



A New Era in Borderless Branch Experience Emerges Are You Ready?

by

Nicholas John Lippis III
President, Lippis Consulting

October 2009

Abstract

A new era in Enterprise IT is emerging. It's an era born out of systemic business efficiency planning prompted by the efforts of business leaders to reduce corporate spending as revenues declined during the market crash of 2008-09. To reduce operational spend, get closer to customers, automate new streamlined business processes and position their firms for the current economic recovery, IT leaders are reviewing IT solutions, particularly data center consolidation, virtualization, cloud computing and branch offices. In this white paper we describe the macro trends taking shape in business and explore how these trends are creating a new era in branch office IT fueled by cost reduction and improved customer experience. We review next generation branch office IT attributes and best practices to leverage their value.

1.0 The Borderless Network

We live in an ever-increasingly connected world where our workspace is with us constantly, independent of geographic location and user device. The days of boundaries or obstacles to access information that location, applications and devices would erect are limited and dwindling. These boundaries are being torn down by business necessity, personal preferences and technical innovations. Businesses are increasingly expanding globally, increasing the geographic area in which they operate and need access to information. The huge growth of the mobile internet provides insight into how work and work product has moved far beyond a stationary desk. It is technical innovations, however, that are ushering in a new borderless network architecture that's delivering the capability to experience a workspace without borders, friction or frustration.

The rise of wireless networks, smartphones and the mobile internet has ushered in workspace mobility that tears down location boundaries. Application performance acceleration technology extends application access over large distances while presenting the user with an experience of being local. Network security services, especially identity and policy, preserve user preferences as they drift between workspace environments ensuring corporate assets are safe. In the current business cycle, corporate networks will become even more borderless as cloud computing services, collaboration applications and virtualization technologies accelerate application access to any location and device on the planet.

For corporations the borderless network delivers value in two important ways. First is the frictionless movement of workflow or business processes consistently over a corporate network that is secure, mobile and as vast as a corporation's employees, contractors, suppliers and customers. Second is the value of increased customer experience borderless networks deliver as existing and prospective customers are everywhere, interacting with your company on a plethora of devices. Customer service studies show that keeping customers connected or wired brings them closer to a business, improving their experience and loyalty.



Cisco Delivers A New Network Architecture In Borderless Networks

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1.1 Post Great Recession Business Climate

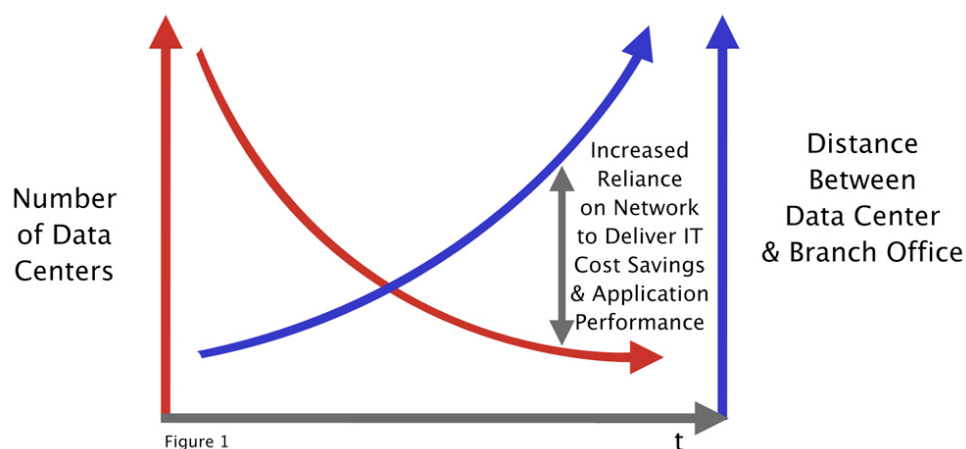
During the volatile and uncertain economic times of late 2008 to 2009 many business leaders prioritized and streamlined business processes in an effort to reduce operational spend. With the global economic recovery underway these business leaders are now focused on customer acquisition and revenue growth while simultaneously seeking business process automation and operational efficiency. As a result new business models and customer experiences have emerged. It has become apparent that video, in particular, is at the center of improved customer experience and operational cost reduction. In fact, video has become a large change agent in customer relationship management. Case in point, internet video has jumped to 22 percent of global consumer internet traffic in 2007 from 12 percent in 2006 and is forecasted to account for nearly 90 percent of all consumer IP traffic in 2012.

1.2 IT Architecture Innovation Accelerates

While markets roiled and business leaders re-calibrated their companies, information technology not only marched on, but innovation accelerated. More data centers were consolidated, options to converge storage, networking and computing became available, virtualization deployments accelerated plus the ability to support more applications on a single server increased, the next generation of wireless LANs, 802.11n, was standardized, notebook computer shipments out-sold desktop models, more powerful data center ethernet switches were introduced and cloud computing captured the imagination of business and IT leaders.

One key trend that stems from this innovation is that IT is centralizing data and applications into fewer and fewer powerful data centers with the hopes of augmenting IT delivery with cloud computing over time. This trend is supported by lower IT total cost of ownership, made possible by data center consolidation in conjunction with increased availability, quantity and lower cost of network bandwidth. That is, IT economics and technology trends are dictating a structure that computer networks deliver applications to far flung corporate locations from a smaller number of large and powerful data centers. In other words, it has become less costly to buy bandwidth to distribute IT services to corporate locations and mobile individuals than to replicate compute, storage and applications to a large number of corporate sites and individual users sprawled over distance.

This new IT economics will only become more powerful as IT leaders seek to locate data centers in low energy cost regions often found in remote areas. The reason is to reduce the cost of power and cooling as electricity even on a low-end server will now exceed the server cost itself in less than four years. In short, data and applications will increasingly be further away from users over time and correspondingly greater demands will be placed upon networks to close the distance and associated delay to deliver an excellent and productive user experience. See figure 1.



2.0 Next Generation Branch Office

At the same time data centers are consolidating, the number of branch office openings is increasing. In fact, Nemertes Research estimates that the number of branch office openings will grow 17% by 2010. One reason why branch office locations continue to open is that business leaders view the branch/retail store/clinic/bank branch/classroom etc as an important customer touch point where they have total control of the customer experience which can be extended online.

The brick and mortar branch has paradoxically become strategic. In the mid 70s and 80s most thought that retail branch office banking would decline with the advent of the Automated Teller Machine (ATM). But the opposite occurred as retail bankers sought to design branches to be more customer friendly, as customers who conduct business in the branch are more often than not engaged in complex transactions that are high margin and high revenue. The same is true in retail stores; during the dotcom boom many predicted that retail branch stores would close, but again the opposite occurred as business leaders focused on keeping shoppers engaged and improving their experience. During the current business cycle business and IT leaders are engaged in simultaneously providing the best customer experience at the branch level and reducing operational spend.

With limited local IT staff resources and IT footprint available at branch office locations, IT leaders have centralized data in data centers and distributed applications and transactions between branch and data centers to simplify operations and reduce cost. The adoption of video communications as a means to both increase customer experience and productivity, and reduce operational cost has spiked over the past two years in branch office settings. Video conferencing, video training, desktop video, video streaming, video surveillance, digital signage, etc., are all being used to increase collaboration among employees as well as between company and customers.

In addition to video communications and data center consolidation IT leaders and users have deployed various cloud-based services which will only increase over time. Data center and cloud computing are both large branch office trends since they reduce IT footprint and centralize IT operations. Still, today many applications are local to the branch, be it point of sale, clinic-based health care applications, etc. While local applications increase reliability, this approach also costs in terms of IT operation and footprint.



Cisco Launches A New Era In Borderless Branch Office IT

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2.1 The Three Driving Branch Office Requirements

From the above discussion three main requirements can be extrapolated for branch office environments. First, it's increasingly required that branch offices be ready for video for both office productivity improvement and customer experience enhancement. Second, IT services are ever more virtualized to reduce on-site staff or truck roll requirements and as a means to extend cloud computing-based applications. In addition service virtualization is more fungible providing IT with the tools to customize branch office applications. This second requirement delivers the tools and freedom necessary for IT leaders to offer innovative business solutions. The third requirement is operational efficiency with the goal of reducing total cost of ownership through simplifying IT operations, reducing energy consumption and streamlining business processes.

2.2 What To Consider In Next Generation Branch Office Solutions

There is a next generation of branch office IT solutions emerging. We provide guidance for IT leaders to consider as they look to either upgrade or equip branch offices with IT solutions that reduce operational spend, increase customer experience and deliver a platform for innovative business applications. Our guidance is centered around three areas: 1) integrated hardware; 2) integrated services; and 3) IT operational efficiency.

2.2.0 Integrated Hardware Platform

Fundamental to the next generation branch office solution is an integrated hardware platform that is built to last and supports networking, collaboration, storage, compute, operating systems both real and virtual plus an application environment. That is, in a single hardware footprint IT leaders can administer nearly all aspects of their branch networking, communications and IT services. When considering such an approach and extrapolating it to hundreds, thousands, if not tens of thousands of branch locations is a material IT operational task and cost saver. Further, a single universal network operating system image running in different integrated branch office hardware platforms significantly simplifies management and service module administration. Next consider a branch office hardware platform that supports a large range of services.

2.2.1 Integrated Services Portfolio

Branch office solutions are either delivered piecemeal through the use of appliances for every service or integrated where one integrated hardware platform supports a wide range of IT services. For those IT leaders concerned with IT footprint, power consumption, IT operational cost and future proofing the integrated approach is most advantageous, see Figure 2. A branch office integrated service portfolio should include the following services and be offered on-demand when and where the service(s) are needed:

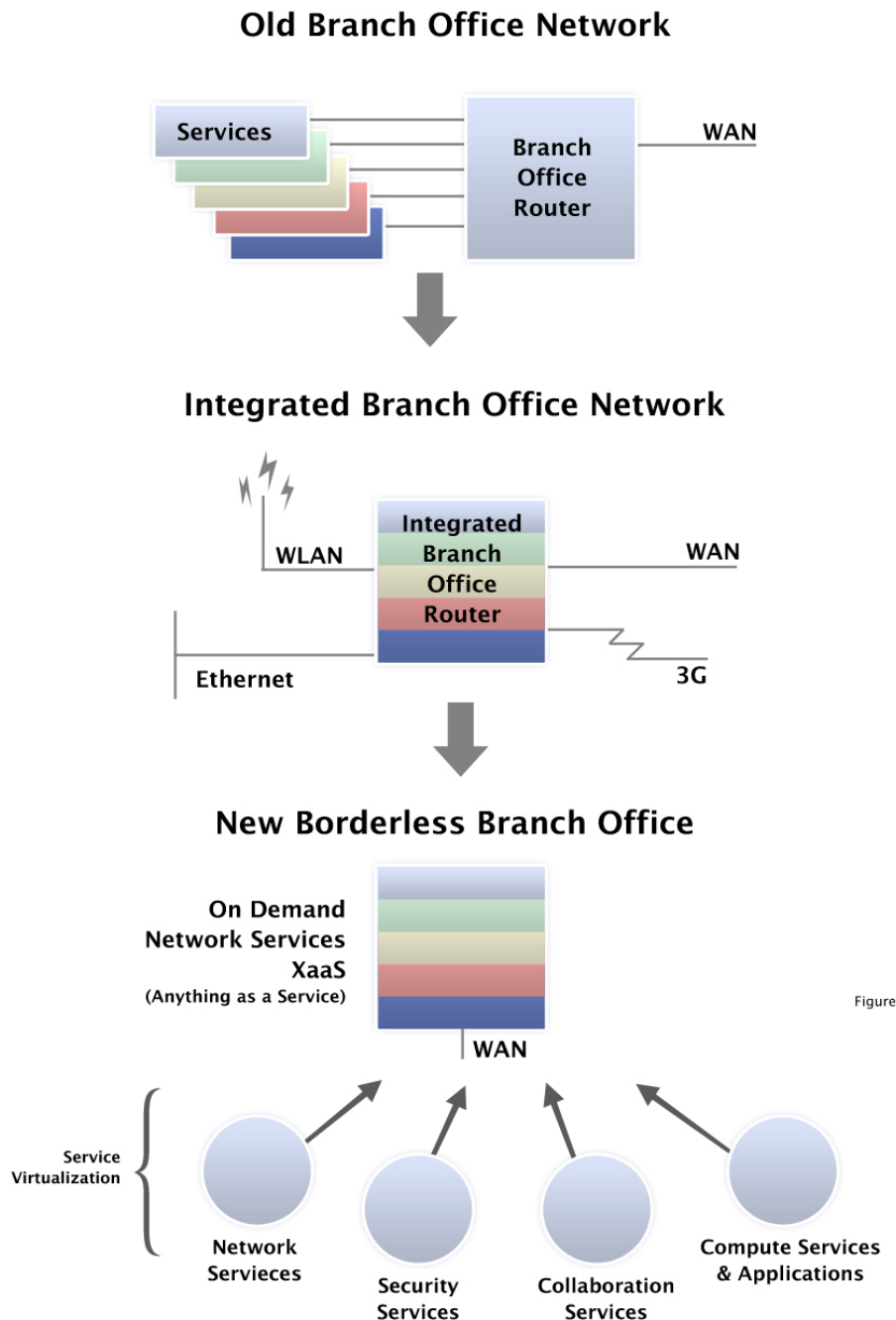


Figure 2

2.2.1.0 Network and Security Services: Network services such as routing, switching, wireless LANs, wide area plus 3G network connect, application acceleration, network analysis and management are fundamental connectivity services for branch office operations. Security services such as firewall, IPS, VPN, video surveillance and other threat defense services make up the core group of security services in the branch.

2.2.1.1 Collaboration Services Including Mobility: Embedded collaboration services including unified communications and specific video assist and scale features that support a wide range of video services is key to enabling a rich communications experience. A unified communication system in the branch that supports mobile platforms so that directory, call forwarding, v-mail retrieval, fixed mobile convergence, etc., are linked between a mobile device and desktop phone is not only a surprise and delight but a material productivity advantage. A few firms such as Cisco, Juniper, Extreme, 3Com and HP have embedded an application development environment in their branch office solutions that deliver voice recording, fax over IP and other 3rd party collaboration services which inject innovation into branch operations.

2.2.1.2 Compute Services And Applications: In addition to network, security and communication services branch office platforms are now also integrating a suite of compute and application services. The above mentioned application environments embedded into Cisco, Juniper, 3Com and HP's branch office solutions allows IT leaders to deliver customizable applications that have industry vertical contexts such as the ICW Healthcare Connector or Tiani Spirit's Medical Data Exchange applications, available on the Cisco Application Extension Platform (AXP). In addition to application hosting Cisco is now embedding a storage system and has announced support for virtualization and Windows Server platforms.

In short, next generation branch office equipment is bundling compute, storage, network and applications into a single hardware platform. The above services should be included in the hardware platform and made available when needed and where needed. For example, a branch may not need a communication system but another branch may. The next generation branch office platform should allow IT leaders to pick and choose which branches get which service. This approach offers budget flexibility as well, where capital spend may be available for initial deployment, while software license budget is available in subsequent quarters.

2.2.2 Operational Efficiency

A branch office solution can drive operational efficiency and lower not only IT total cost of ownership but corporate operational spend too. The value of a single scalable hardware platform that supports a wide range of services is first and foremost favorable to minimizing IT support/operational cost and local branch IT footprint. This approach allows a centralized IT team to control/configure/manage/update, etc., thousands of branch location's local and wide area networking, unified communications, video, compute and application services securely. Rollouts of new branch openings can be performed quickly as configuration is centralized. A mixture of branch services can be deployed across different branch locations, as needs dictate while new service delivery is conducted on-line and remotely without the need for site visits or truck rolls. Services delivery scales without operational complexity.

The option to host critical local branch applications offers another level of reliability and survivability preserving branch operations in the case of a wide area network, data center or cloud computing failure. Access to and extension of cloud computing applications to the branch office environment is an important requirement now which will only increase in importance over time. IT leaders should consider branch office solutions with specific cloud access features such as performance acceleration and security as these types of features will increase application delivery options of cloud, data center and locally hosted applications. Cloud access and extension to the branch environment offers IT leaders options of on-demand and on-premises application placement.

Another operational efficiency opportunity is to control power consumption in the branch through network control. In addition to a new generation of power efficient branch office devices, Cisco stands alone in offering a solution to control IT and non-IT devices through its EnergyWise architecture. EnergyWise provides, in essence, a centralized digital thermostat to control branch IT devices and over time non-IT electronics such as lighting, heating, air conditioning, etc.

3.0 Are You Ready?

There is a new era in simplified branch office IT. This new era is characterized by a single hardware footprint that delivers network, compute, application, security and storage elements. But beyond the simplicity of hardware design is the service portfolio that delivers collaboration, video, mobility and a wide range of business applications all of which are managed remotely. Branch office suppliers such as Cisco, Juniper, 3Com, HP, Avaya/Nortel, etc., all are racing toward this new era with their branch office products. Where they differ is on the level of hardware integration and service portfolio availability. Here Cisco has a clear lead with over 7 million Integrated Service Routers (ISRs) deployed around the world, the largest installed base by far.

So how does an IT leader deliver branch office operational efficiency and increased customer experience with the next generation of branch office solutions?

First many of the services mentioned above are being packaged as modules into existing branch office network equipment which preserve investment and avoid a rip and replace approach. For some, investing in new branch office hardware will be required especially as video and collaboration services increase in demand. The most appropriate course of action is to develop a thoughtful plan or architecture, which plots out the investment and service course for the branch office environment. See Figure 3.

Three Phase Architecture Process

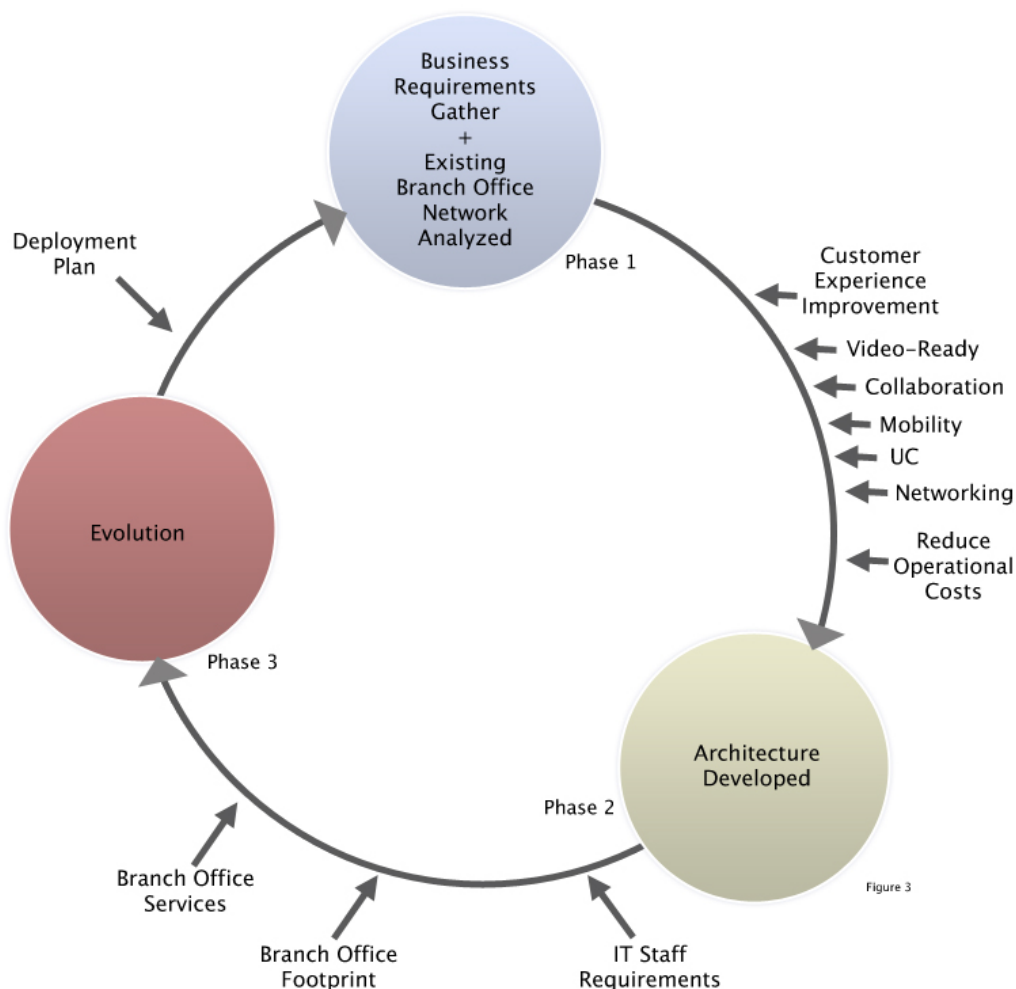


Figure 3

3.1 Three Phase Process To Branch Office Architecture Development

Network architecture is the bridge between business strategy and evolution. Architecture design starts with line of business (LoB) managers to capture their requirements and catalog customer experience improvement initiatives.

I have used the following three step process with great success for firms such as Boeing, Schering Plough, Barclays Bank, Liberty Mutual, the FDIC, the State of Alaska and many others.

3.1.0 Phase One - Situation Analysis: The first phase is a data collection and interview process where LoB managers communicate their business requirements and future needs such as number of new branch offices, customer experience enhancements, new applications, branch staff requirements, business monitoring requirements, etc. The existing branch office network and data center is evaluated and cataloged in terms of capacity, existing services deployed, wide area bandwidth available, etc. Invariably, there is a gap between existing branch office resources and business expectations. This gap is then communicated in terms of a set of branch office business requirements that drive the structure of a new architecture.

3.1.1 Phase Two - Architecture Development: With the above requirements as a guide, the branch office network can be designed. The network architecture will be a framework or blueprint in which IT leaders will invest in networking technology and services. The network architecture should project business out a minimum of three years and include physical network, logical network, services and management components. Most importantly the borderless branch office network architecture will be aligned with business transformation goals, an enabler for new business models and revenue opportunities, lower operational cost, etc. In short the network architecture is a means to address and reach business goals identified during phase 1.

3.1.2 Phase Three - Evolution: Once the architecture direction is determined from Phase 2, IT leaders can define a staged transition plan that designates the time-ordered set of steps which will most efficiently and cost effectively result in the transition of the corporate branch office network from its current state to the desired state. Evolution may be event based or full funded. Events may be a new branch office opening, new services needed in the branch, a merger or other event which prompts IT to deploy the new architecture.

Conclusion

The above process can guide IT leaders to a thoughtful architecture-led next generation branch office environment which addresses operational efficiency, customer experience improvement and other business requirements. The tight coupling between data center and branch office as well as the large service portfolio embedded in branch office solutions dictates an architectural-led process take place that can extract maximum business value. Conversely, point product approaches will often result in lack of scale, increased complexity, larger IT operational cost and missed business expectations.

About Nick Lippis



Nicholas J. Lippis III is a world-renowned authority on advanced IP networks, communications and their benefits to business objectives. He is the publisher of the Lippis Report, a resource for network and IT business decision leaders to which over 30,000 business and IT executive leaders subscribe. Its Lippis Report podcasts have been downloaded over 60,000 times; i-Tunes reports that listeners also download the Wall Street Journal's Money Matters, Business Week's Climbing the Ladder, The Economist and The Harvard Business Review's IdeaCast. Mr. Lippis is currently working with clients to transform their converged networks into a business platform.

He has advised numerous Global 2000 firms on network architecture, design, implementation, vendor selection and budgeting, with clients including Barclays Bank, Microsoft, Kaiser Permanente, Sprint, Worldcom, Cigital, Cisco Systems, Nortel Networks, Lucent Technologies, 3Com, Avaya, Eastman Kodak Company, Federal Deposit Insurance Corporation (FDIC), Hughes Aerospace, Liberty Mutual, Schering-Plough, Camp Dresser McKee and many others. He works exclusively with CIOs their direct reports and business leaders. Mr. Lippis possesses a unique perspective of market forces and trends occurring within the computer networking industry derived from his experience with both supply and demand side clients.