

# REMOTE BRANCH MANAGEMENT FOR BUSINESSES

Simplified through Remote Infrastructure Management Services



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## Abstract

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As organizations expand and grow, they rely on branch offices to either gain a foothold in new markets or better serve their customers in local markets. The branch offices such as - bank branches, retail stores, sales and service centers, car dealerships, insurance agencies or hospital branches - represent the face of the organization to end customers. Consequently, it is crucial for organizations to provide a smooth flow of work and a uniform experience every time the customer interacts with the branch.

Most organizations also employ remote workers to retain talent, save on operating costs, or to maintain a local presence. To be productive, these remote users need reliable access to the applications on the corporate IT network. In many companies the existing traditional solutions are no longer able to satisfy the evolving and growing needs of these remote users. In addition, branch IT networks are becoming too complex to manage and too expensive to maintain. Organizations need a simplified, centrally managed remote office solution that is easy to implement while providing reliable and secure access at low costs. This white paper explores the need for remote office solutions and outlines what a remote office solution should look like and what it entails.

## Introduction

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The growth and expansion of enterprises automatically creates a pool of remote network users who could be based at regional offices or even be telecommuters. What are the drivers for the increased adoption of remote offices? An important reason is the geographical dispersion of talent. In emerging markets such as India, over 50% of the population resides in towns and villages and hence remote offices are critical.

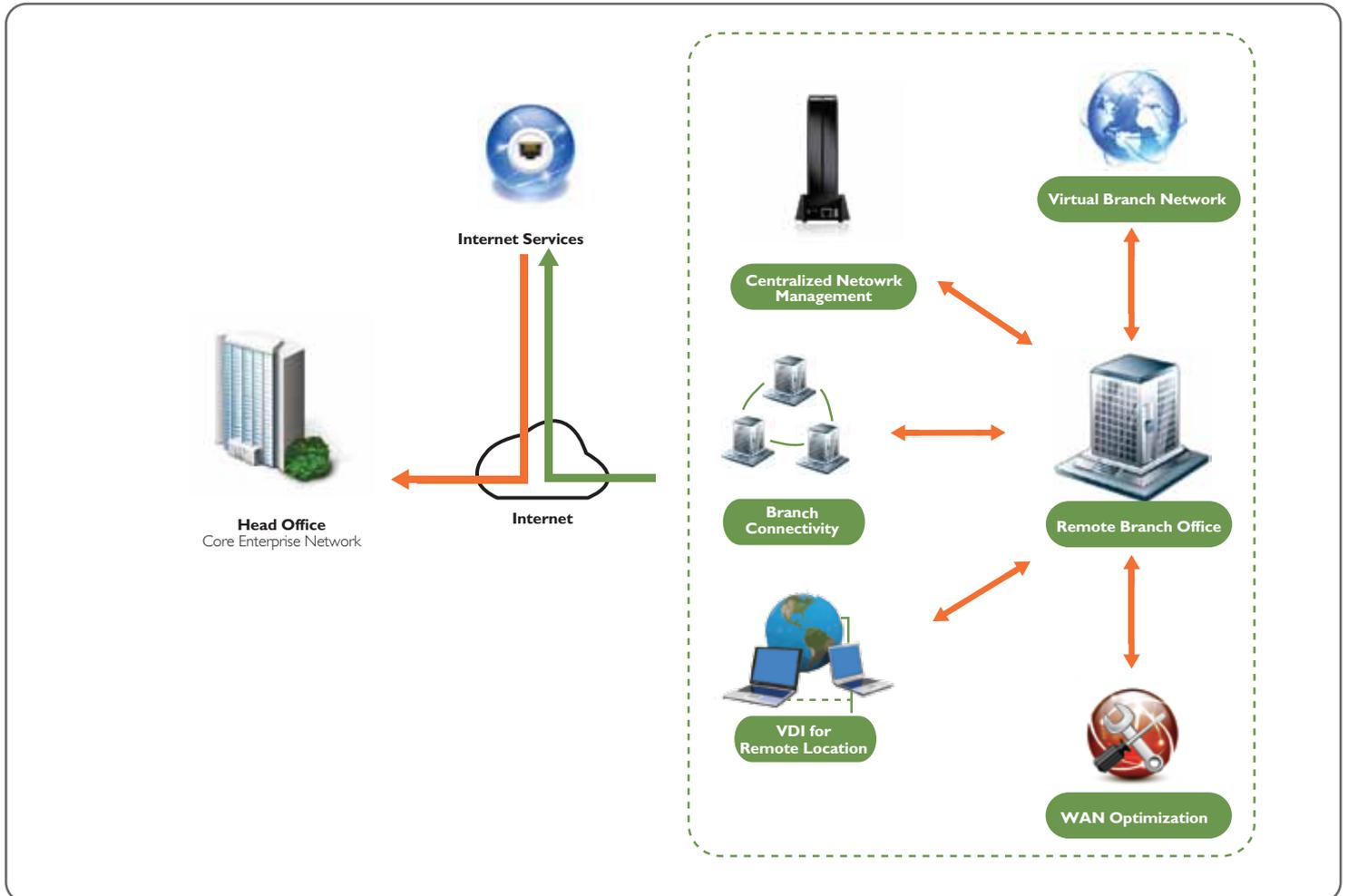
The healthcare industry is an area where remote offices play an important role as these services are usually concentrated in cities, while rural areas suffer from a serious shortage. In the case of banks, with 625,000 villages in the country, setting up rural branches is a necessity to meet the challenge of providing "banking services for the unbanked." In fact, close to 50% of the total branches of some of the larger banks in the country are located in rural or semi-urban areas.

The situation in developed economies is more pronounced with over three out of every four North American enterprises having more than ten remote offices each. An interesting observation is that the majority of those offices have little to no local IT support.

Technology infrastructure plays a big role in enabling these remote offices and users. In the past decade, organizations have tried to centralize and consolidate their IT footprint through the use of datacenters. These served as alternatives to IT networks at remote sites/branch offices that had become too complex to manage and expensive to maintain. Moreover, organizations wanted better visibility and control over their branch operations, without having to incur the additional costs on setting up local IT infrastructure, deploying IT support staff or worrying about data security at the branch level, besides adhering to corporate guidelines for data backups and recovery measures.

However, with the increased volume of information processing and the complexity of the applications that are being used to carry out business effectively, traditional solutions for remote users no longer satisfy business needs. Advances in technology can provide organizations with options that cost less, perform better, are easier to implement and manage while ensuring reliable service, secure access and scalability.

This paper suggests a new approach to a Remote Office Solution – a solution comprising various components that can be plugged in depending on the specific needs of the organization. A key benefit of the solution is that it can provide measurable performance, redundancy, security and reliability benefits. The solution framework is depicted below:



**Figure 1: A Remote Office Solution framework**

## The recommended plug and play components are:

- **Virtual Branch Network**

Traditionally, companies have served the technology needs of these remote users either through the use of a branch office router connected to the enterprise IT network through an IP subnet, or through Virtual Private Network (VPN) client software on laptops/PCs in the case of telecommuters. However, these solutions are simply not sufficient to cater to the demands and needs of today's users. On the one hand, users want to be able to connect to the corporate network using internet-enabled tablets and smart phones. On the other hand,

organizations, especially in regulated industries, want to ensure that their applications and data are secure.

A Virtual Branch Network (VBN) addresses major drawbacks in earlier network architectures through its two major components – the controller that acts as a gateway to the enterprise network and the Remote Access Point (RAP) that allows secure and shared access to multiple devices through wired and wireless LAN interfaces.

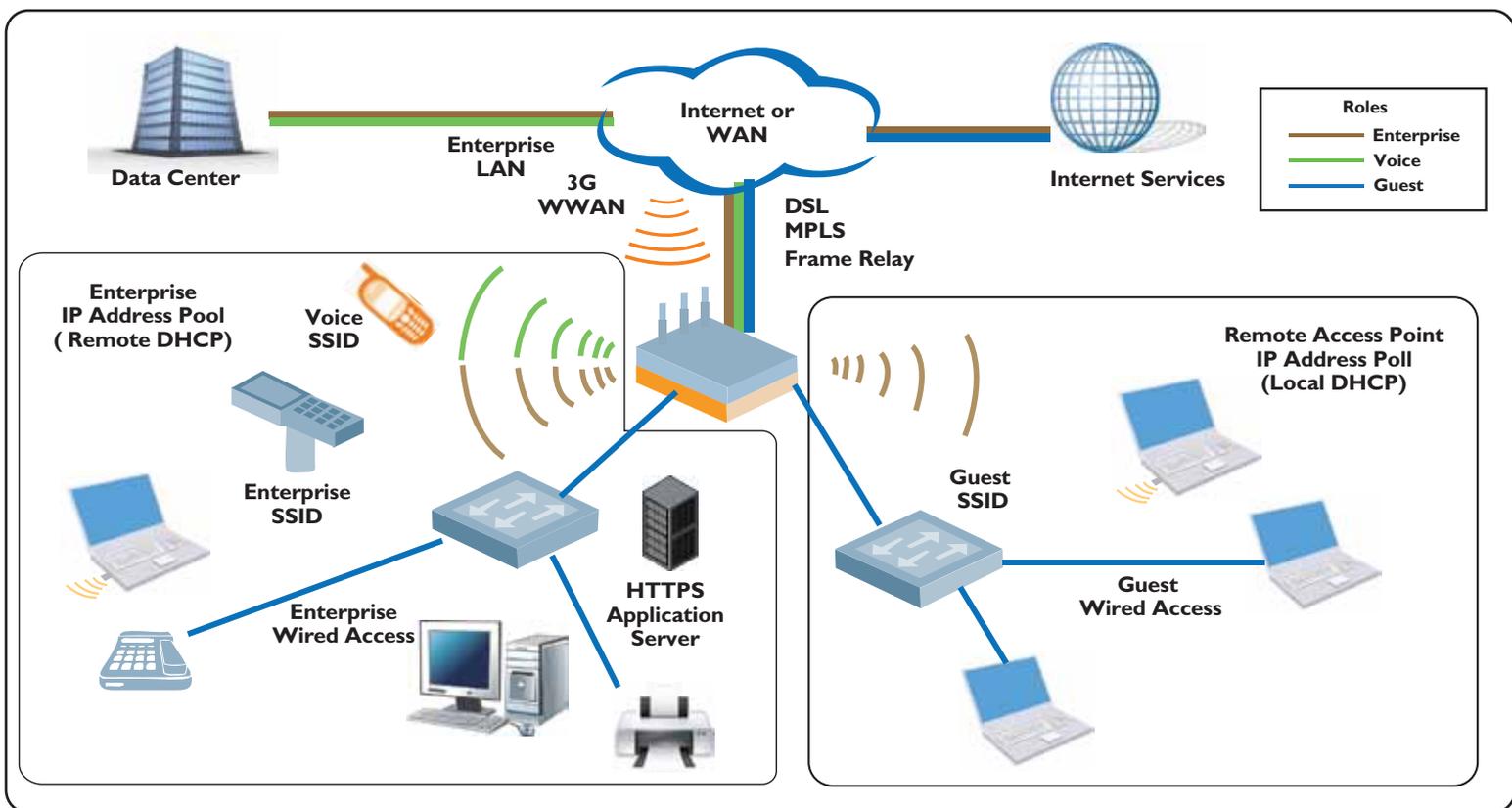
• **Centralized Network Management**

Enterprises typically invested in less-sophisticated and lower performing network technologies at branch offices compared to their core enterprise networks. However, these investments have not been as cost-effective as intended, since the usage of slow performing Wide Area Networks (WANs) resulted in independent IP sub-networks at each branch and consequently diverse equipment across locations. Under this scenario, remote sites became complex to manage and expensive to maintain, and new sites cumbersome to configure.

Organizations can benefit immensely from the more simplified and centralized management of remote network locations and remote users. A VPN-based solution from an OEM using a completely new remote architecture is shown in Figure 2.

Consider the case of a large bank requiring a remote network solution for its branch locations across the country. The connectivity to the corporate IT network could be through WAN – wired or wireless access, with the remote user using Virtual desktop Infrastructure or laptops to connect to the central site to access applications.

RAP can provide WAN connectivity to the Data Center via the internet using DSL or VSAT (satellite connectivity), or building P2P WiMAX or Wi-Fi connectivity to the nearest service provider. In rural locations where other options may not be feasible, wireless connectivity is through a rural ICT device that works with CDMA/GPRS/3G/DSL or WiMAX. Satellite based connectivity or VSAT based connectivity is the last option for establishing connectivity to the remote branch.



**Figure 2: Virtual Branch Network**

As per this architecture, new remote offices cost less, and are easier to set up and can accommodate the multiple devices of remote users. This solution provides companies with greater flexibility and agility in business operations, lowers the total cost of ownership to set up new branch offices and makes remote working a viable option.

Wired devices are connected directly to one or more secure jacks on the RAP and are associated with the SSIDs of RAP. Users can access and login to the Data Center applications using the available link via secure access over the IPSec tunnel.

### • **Virtual Desktop Infrastructure (VDI) for remote locations**

With Virtual Desktop Infrastructure, remote users at branch locations can easily access the applications on the corporate IT network over a WAN. It saves costs as it does not require the remote user to have a high end desktop machine or require the installation of client application software. WAN optimization appliances are now more sophisticated and can run hypervisor. This solution optimizes traffic for remote desktops fed by OEM View VDI broker over the WAN.

### • **Server and Storage Centralization at the central data center with appliances at remote locations**

A company can have complete control over its remote locations by consolidating or hosting servers and data storage from its remote locations to its data center. This is possible using an application at remote locations that does not impact the end users' application performance even across vast distances and during WAN outages. This also allows the company to restore a branch office in case of power failure or data loss. No onsite IT personnel are required to back up branch data and there is no risk of equipment theft or hacking at remote locations. In the event of a disaster, it is possible to quickly re-provision services and also enable branch access to centralized data – even during WAN outages. Thus, this solution clearly simplifies branch IT needs and saves costs.

The solution can also provide end users at the branch with a high-performance desktop experience by projecting virtual desktops from the data center, eliminating WAN challenges and giving IT central control, security, and cost savings.

### • **WAN Optimization**

WANs and hybrid networks enable business by connecting people, applications, and data. With the help of WAN optimization appliances, application delivery to the branch can be accelerated. The appliances also optimize traffic for remote desktops using Virtual Desktop Infrastructure (VDI) over the wide area network.

The plug and play components may be selected based on the requirements for setting up the branch. Two other key considerations involved in a remote branch setup are power and application security.

## Power

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Some of the best practices in managing power requirements are:

- Making use of minimum power supply while using optimized components (RAP, WAN optimization appliances with loading hypervisor) and consolidating server and storage at DC locations
- VDI or Tablets (specifically iPads) instead of traditional workstations to save 60-80% power
- Power backup (UPS) and alternative solar solutions as a last resort in case of no power available in problematic areas

## Application Security

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Besides infrastructure security, application level security is required to make the rural branch more secure.

There are products for intra VM communication security which can be installed on the optimization appliances and at the branch to secure applications hosted on VM (VMware Hypervisor). This security product offers a kernel module which is installed on the hypervisor and inspects the traffic even before it reaches the vSwitch.

Secondly, a web security appliance can be used at the Data Center for protection against Advanced Persistent Threat (APT) attacks if the remote branch is on a wireless connection.

Lastly, database level security is available to monitor database traffic flows at the Data Center. The entire set up can also be protected against Distributed Denial of Service (DDoS) attacks, preferably at the DC level.

The proposed remote office solution framework is applicable in several contexts across industries. Some typical examples include:

- A bank looking to expand its footprint and include more people, especially rural areas under its umbrella.
- Education providers who are desirous of setting up satellite campuses in other locations to expand reach and access.
- Retail chains who want to establish a presence in emerging markets.

## Conclusion

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In summary, the proposed remote office solution centralizes access control, authentication, encryption, and management, thereby simplifying network management and enhancing security while providing remote workers and their multiple network devices with access to centralized services. Thanks to the flexible nature of this solution, it can be deployed quickly and scaled up with minimum fuss.

Enterprises that are looking to capitalize on the growing Indian market have to ensure that their technology infrastructure is well-established to achieve their goals. For this, the right remote office solution becomes a critical success factor.

## About the author

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**Varun Malhotra** is the National Practice Manager – Integrated Communications Network in the System Integration & Maintenance Services Business Unit and has over 10 years of experience in the industry. He has extensive experience in Consulting, Design and Implementation of multiple Enterprise Networking technologies for various business transformations. He currently leads all solution specific requirements and act as a lead for addressing end-to-end solution requirements for all key customers across Wipro Infotech. Varun holds a Master of Science Degree in Computer Science and an Advanced Diploma in Software Applications.

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