time. Another advantage of push queues is that work load can be more easily predicted: administrators can see exactly when agents received a task and how long it took that individual to respond and subsequently move on to the next pushed task.

Prioritized Skill Routing – Skill-based routing makes the dough rise

Callfinity has taken the concept of traditional skill-based routing even further by developing "prioritized skill routing." **Prioritized skill routing combines numerical values of priority for agents, groups of agents, and interaction queues to more effectively distribute the right interaction to the right agent at the right time.** The idea is simple: allow contact center managers to assign priorities to each type of interaction (ie: emails vs phone calls), each queue of each type (ie: service emails vs sales emails vs sales phone calls), and each agent within each queue (ie: Mike vs Maura vs supervisors.) This combination of numerical priority is utilized as input to ContextACD's rules engine, which in turn automatically pushes interactions to agents based upon those rules. In this sense, we like to say that ContextACD is a "push queue" system.

For example, a normal phone queue may have a priority of 1 while a typical email queue has a priority of 2. In this example, the phone call has priority over the email and will be handled first. However, an administrator can also create an escalated email

queue that has a priority of 1. In this case, the administrator can create an escalation condition that automatically escalates emails that have been waiting for eight hours into this escalated queue. Because escalated emails have the same priority as phone calls, interactions for the same group of agents are distributed in a round robin fashion: an email, then a phone call, then another email, and so on until one or both of the queues is depleted.

Prioritized skill routing allows administrators to create an infinite number of queues, each with separate priorities, such that agents can have different priorities in different queues. In this way, tasks can be automatically pushed to alternate agents when primary agents are too busy. For example, an organization with both sales and service agents would likely create queues that place service agents into a service queue and sales agents into a sales queue. With prioritized skill routing, a contact center manager may also add sales agents to the service queue, and service agents to the sales queue, but each with a lower priority than the "main" agents for each queue. In this way, if all the primary agents are busy handling customer interactions, the next best agents are automatically included and sent the next waiting interaction. Alternatively, using escalation rules, a contact center manager may keep service calls waiting in the service queue for a few minutes (in case a service agent becomes available) and only after that threshold, escalate to a queue that contains both service agents (at a high priority) and sales agents (at a lower priority.)

Take your pick from three contact center entrees

Traditional contact centers require a new phone system and large capital expense. Callfinity's approach remains flexible so that businesses have a variety of options for contact center application deployment:

- **On-premise** – Upfront capital expense, or CapEx, installed at customer site, owned and operated by customer

- **Hosted** – Mostly operating expense, or OpEx, nothing is installed at customer site, entire system and telecom is managed by Callfinity

- **HybridHosted** – Telecom stays local to customer, but command-and-control is in Callfinity's cloud

Details for each of these three deployment models are described in detail below.

On-premise system

An on-premise solution, as shown in **Figure A**, is the most capital-intensive option, tens of thousands to hundreds of thousands of dollars upfront. In an on-premise contact center, equipment such as PBXs, ACDs, IVRs, fax systems, and
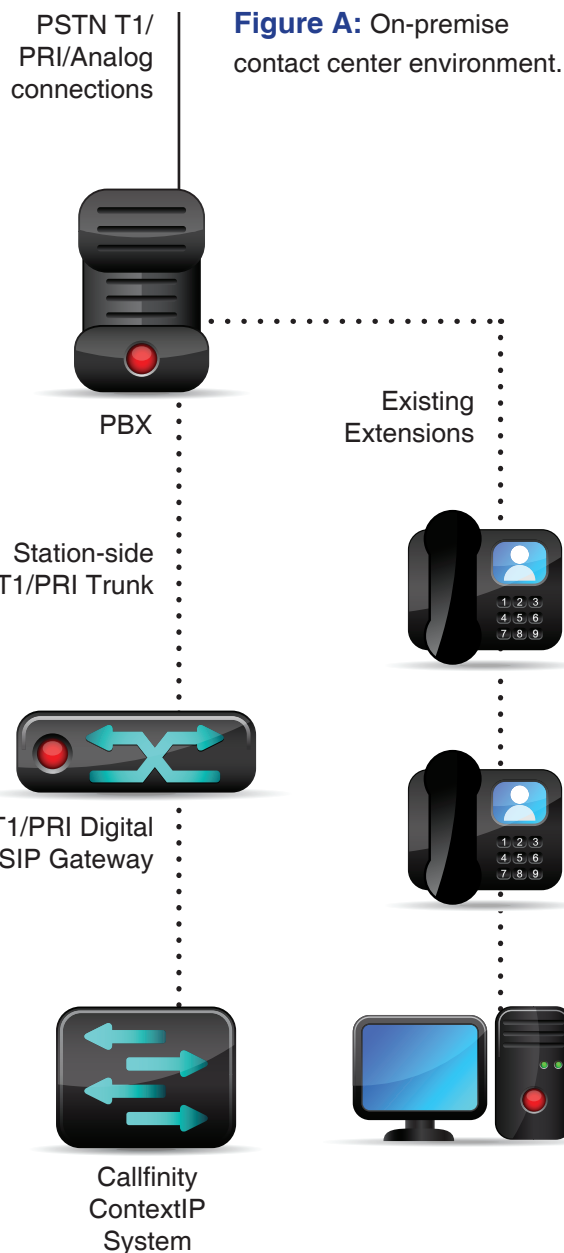

PSTN T1/ PRI/Analog connections

Figure A: On-premise contact center environment.

PBX

Existing Extensions

Station-side T1/PRI Trunk

T1/PRI Digital to SIP Gateway

Callfinity ContextIP System

predictive dialers are owned, operated, and maintained by the business running the contact center. Since an on-premise solution requires on-premise hardware and software, there is a significant charge for hardware and software licenses as well as maintenance and disaster recovery. The total cost for an on-premise solution is based on a setup fee, a license fee per seat, and yearly maintenance and support charges. All telecommunications connectivity is separately purchased by the customer, and connected to the contact center system.

Hosted system

A hosted contact center is a service-oriented solution which is owned and operated by a service provider. In this case, the service provider effectively "rents" any hardware and software to the organization for a monthly fee based on the number of

agents. With a hosted system, as shown in **Figure B**, the service provider is also the telephone company: all calls originate and terminate through that provider's hosted infrastructure. Calls are routed to the provider's cloud for hold treatment, menu options, and routing. Calls are then sent to an agent either over SIP or PSTN. Instead of an up-front expense, charges are made on a per-seat/per-month basis + per-minute usage fees.

HybridHosted system

Ideally, the best possible contact center solution would be a hybrid or combination of the advantages of both the on-premise and hosted solutions, as shown in **Table 1** on the next page. In other words, the system exists on-premise to ensure perfect call quality through the local telco provider, the up-front costs are low, the system can be scaled up or down on a per user basis, and the management of the system is handled by the vendor. Callfinity calls this patent-pending, 'best of both worlds' system HybridHosted technology.

In the next section, we'll discuss on-premise and hosted solutions in more detail and then show how HybridHosted technology merges the advantages of on-premise and hosted to save money, protect you in the event of disaster, and to provide flawless call quality.

On-Premise or Hosted: What ingredients are the best mix for your organization?

Many providers would like you to assume that choosing the right type of contact center solution is a matter of solving a simple mathematical equation. The truth is there are a variety of factors to consider when deciding between hosted or on-premise contact center solutions. Just because X saves you money upfront or Y may yield better voice quality doesn't necessarily mean that one is a better option for your business than another. In fact, both options may be beneficial to your organization in different ways.

Proponents of on-premise solutions will argue that if you're concerned about call quality and security, a hosted solution isn't the right choice for you business. On the other hand, hosted solution supporters will lead you to believe that an on-premise solution is expensive and requires a substantial amount of resources to maintain.

Before you begin to assess which option is right for you, consider that choosing one option over the other doesn't necessarily mean you're stuck with that particular model. Organizational needs change, staffing grows and shrinks, and sometimes a solution that may be a perfect fit one day turns out to be a regret years down the road.

Today, there's no reason to compromise if your vendor offers both hosted and on-premise options. In fact, vendors like Callfinity allow clients to start with a hosted solution and later run everything on premise, or start with a premise-based solution and later run everything in the cloud as a service.

Customer via Phone, Email, Web or Chat

Figure B: Hosted contact center environment.

Callfinity's Cloud

Sent over SIP or PTSN

Your Agent

Your Agent

Your Agent

Your Agent

Preheat to 360 degrees while analyzing your business needs

Once you accept the fact that your decision isn't set in stone, analyzing your current business needs will help you choose the best option for your organization, even if it is only a stepping stone. While researching these options, you're likely to hear a lot of cost, stability, security, and call quality comparisons between the two models. Many analysts report that hosted solutions are more cost-effective while on-premise solutions offer a higher level of stability, security, and call quality.

While some of these comparisons are valid, it's important to realize that the hosted provider you select plays a huge role in whether or not your contact center will experience a loss of stability, security, and call quality. Certified providers such as Callfinity offer a level of security, scalability, and stability that can exceed that of an enterprise solution. Customers of such providers can leverage those providers' existing investment in process, equipment, and access redundancy without repurchasing that infrastructure for an on-premise installation.

What about call quality?

There are two ways to deploy hosted solutions, and not surprisingly, there's a tradeoff between quality and cost:

1. **Agents can connect voice calls over the public internet**

   In this model, the least expensive, agents run VoIP softphones or other telephones that connect back to the hosted provider over the public internet. Because the internet doesn't support any sort of Quality of Service for voice packets, there is a risk that voice quality will be degraded when there is congestion between the agent and the provider. For call centers that don't require perfect call quality, this is a very inexpensive solution, and perfectly acceptable for many types of businesses.

2. **Agents can connect voice calls over a private WAN**

   Like the first option, agents would be using VoIP technology to connect back to the service provider. However, instead of making this connection over the public internet, the service provider would provision a private line between their location and your location or location(s). While this is more expensive, in that a private MPLS circuit or point-to-point circuit costs more than a connection to the public internet, all packets on that circuit are prioritized and thereby provide a very high quality experience.

3. **Agents can connect voice calls over the PSTN**

   Unlike the first two options, routing calls over the PSTN avoids the use of VoIP at all. Instead, agents take calls to

Table 1: Advantages and disadvantages of on-premise and hosted solutions with advantages of both combined into a Callfinity HybridHosted solution.

On-Premise System

Advantages	Disadvantages
Perfect call quality (no internet VoIP).	Large, upfront capital expense.
Choice of phone company.	Ongoing IT/telecom resource expenses.
Well understood, low risk decision.	Full replacement cost for upgrades.
Easier compliance certifications: all private data can stay local (HIPAA, PCI DSS, SAS 70, etc.).	Pay for "high water mark": customers always pay for more than they need, and can't reduce costs if they scale down.

Hosted System

Advantages	Disadvantages
Little or no upfront capital.	Reliability problem if vendor's datacenter goes down.
Faster startup time.	Quality and security concern if calls route over the public internet.
Free and easy upgrades.	Risky decision, not well understood.
Pay-as-you-go: costs increase and decrease as you scale up and down.	Harder to get compliance certifications, as private data is "in the cloud."

Callfinity HybridHosted System

On-Premise Advantages	Hosted Advantages
Perfect call quality (no internet VoIP).	Little or no upfront capital.
Choice of phone company.	Faster startup time.
Well understood, low risk decision.	Free and easy upgrades.
Easier compliance certifications: all private data can stay local (HIPAA, PCI DSS, SAS 70, etc.).	Pay as you go: costs increase and decrease as you scale up and down.

and from customers using standard analog phone lines or digital extensions from a traditional PBX. This ensures perfect voice quality to and from agents, but because someone is making a long-distance telephone call, the customer ends up paying an additional per-minute charge for the agent leg of every call to and from the service provider. This can add up quickly.

Don't bite off more than you can chew – Compare the cost of on-premise and hosted solutions

A Yankee Group analysis estimates that the cost of running a 25-agent contact center can exceed $369,000 over the first three years of operations for an on-premise solution compared with $266,000 for a hosted solution over the same period. The largest savings were in the areas of hardware/software, implementation and maintenance costs, technology upgrades, and IT staffing.* **A hosted solution allows your business to focus on operational costs instead of worrying about capital expenditures.** If a problem arises, a simple call to the provider can result in an immediate fix. With an on-premise solution, replacement hardware may be much harder to come by.
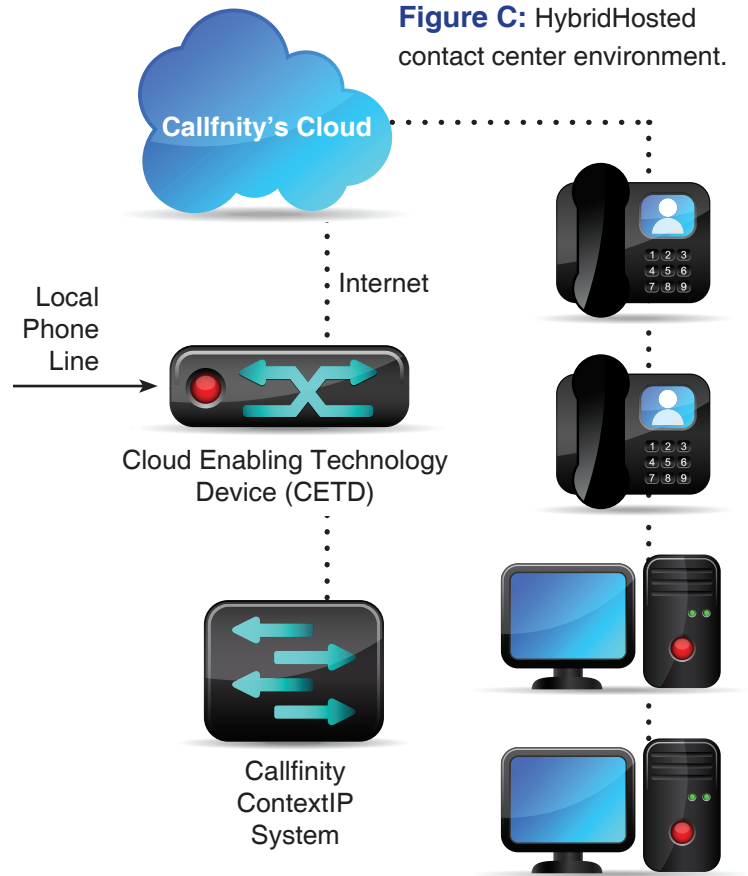
The secret ingredient: Callfinity's HybridHosted solution

HybridHosted technology is a patent-pending system developed and implemented by Callfinity that offers the best of both on-premise and hosted solutions without the drawbacks. Here's how it works. Customers are sold a Cloud Enabling Technology Device (CETD), which is a computer from a commodity vendor such as Dell that runs Callfinity's hybrid stub operating system. This stub OS connects to the local telecommunications resources, such as T1 lines from an existing phone company, or an on-premise infrastructure provider's PBX. When it boots, it queries Callfinity's cloud infrastructure for instructions, and dynamically provisions itself based upon the configuration that customers implement in the hosted infrastructure. All calls are routed locally to the customer's premise, and at no point does Callfinity provide telecom service, minutes, VoIP, or any other such commodity. Rather, the CETD keeps phone calls on-premise, while all the command-and-control is hosted by Callfinity. Customers pay with operating expense dollars, exactly as they would in a hosted model.

Callfinity's HybridHosted technology functions like an on-premise system but is paid for like a hosted system. Because the configuration exists within the cloud, you don't lose anything in the event of a natural disaster or if your CETD stops operating. Instead, you simply get a new CETD, connect to the Callfinity cloud, and allow it to download your latest configuration without losing any of your data. All of the metadata, customer configuration, call recordings, and reports remain in Callfinity's cloud.

*Source: Yankee Group, 2006

Figure C: HybridHosted contact center environment.

Callfinity's Cloud

Local Phone Line

Internet

Cloud Enabling Technology Device (CETD)

Callfinity ContextIP System

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Source: Yankee Group, 2006

HybridHosted deployments can be better than on-premise systems because the entire solution is managed from Callfinity's cloud, so there's no need for IT resources, large disaster recovery investments, or storage infrastructure. And instead of paying for an entire on-premise solution up front, a HybridHosted solution is paid as an operating expense, typically on a per user/ per-month basis.

HybridHosted deployments can also be better than fully hosted systems because customers can retain their local telephone company and retain perfect call quality without expensive private lines.

Bon Appétit! Contact center software from Callfinity is a recipe for success

Since the dawn of the internet, the telecommunications industry has been transforming. As communication methods shift, so does the typical call center solution. The way that businesses can keep in touch with their customers has evolved into a combination of phone calls, email, live chat, fax, voicemail, and other interaction types. By transforming your call center into a contact center, and with ContextACD's Universal Queuing, push queues, and Prioritized Skill Routing, you can ensure that all your agents are busy all day, every day, on the interactions you deem most important each moment. Using a simple web interface, you can design a system that works for you, instead of the other way around. As the only vendor that supports all three modes of deployment (on-premise, hosted, and HybridHosted), Callfinity's systems are accessible to contact centers of every size and type. ♦