

# Remote Access Solutions Market Trends

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## Preview

Remote access technology allows mobile professionals and telecommuting employees to remain connected to the corporate office. The simple dial-up solutions of the past are giving way to a wide array of advanced services that provide secure, broadband access. The overall market continues to develop, with much of the focus turning toward VPNs supported by ISPs. This report identifies the leaders of the remote access market and discusses the trends driving the industry.

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## Executive Summary

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Remote access technologies have been embraced by companies looking to implement telecommuting programs. In their earliest incarnations, remote access solutions were simple dial-up terminal services that provided terminal emulation. Now, remote access solutions are advanced and complicated. They can include dedicated remote access services (RAS) and concentrators, VPNs implemented using IPsec or SSL, public Internet or managed networks, and software designed to provide remote control of desktop computers and collaborative applications.

Each of these areas, moreover, continues to evolve in response to the demands of a growing army of mobile and remote workers. Significant overall developments which have affected the market have included:

- Increasing availability of broadband connections, particularly DSL, bringing a wider range of applications possibilities and greater need to remain online, rather than simply dial in intermittently for e-mail messages.

- Increasing acceptance and deployment of VPNs as a standard means of extending corporate networks to remote users.
- Gradual rollout of wireless data services, including Wi-Fi and next-generation wireless services.
- Continuing development in call handling capability of RAS devices.
- Evolution of the outsourcing market to meet remote access networking needs at any level, including carrier-agnostic VPN services provided by operators that tunnel a VPN service across multiple networks.

## Description

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Remote access solutions began as simple dial-up terminal servers providing terminal emulation, generally attaching to a centralized mainframe service. As corporate IT has evolved to include minicomputers, PCs, and finally, network connected PCs and the Internet, remote access services have been adapted to meet evolving needs.

Remote access, in its purest form, is simply another means of attaching a system to the corporate computers or networks in order to send and receive messages or share information. Remote access devices were originally designed to act as terminals. Today, however, network access has focused upon the Internet as a single standard, backed by a range of standard PC applications, and a growing range of integration with legacy software, cooperative applications, portal-based data access systems, and the like. This means that it is possible to bring a growing range of office functionality to remote sites, where users might use corporate data and applications just as though they were at the office.

Enabling this type of access, however, requires significant infrastructure and calls into play a variety of concerns regarding security and manageability. The market has evolved to meet needs at all levels, which today range from small businesses with occasional remote access for communications from geographically local users, to the vast requirements of international corporations with thousands of remote users around the globe handling high-bandwidth, mission-critical applications. Hardware has developed to accommodate both ends of the market, and there has been an increasing market for outsourced solutions. Software products have also continued to evolve; although they are more likely to be considered demand drivers for remote access capability than part of the infrastructure, developments in applications are important to understanding how this sector is likely to evolve.

## State of the Marketplace

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The remote access marketplace is really a collection of markets that provide either an end-to-end remote access solution or just parts of one. A list of participants in the remote access market, in fact, could be broadened to include just about every player in the intranet/extranet sector. The major players, however, can be categorized as hardware providers, who are responsible for the remote access servers and associated equipment that provides remote access connections for both carriers and corporate in-house networks; and service providers, particularly those who are offering managed VPN services.

All sectors of this marketplace have been affected by the dot com bust and subsequent downturn in the telecommunications sector.

### **The Remote Access Server Market**

Remote access has changed through the years as networking needs and available equipment have

evolved. The first generation of remote access technologies combined a terminal service and a modem pool. They were typically used in institutions where a mainframe connection was required, and could be accessed through terminal emulation with data rates of between 300 and 2400 bps. As PCs began to displace dumb terminals in the 1980s, remote access schemes needed to change from one-to-one connections to simultaneous connections from multiple locations. This resulted in a model in which a remote PC could be connected via modem to a LAN.

The result was the evolution of second-generation remote access technologies, which included hardware integrating a modem, terminal server, and LAN access in a single device. These eventually became the multi-card remote access servers of today. In the third generation, brought on by the Internet explosion of the mid 1990s, carrier-class switches began to emerge, designed to handle much higher capacity. These were designed to meet the needs of ISPs and large corporations. A modular card system was required to meet the varying needs of these high performance switches.

The evolutionary path for next-generation devices will be toward even higher density functionality, including the capability of handling 5000 to 10000 calls per rack, improved scalability and performance, and the capability of handling diverse services such as VPN outsourcing and ISP wholesale. The high-end, modular RAS devices in use today are often called remote access concentrators, and they integrate dial-up solutions including analog modems, T1/E1 access, ISDN access, access servers, routers, and LAN hubs in a single chassis.

## Carriers and VPN Providers

VPNs are becoming the remote access solution of choice for most enterprises. Remote access VPNs can be put into place in three basic architectures:

- Deployment of remote access servers at large sites, with users dialing in either locally or using a toll-free number.
- Remote dial-up to service provider remote access services at local PoPs.
- Outsourcing to a managed service provider.

Managed VPN services have emerged as a potent force in the remote access market. The VPN can be set up using a combination of carrier and network-based equipment, and can extend secure, IP-based network services to remote locations. For remote users and telecommuters, it provides the potential to connect to corporate networks from anywhere that a PoP can be reached—which can be almost anywhere if a solution based on the public Internet is used. The market for remote access managed VPN services is expected to reach \$5.3 billion by 2006, according to IDC and Ovum.

The managed network-based IP VPN market has been growing over the past several years, as new options such as Multiprotocol Label Switching (MPLS) have emerged. A managed network IP VPN service provides a secure connection for business intranets, extranets and remote access using public networks, with customers isolated through encryption and tunneling. Networked services are generally provided over backbone data network services optimized for high bandwidth traffic.

## Market Leaders

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The market for these services is highly volatile, with numerous players offering a continuum of services, with varying degrees of management and varying customer premises equipment requirements. The top players combined only control a small portion of the total market. The marketplace spans a wide range of hardware, software and service products. Leaders can be identified in terms of the carrier services sector or the basic remote access hardware sector.