

# Building the IP Contact Center: Avoiding the Pitfalls

## A Primer on Contact Center Technology Centralization & Rationalizing Costs across Geography

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**T**here is unprecedented industry consensus around the migration to multimedia, IP-based contact centers and the momentum behind that migration. Analysts agree that 2004 is the year when most companies have begun making the move to IP-based infrastructures at scale in order to rationalize costs across the organization and transform geographically-distributed centers into seamlessly integrated 'virtual' contact centers. While those companies who have successfully made the transition have reported tremendous productivity gains and dramatic technology operating cost reductions, companies must also consider the sobering statistic that 60-70% of IP contact center deployments fail, almost universally for entirely predictable technology reasons. This white paper discusses the five core technology pitfalls and the related questions that organizations must ask all prospective vendors in order to successfully implement centralized software infrastructure.

The business drivers behind the technology centralization paradigm shift are compelling. One of the key attributes of Voice-over-IP technology is its inherent ability to route voice traffic along with call data across geography on common data-centric plumbing. The ability to blend web-based and PSTN transactions with skills-based routing to the best qualified agent, who can reside anywhere on the global network, adds compelling value in the form of reduced transactions and dramatic increases in both productivity and customer satisfaction. Companies can now leverage high-bandwidth data connectivity to link their diverse locations together and rationalize expenses across geography while routing communications to those best qualified to help; eliminating the need for site specific IT staff, servers, software licenses and even phone lines at individual locations. This trend is empowering companies to reap compelling economies of scale while dramatically slashing technology operating costs.

For those companies who prefer to outsource technology management, many commercial service providers have also added hosted contact center technology to their portfolios; providing "virtual" contact center infrastructure alternatives to traditional on-premises contact center systems. Service Providers such as Bell Canada are leveraging their economies of scale to give customers new, cost effective options for leveraging world-class technology. Government and commercial clients are responding to this paradigm shift and its unique value proposition: avoidance of capital expenditure combined with end-to-end management of world class back-end technologies by a carrier customers can trust, at price points that make sense.

Companies that are only now beginning to 'host' contact center technologies for their own locations are currently struggling with many of the very same technology issues that commercial service providers struggled with as they

implemented hosted services infrastructure in their networks over the last three years. The lessons learned are important and compelling for companies going down the centralization path. As noted above, for the purposes of this white paper these lessons have been reduced to five core areas of risk that companies need to consider before making their key technology decisions.

### Pitfall #1: Deficiencies in Scalability & Related Economies of Scale

**Traditional enterprise solutions can't scale sufficiently for large-scale multi-site operations.**

Growing companies need the ability to increase capacity at will simply by adding more nodes and resources to the network. Technologies created for traditional on-premises deployments cannot scale to deliver application services at high volumes across geography. The core advantage of a *true* network-based architecture is that scalability can be achieved simply by adding additional processing resources (computers) to the distributed network. Processes distributed across the network work together to form the application. In this sense, the network really *becomes* the computer, since an unlimited number of nodes can work together as one system.

**If corporate service providers need a dedicated server per tenant, or worse one for each media type for each tenant, meaningful economies of scale cannot be achieved.**

Centralizing technology to leverage economies of scale requires an ability to share common hardware, software licenses and phone lines across locations. It also requires "multi-tenancy" to enable network resources and licenses to be shared among all locations while keeping each division's private data, routing rules and libraries completely separate and discrete from other tenants. To be viable, a multi-tenant solution must also support multiple databases simultaneously; as many internal constituents may find institutional aggregation of data in a single database to be impractical or unacceptable.

**In order to realize maximum economies of scale, licensing should be cross media and capacity-based.**

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## >>> Building the IP Contact Center: Avoiding the Pitfalls

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Separate licenses for each medium of communication are inefficient. Licenses should be “Cross Media” and dynamically applied to any form of communication: phone calls, web callbacks, chat sessions, web-collaboration sessions, active email management, active fax management, predictive dialer calls, etc.

The ideal cross media licensing model is one based on “peak simultaneous interaction” capacity; capacity that can span all tenant locations to deliver increased licensing efficiency (seats are ‘free’ – licenses are only used when active communications are in progress or when agents are being monitored or recorded). This approach enables the sharing of universal software licenses across multiple tenants and time zones with different peak busy hours in order to gain and leverage economies of scale. The corollary to this is that companies should also look for technologies which offer unlimited log-ins, empowering those economies of scale to be realized.

### Pitfall #2: Companies Require Absolute Network Security

The need for absolute network security precludes any company from leveraging the public Internet if security compromises are required. The ultimate compromise is enabling firewalls to accept TCP/IP communications, which most vendors require to support telecommuters and mobile workers and which leaves the corporate network vulnerable to attack. What is required are user interfaces that can communicate with the back-end securely as HTTPS and that have the ability to support proxies.

### Pitfall #3: System Manageability

**Companies implementing centrally hosted technology will still typically require autonomy for at least some of their sites and/or divisions.**

The politics of centralization will inevitably kill most centralization initiatives in the absence of a viable and convincing response to this very real world objection. So what’s the problem in delivering local autonomy from centralized infrastructure?

Well, unless you plan to run separate centralized systems for each location and forego any economies of scale, you will need a “multi-tenant” solution that leverages common hardware, software licenses, network connectivity and phone lines for all locations, yet preserves “tenant” autonomy as needed. This is where many companies get it wrong. Vendors who have retrofitted legacy technologies for multi-tenancy typically only provide multi-tenancy at the database level; i.e. to provide data privacy as between system tenants. The problem is that you can’t provide “tenant” provisioning autonomy on this type of shared infrastructure without creating unjustifiable system stability risks for the rest of the organization. Why? Because all sites and divisions in this retrofitted paradigm must share the same core software executables, which become increasingly bloated and buggy as each group’s requirements are incorporated into the shared whole. Since everyone’s requirements are blended in a spaghetti-like code base, local control is impossible; because only the centralized IT staff who have programmed the centralized system will know the custom code/integration well enough to introduce new capabilities or technology changes for one tenant

without inevitably causing catastrophic consequences to others. Carriers call this “the new bugs for old tenants” problem.

**In addition, the rigidity of systems deployed in traditional on-premises paradigms will increase exponentially in a centralized technology deployment;** because of the dramatically increased regression-testing burden required to ensure that follow-on changes will not adversely impact on any of the system tenants’ diverse requirements, and to ensure that changes will not introduce system-wide instability.

**So what’s the answer?** Clearly “multi-tenant” technology that has been both designed for purpose and validated at scale in top-tier carrier networks offers the most effective approach for getting the job done.

**In this model, tenant-specific software processes share common software licenses, hardware and phone lines – but at the core, all business logic software processes are separate and distinct.** This means that every tenant can enjoy autonomy without putting other tenants at risk.

**Another attribute of this approach is its commoditization of human inputs with an on-demand, menu-driven approach to provisioning and customization.** This approach incorporates all traditional need-analysis questions, but now all technologies are integrated-by-design and can be customized by tenant-administrators from browser menus “on-demand”; rather than via custom programming or professional services-driven script languages. This does not imply sacrifice; all of the needs analysis questions that drive traditional provisioning processes are now reflected in provisioning menus. Class of service controls enable variable levels of control to be shared with individual tenant administrators. In addition, robust web services empower creative enhancements to the menu driven system. The corollary to this is that systems under this approach can empower individual site administrators with the ability to implement *real time* business process modification as needed – in order to “fix” strained local business processes on-demand, *before* they negatively impact on revenues or customer satisfaction. As you might expect, studies validate that companies empowered with the ability to fix problems as they materialize at no cost from menus actually make more money and enjoy lower operating costs and higher customer satisfaction.

**Corporate service providers also require the elimination of human error variables for tenant content management.** Corporate service providers require content management of all tenant voice prompts, email templates, chat templates, fax libraries, etc. to be handled from a tenant administration screen with automated propagation of the content as appropriate across the global network. The alternative is human intervention every time a tenant changes a recording or response template, etc., which has an expense up-front and inevitable follow-on expenses related to human error.

**Of course, there is also the issue of manageability from a desktop support perspective.** For maximum ROI, centralized infrastructure should rely on thin client browser based user interfaces that can be upgraded dynamically and eliminate the need to administer software on individual workstations across locations every time new updates need to be installed on local PCs.

## >>> Building the IP Contact Center: Avoiding the Pitfalls

Another manageability issue to consider: Reporting

- Can subscriber tenants view their own reports on demand? Are they unified across all capabilities?
- Are historical reports and real-time data presented to agents and supervisors in a time zone sensitive format or will users in different time zones have to “do the math”?

### Pitfall#4: Architectural Reliability & Disaster Recovery

The fourth core area of risk is related to system reliability. If a company is going to centralize technology then it must be sure that the system cannot ‘go down’ or it will bring global operations to a grinding halt. Since trials are generally performed at low scale, it is important to understand the architectural underpinnings of the solution that will determine future success or failure.

(i) Corporate and commercial service providers must provide non-stop service for tenants even if individual processes or servers fail

System failure is not an option for centralized technology deployments servicing diverse locations. Corporate service providers require fully mirrored processes that can run in parallel, in real-time on multiple servers resident in multiple data centers, for real time disaster recovery. This is a significant advance over simple fail-over schemes that disconnect all calls in process and cut over to a backup system whenever there is a problem.

(ii) Corporate service providers require the ability to scale and perform upgrades without service interruption

Hardware and software resources must be able to be dynamically added or moved in order for the network to expand or collapse without interruption.

### Pitfall #5: Architectural adaptability to variable constituent needs

Centralized, hosted infrastructure must include *both* circuit-switching & packet-switching capabilities and render all forms of VoIP (H.323 and SIP) interoperable so that anyone can talk to anyone on the network. The need for both circuit-switching and packet-switching is driven by the fact that different constituents will have different needs. Large centers will leverage available bandwidth to reduce transaction times and increase productivity by routing voice and Internet to the best available agent regardless of where they might be sitting on the global network. Yet circuit-switching will still be required to support users for whom managed bandwidth is either unavailable, such as home-based telecommuters, as well as for those sites with too few users to justify managed bandwidth connectivity. Another example is that of seasonal centers, for whom the longer-term commitment required for managed bandwidth cannot be cost-justified. For those users, call control and data screens can easily be managed via the Internet in synchronization with voice traffic that is routed over the public-switched telephone network.

For maximum efficiency, centralized technology should unify all traditional and IP PBXs as an “overlay” for legacy equipment across geography while adding stand-alone IP capabilities to all remaining sites. Companies must carefully evaluate the architectural underpinnings of proposed vendor solutions to determine technology fitness-for-purpose in the context of any technology centralization initiative. ■

