



Distributed and Networked Applications (DNA) Framework: Improving Business Performance with Enterprise-Wide Communications

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Branch offices and retail stores are still the primary customer interfaces—and the main revenue drivers—for many enterprises. Yet typically they lack the technology and communications resources available at headquarters, forcing them to operate as islands cut off from the corporate mainland. The Distributed and Networked Applications (DNA) Framework of Vertical Networks' InstantOffice Integrated Communications Platform (ICP) makes remote sites an integral part of the corporate structure, while improving overall business performance. Blending distributed and networked applications intelligence with centralized system and applications management, the DNA Framework helps enterprises increase revenues and improve customer satisfaction, while lowering operating costs.

When Business Communications Limits Business

Many enterprises today must address a fundamental question: Are the communications systems in our branch offices or retail stores limiting business opportunities?

For a few years, people thought the Web would become the main point of customer contact and the engine of growth. Now it has become clear that customers want person-to-person contact, and branch offices and local stores have become increasingly important as the primary customer interfaces and the main revenue drivers for many businesses.

Despite their importance, there are several reasons why remote sites are typically isolated from the corporate network and all its sophisticated applications. Often individual branch managers, not the corporate IT staff, make voice technology purchasing decisions for their sites—and do so without considering voice applications and centralized management requirements. Many corporations inherit a variety of branch-office voice solutions, typically key systems or PBXs, when they make acquisitions. Traditionally, these remote site solutions have not had robust remote management capabilities or the ability to provide a platform for applications. As a result, branches generally have no uniformity of platforms, applications, or functionality, and the corporation has no way of managing all of its disparate hardware and software components.

Another complicating factor is that, depending on their geographical region or local service provider, branch and retail offices oftentimes have different wide area networking (WAN) resources available to them—analog lines are the most common. While server performance and capacity and LAN switching technology have evolved to support faster speeds and more sophisticated applications at the corporate level, the central office (CO) local loops that serve branch offices have not kept pace. There is a serious bandwidth bottleneck that affects the branch offices' ability to tie into corporate applications. The bandwidth problem is compounded when remote sites are served by different telephony carriers that offer varying types of services.

The combination of non-standard and legacy equipment, insufficient resources, and lack of bandwidth makes the issues facing branch offices and stores complex. This situation is compounded by the lack of remote administration and management, making the rollout of a consistent solution across an enterprise branch office or store network a significant challenge. As a result, branch offices have become independent “islands,” cut off from the corporate mainland and its standards for communications applications.

Imagine the Possibilities

A huge opportunity exists to improve business performance and even generate new business by upgrading these islands with functionality and applications support that tie remote sites to the corporate mainland. What if a stronger communications system could help you achieve more in your business? Imagine these scenarios:

What if you could roll out a marketing campaign and automatically monitor traffic to determine its success rate by correlating the campaign to actual transactions that occur at the point-of-sale location? If you could customize the prompts the caller is presented with to say, “If you’re calling about the advertisement you heard on the radio, then press 1,” you’d know the exact response rate to that marketing program.

Or what if you could automatically track inbound customer calls at each remote site to determine when the first call was received, who received the call, the response time, and the current status? For the first time, you'd be able to measure the productivity of the branch environment. What if you could analyze call flows at every branch office? You could use that information to better understand customer behavior and improve the customer's experience because you can determine how changes in call flow affect the call abandon rate, length of the call waiting queue, and more.

While corporate headquarters or call centers have had many of these abilities for a long time, branch offices have lacked the technology needed to leverage them. Nor have remote sites been able to easily or cost-effectively customize their communications options to address their particular needs. Retail stores may be open at different hours in different areas, for example, but their specific business hours cannot be integrated into the corporate-wide interactive voice response (IVR) system.

The DNA Framework

Vertical Networks has developed the Distributed and Networked Applications (DNA) Framework to help enterprises expand their business possibilities by more effectively integrating communications applications at remote sites with corporate strategies.

The DNA Framework leverages two key aspects of an enterprise communications strategy: distributed and networked intelligence at local sites and centralized management of systems and applications at all branch offices.

Local Intelligence for Enhanced Applications Value

Distributed intelligence has been the mainstay of the data networking environment, allowing multiple intelligent devices at remote branches to operate independently as well as to communicate with one another and with the enterprise's computing resources and applications. With the DNA Framework, distributed intelligence is available for voice applications as well.

The key benefit of distributed intelligence is that it puts uniform applications on-premise at branch offices and retail stores and allows enterprises to support these applications consistently with less dependence on local services. Local sites can make changes to or have differences in their network capabilities, but their applications—and the corporation's ability to monitor, troubleshoot, and upgrade them—remain unaffected and consistent.

Distributed intelligence means that customer-facing applications are always available at the local site—even if the WAN connection is down or malfunctioning. Each branch supports the most critical customer communications, offering guaranteed call services and features that result in a new level of quality of service.

Because distributed intelligence puts applications on site, it makes fewer demands on network resources, which can mean big savings in WAN costs in comparison to some centralized solutions. It also provides branch offices with more flexibility in choosing a service provider. No longer must a branch or retail store restrict its voice or applications platform functionality to accommodate the capabilities of a single carrier.

Networked Intelligence Integrates Branches and Stores with the Enterprise

Networking applications is a vital aspect of the DNA Framework, tying distributed intelligence at the local site to back-end enterprise applications such as customer relationship management (CRM) and databases. This connectivity enables centralized applications to add value at the local sites by giving them access to corporate resources and information and enabling them to leverage local phone and network services. For example, if an item is out of stock at one store, an employee can access the corporate database to find out if another store has it in stock.

Connectivity also allows calls to be routed to the most appropriate location. A call from a known credit risk might be referred to the credit department rather than be handled locally. Overall, the goal of networked intelligence is to improve the effectiveness of branch office personnel by more tightly integrating them with the enterprise.

The distributed and networked nature of the DNA Framework is quite different from the typical branch-office scenario, where communications applications vary locally and there is little or no connectivity to the enterprise. It is also superior to heavily centralized communications systems that place no intelligence at the local level. If a connection in such centralized systems goes down, the affected office has no access to communications applications until the connection is restored. If the centralized system itself goes down, the entire enterprise, including all its remote sites, comes to a standstill. With a distributed, networked system, however, branch offices and stores can keep on operating, since they are less affected by WAN or central site problems. If a connection does go down, the remote sites can synchronize with the central site when the connection is available again.

Successfully delivering all voice communication applications from a central site also requires the reengineering of an enterprise's entire communications network. The enterprise must prioritize applications and services and deal with issues of bandwidth, latency, and response time. To offer uniform applications and customer experiences throughout all sites, the enterprise must address end-to-end network, infrastructure, and applications considerations.

In addition, the enterprise loses a number of competitive advantages with centralized systems. For example, it cannot customize by store, branch, or region. Nor can branches take advantage of local services and local PSTN phone numbers. This situation can result in higher costs for the corporation and greater frustration for customers who are unable to communicate directly with the office or store in their locale.

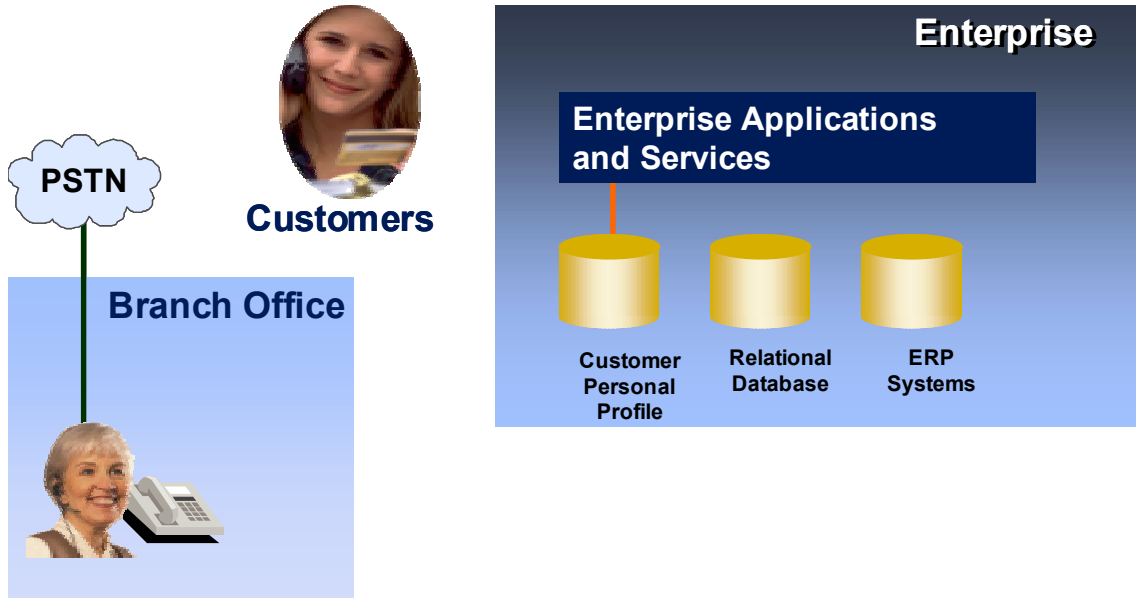
Enterprise-Wide Management and Full Applications Control

While the DNA Framework is designed to offer local intelligence at the branch, it complements that functionality with centrally located enterprise-wide management and control. Enterprises can manage all distributed intelligent platforms from anywhere in the network, handling adds, moves, and changes without having to maintain technology expertise at every branch. In addition, DNA's enterprise-wide management allows enterprises to centrally provision, manage, control, monitor, and report on the applications running on the distributed platforms.

By combining centralized management with local intelligence, the DNA Framework gives CIOs a view of branch offices they have never had before. Centralized collation of call information from the branches allows CIOs to analyze call volumes, hold times, abandon rates, trunk utilization, and overall network utilization. The ability to receive business reports on their customer-facing business gives CIOs' greater control of enterprise-wide assets and WAN costs. They get the data

they need to do detailed business reporting for reducing bottom-line costs and increasing top-line revenues.

Figure 1: Distributed and Networked Applications



DNA Framework Components

The DNA Framework is based on three fundamental components from Vertical Networks: the InstantOffice Integrated Communications Platform (ICP), the InstantOffice Call Management Suite, and the InstantOffice Remote Management Application, which includes Remote Administration and MultiSite Manager. Together, the InstantOffice system and Call Management Suite enable distributed and networked intelligence, while the InstantOffice system, Remote Administration, and MultiSite Manager contribute to the DNA Framework's centralized management capabilities.

InstantOffice Integrated Communications Platform

The DNA Framework leverages the capabilities of Vertical Networks' InstantOffice system, a fully integrated voice and data solution that incorporates the functions of a packet- and circuit-switched PBX, voice mail system, automated attendant, multiprotocol router, Ethernet LAN, and voice over IP gateway. Equally important, the InstantOffice system provides integrated, customizable support for both voice and data applications.

Unlike multi-box competitive alternatives that provide no applications synergy across devices, the InstantOffice system allows enterprises to fully leverage their communications applications while greatly simplifying application deployment, provisioning, customization, and management. Designed with the intelligence to handle all communication needs at the local premise, the InstantOffice system is the only communications platform on the market today that provides integrated support for custom voice and data applications that can be managed either locally or remotely.

InstantOffice Call Management Suite

The InstantOffice Call Management Suite enables distributed and networked intelligence, allowing enterprises to customize call handling at branch offices, integrate branch offices into an enterprise-wide communications strategy, and more efficiently manage costs. A flexible call handling capability—based on the number dialed (DNIS), the originating number (ANI), or touch-tone digits entered—supports ideal call flow by routing a caller to the company representative with the right expertise. Enterprises can also customize their IVR capabilities to give customers convenient self-service while freeing staff to handle more complex requests.

The Call Management Suite can integrate with enterprise databases via open database connectivity (ODBC) and component object model (COM) standards. This capability lets enterprises route each customer contact logically throughout its sites by using such data as inventory levels, agent availability, store hours, holiday schedules, or call queue levels. With the Call Management Suite, enterprises can track customer contact data to identify peak calling times and call abandonment patterns by department and facility.

Individual and group productivity can be measured by monitoring call handling and queue statistics. Multiple report options allow enterprises to analyze trunk traffic and network utilization. Managers can access easy-to-read Web-based reports in real time to help guide cost-sensitive operational decisions about staffing, system performance, and resource allocation.

InstantOffice Remote Administration and the MultiSite Manager

The DNA Framework's local applications intelligence and call management are complemented with an enterprise-wide communications management capability that ensures a consistent user experience, accurate and timely reporting, and platform and applications control. The InstantOffice system includes remote administration features such as remote configuration, fault monitoring, software updates, and diagnostics. These features reduce downtime and on-site visits, fully leverage the skills of centralized technical experts, and lower cost of ownership. Customizable management levels allow enterprises to further reduce costs by assigning routine moves, adds, and changes to office personnel.

Using capabilities inherent to InstantOffice, Call Management Suite, and InstantOffice Multisite Manager, systems collect valuable reporting information about call behavior, call volume, hold times, abandon rates, and trunk utilization, and pass it on demand to central-site facilities. Centralized collation of enterprise applications and local and regional call flow behavior allows enterprises to more accurately tune their networks and remote-site staffing levels to suit customer and budgetary requirements.

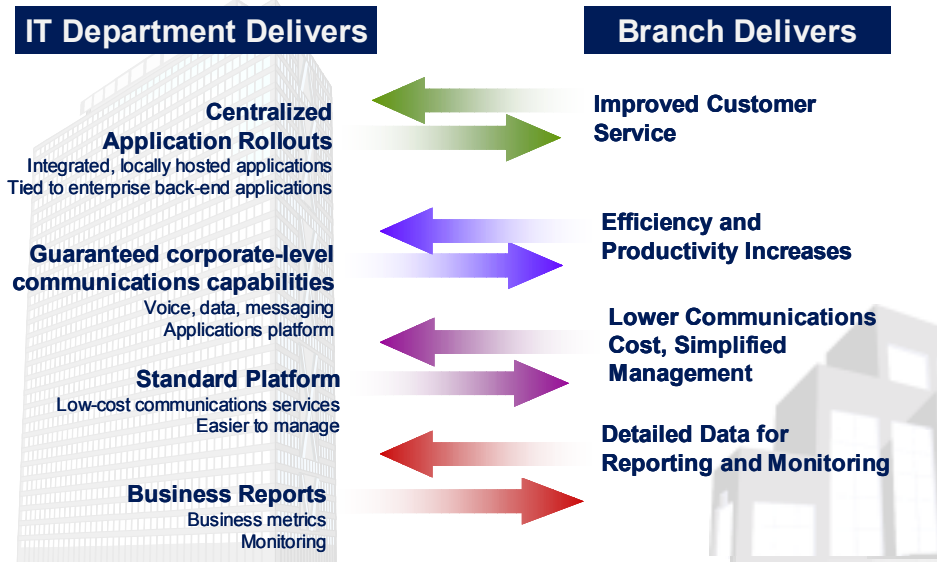
While the InstantOffice system's remote administration features enable the enterprise to manage all aspects of the system one box at a time, InstantOffice MultiSite Manager enables the enterprise to manage all InstantOffice systems simultaneously. With MultiSite Manager, enterprises can collect applications data and roll out, upgrade, or make changes to applications across a network of InstantOffice systems, all from a central location.

DNA Framework Improves Business Performance

Vertical Networks' Distributed and Networked Applications (DNA) Framework gives enterprises a communications solution that enables them to integrate their main points of customer contact—

branch offices and retail stores—with corporate headquarters. Enterprises can improve their overall business performance by improving productivity, implementing new revenue-generating applications, and gaining operational efficiencies. Most importantly, the improved communications brought about by the DNA Framework enables enterprises to strengthen their ties to their customers.

Figure 2: Improved Productivity and Operational Efficiencies



For more information:

Vertical Networks
 1148 East Arques Avenue
 Sunnyvale, CA 94085
 Phone: 408-523-9700
 Fax: 408-523-9701
 Toll free: 1-800-826-6769
www.vertical.com

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