White Paper:

Managed Network Services Trends for Today's Enterprise Organizations

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1. Introduction to Managed Network Services

The term managed network services can be used to describe a broad range of solutions related to a network. For purposes of this document, network management is defined as: *the strategies, applications, tools and skills required to sustain the performance of a customer's network.* The goal is to ensure that business networks are managed to be highly available and deliver the required performance. Furthermore, the responsibilities of a managed service provider (MSP) are to provide delivery and management of network-based services, applications, and equipment. Today, more and more organizations are leveraging managed network services from managed service providers in order to benefit from improved network reliability, efficiency and security. The purpose of this paper is to gain a better understanding of the need for managed network services, and how they can help solve many networking challenges for today's enterprise organizations.

2. IT Challenges & Networking Trends for Today's Enterprises

There are several trends that are driving significant changes in the enterprise marketplace.

Organizations are demanding a higher ROI from their network investment and are closely watching where every dollar is going.

- Continued cost cutting will result in greater requirements to support more initiatives with fewer resources

- Enterprises are deploying a lot more applications to generate revenue or improve business operations. As a result, IT departments are continuing to be more strategic, supporting a greater number of corporate initiatives

- Next generation end user equipment will become more prevalent throughout the organization requiring greater IT application specialization

- Enterprise IT departments will need to outsource much of this specialization or incorporate significantly more training into their requirements

There is a greater focus on 'virtualization', cloud computing and 'unified access'.

- Greater "virtualization" efforts to cut cost, and increase efficiency

- Greater marriage between internal IT and the network

- Managed services will become less of a "convenience" and more of a necessity, as factors such as network security, availability and continuity become critical to successful virtualization implementation

- The new generation of managed services will need to go well beyond the ability to provide and manage access to customers. They will need to provide multiple levels of access, insure

maximum uptime, enable custom development for successful IT implementation, and provide level 1 through 3 supports at a minimum.

For an enterprise, finding the network architecture and management scheme that best meets their business needs and supports all of their applications at all of their locations is critical for success. As a result, more organizations are turning to managed service providers to provide managed network services that solve these challenges.

3. Solving the Challenges with Managed Network Services

Outsourcing network management means that a company hands over part or all of the management of its network infrastructure, applications, and security to networking experts. These experts might include service providers, systems integrators, or value-added Resellers (VARs).

Outsourced network management not only allows the organization to cut cost or support more requirements with existing resources, it removes the requirements of day to day operations from an organization's internal IT team allowing them to focus on the strategic revenue generating initiatives of the company.

The benefits of using an external network services provider can be summarized as follows:

- **Focus on priorities** - As network management becomes more complex, customers can offload the ongoing challenge of systems and skills updates. If a customer chooses a provider that has a broad scope of applications and infrastructure experience—legacy, distributed, Web-based and otherwise—they can avoid the risk of failure that can come from the increasing interdependence of platforms and complexity of network management tools and devices. Additionally, because a customer's solution can be implemented in a shorter period of time, they can begin receiving the benefits that much sooner.

- **Problem resolution -** A services provider can detect and resolve problems faster and more completely than customers may be able to do on their own.

- **Cost savings –** Many times a managed network service provider can negotiate a better rate for networks, but even beyond that, enterprise customers can realize significant savings in training requirements, certifications, lost uptime, greater productivity etc. In addition, by using an external provider, customers can potentially offload the heavy up-front costs of hardware and software, and significantly reduce ongoing costs.

- **Predictability** - External providers can supply their services for an up-front cost, known and negotiated in advance. Subscription-type pricing lets customers allocate spending on a predictable path.

- **Strength of solution** - Customers can take advantage of the services provider's economies of scale and access better performance through best-of-breed solutions that they may not be able to afford and maintain on their own.

Overall, with outsource managed network services, enterprises should benefit from a simplified and cost-effective solution that improves efficiencies, enabling their IT departments to focus more time on strategic priorities and customer revenue generating applications.

4. How to Choose a Managed Services Provider

When choosing a managed services provider, companies need to understand their goals in order to select an ideal partner. Some of the criteria that enterprise-level executives need to be mindful of when choosing a managed network provider include:

- Scalable to support small to large, multi-location, multi-vendor networks
- "End-to-end" solution with automated processes and procedures
    - Single point of contact, problem ownership and resolution, optional operating system and configuration downloading, and second- and third-level support
- 24x7 support coverage
- Service Level Agreements on availability, mean-time-to-repair and other parameters which help you meet your business goals
- Standard and customizable performance & problem management analysis
- Centralized architecture and delivery
- Fast, efficient and easy customer implementation

Some of the other considerations include:

- Experience – have they deployed and supported large networks in the past?
- Support – Are they set up and willing to work with your company to deploy custom applications or specialized solutions?
- Business Continuity - can they offer a truly diverse network path in the case of outage?

5. Spacenet Solutions

Spacenet has spent the last thirty years providing nationwide service networks for some of the largest companies in the U.S. Spacenet is a complete managed network service provider supporting a variety of broadband access options to support any number of customer applications.

We leverage our true strength of customer network support, custom network implementation, the successful deployment of enterprise applications and our intimate relationship with our customers, which leads to understanding of their needs.

Sample Spacenet Customers

- Regis Corporation
- Boston Market
- Dollar General
- Goodyear
- Sunoco
- Cumberland Farms
- U.S. Postal Service

Managed service offerings provide the ideal vehicle to leverage our core strengths and the unique values we can deliver to our customers to help them overcome any networking challenge. Spacenet advantages include:

- 30 years of network design and management experience, providing service to over 100,000 sites today
- Nationwide team of highly skilled installation and on-site maintenance technicians
- Built-in network redundancy and backup solutions
- 24X7 support with a US based call center
- Comprehensive network operations with internal software development

5.1 Tying it All Together With the Right Hardware

A key to insuring optimal deployment and network support is insuring seamless integration with the existing and future platform components. Spacenet Managed Networks can be deployed and supported utilizing any of the major hardware components providing a greater level of flexibility and available hardware features depending on the specific requirements of each individual situation.

Depending on the customer requirements, Spacenet can also provide the option of utilizing our own custom integrated network appliance – Prysm Pro. Spacenet manufactures and installs the Prysm Pro, which is a modular, scalable, off-the-shelf IP network appliance that
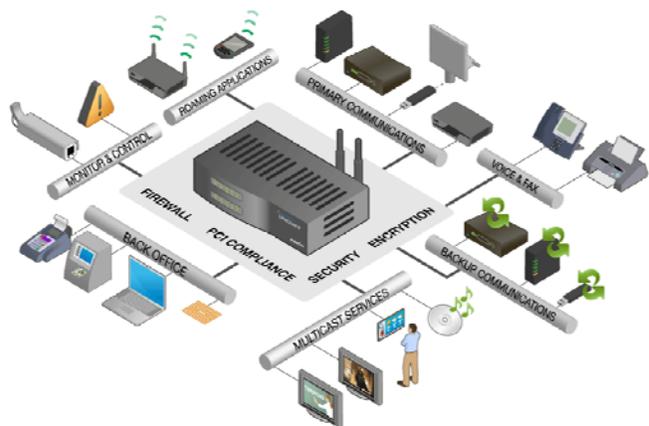
can be completely customized to support multiple secure networks. It provides integrated support for a wide range of corporate applications including retail applications/POS hardware interfaces, PCI compliance and multimedia content delivery such as digital media. It has the flexibility to address all site-level networking and application requirements on a single device solution.

Prysm Pro is a Linux based modular design that allows for total flexibility for future needs. The Linux based open source operating system allows for software-based features changes in a highly customizable fashion and on very short lead times. Spacenet can provide custom development for the Prysm Pro in support of customer needs. This benefit offers a future-proof hardware platform providing complete control of functionality and security features required throughout the life of the network.

Managed services are extended to each remote site using a managed network appliance (MNA). MNA serves many functions in conjunction with cloud based items:

- Physical port separators
- Logical/secure separation
- Automatic switching between primary and secondary
- New management via web portal

Spacenet can use 3rd party hardware such as the Cisco family of routers to deliver managed network services or can use its own proprietary Prysm Pro network appliance.

Some of the technical features include:

- Automatic switching between redundant WAN connections (satellite, wireline and wireless technologies)
- PCI Data Security Standard compliant network appliance
- Advanced integrated Stateful Packet Inspection firewall support
- IPSEC/VPN tunnels with policy-based tunneling
- Automated routing between primary and secondary links
- Integrated Wi-Fi hotspot services including authentication and activity logging
- HTTP filtering (supporting "White List" and dynamic Content Filtering)
- Integrated ATA for VoIP functionality
- POS serial hardware interface expansion

5.2   Connectivity Options

A critical component to any business is having reliable, affordable and secure communications including broadband data, voice and video services. Spacenet helps make access to data, voice and video communications easy across all locations. We also ensure that communications will be online when it's needed most to support all required business and back office applications. With our services, applications will perform as intended and will minimize both lost revenue and unforeseen costs from network outages. In addition, critical data will be secure.
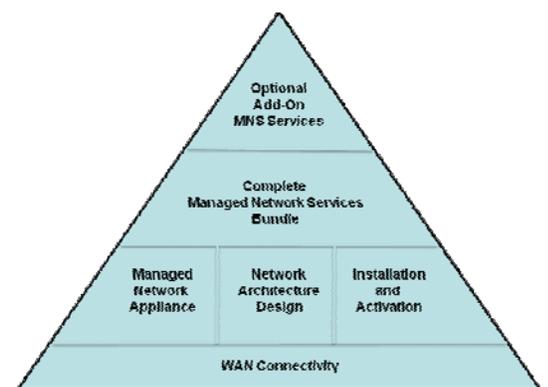
Spacenet provides a range of wireline and wireless technologies to provide an optimal balance of price and performance for our customers' networks. We can provide one technology solution or can combine multiple options such as DSL, EVDO, cable, T1, satellite, MPLS or even dial up to support all of an organization's voice, video and data applications at all of its nationwide locations.

5.3   Application Support

Spacenet supports a wide range of business applications for our clients.

- **Wi-Fi** - Wi-Fi services support requirements for both enterprise applications (employee email access, wireless retail devices, etc) and customer Wi-Fi "hot spot" access. Spacenet has proven expertise supporting business Wi-Fi and provides services that can be integrated with our customers' network infrastructure. We leverage our Prysm Pro network appliance to support integrated WAP for both corporate and customer Wi-Fi access, and our security services ensure separation of business and customer data. We can manage the installation, SSID/security installation, splash page for customer log-in, and more.

- **VPN -** Having a reliable and secure VPN is critical for keeping businesses running smoothly. Spacenet understands this priority and provides VPN Aggregation Hosting Services to meet our customers' requirements. We offer IPSec and SSL VPNs, and different options including hosting VPN aggregation at the customer's data center with remote management by Spacenet, or hosting at Spacenet's secure facilities (we provide two separate locations t o ensure a disaster recovery configuration).

- **VoIP –** Having access to reliable voice communications is a critical part of daily operations for most businesses. Voice over Internet Protocol (VoIP) offers many benefits including cost efficiency, useful features, flexibility, improved productivity and a scalable infrastructure. Spacenet's support for VoIP is based on proven technology, easy integration, reliable clear calls, affordable pricing and a choice of service plans.

- **Business Continuity/Network Backup -** Every organization faces significant risks when voice and data communications are interrupted. Productivity comes to a halt, transactions cannot be processed, critical applications go offline, and employees can't serve customers. In addition, a disabled network increases liability and fraud exposure and increases safety concerns. Having a continuity of communications plan in place helps minimize the risks of network downtime, and allows organizations to focus on their core business. Spacenet provides organizations with more options for cost-effective and reliable network backup. We make communications across locations easy, enable applications to perform optimally, and minimize lost revenue and additional costs from network downtime.

- **PCI Compliance** - Retail, hospitality and financial services companies are all too familiar with the Payment Card Industry Data Security Standard (PCI DSS) Program, and with the consequences of not meeting PCI standards. Spacenet's PCI certification provides an additional layer of confidence to our customers and helps ensure a secure managed application routing environment. In addition, we offer a range of services that help companies comply with PCI requirements more efficiently and easily, including PCI compliance services for reporting, logging and scanning.

	Automatic PCI Log Management	Enhanced PCI Log Management	Real-Time PCI Log Management
3 Month Online Log Storage	X	X	X
1 Year Offline Log Archive	X	X	X
Automatic Normalization/Prioritization/Analysis	X	X	X
Online Reporting Web Portal	X	X	X
Automatic Alerts	X	X	X
24 X 7 E-mail PCI Logging Support	X	X	X
24 X 7 Telephone PCI Logging Support		X	X
Daily Review and Analysis		X	X
Real-Time Event/Alarm Analysis			X

- **Network Security** - Having a secure networking environment is critical for protecting your business and your reputation. Spacenet understands this requirement for our customers and provides numerous security features, including centralized network security through our network monitoring ePortal. Some of Spacenet's security features include: PCI DSS-compliant services including PCI logging; AES encryption; managed firewall at the site level; access control web content filtering; intrusion detection and intrusion prevention services (IDS/IPS); access control lists; secure transport over the internet via IPSec tunnels; split tunneling via centralized controls and split routing policies; and LAN-based trafficking policing.

- **Digital Media** - Digital media is one of the most dynamic means available to deliver a message. The challenge is designing and implementing an effective solution to make sure your message reaches your customers. A critical component to any digital media solution is having a scaleable and dependable network that can deliver your content where and when you need it. Spacenet provides a comprehensive range of services that support integrated content delivery, including reliable and cost-effective digital content distribution leveraging our Prysm Pro network appliance.

- **HR Applications** – From improved hiring practices and administrative documents to training videos and product information, a properly implemented managed network solution can support any number of applications that help each location work more efficiently and better leverage policies and procedures maintained at the corporate level.

- **Custom Applications** – While most companies have similar goals, every company is unique and approaches their network with a different set of assets, challenges and objectives. Spacenet understands that the key to successful network management is to insure our customers ultimate goals are met leveraging their specific strength and addressing their unique challenges. From hardware to service to support, all elements of the Spacenet solution are designed specifically to insure flexibility and the ability to adapt to a customer's needs.

5.4   Network Management

Spacenet provides a wide range of network design and implementation support services to ensure our customers obtain maximum ROI from their investment. We can provide custom solution designs leveraging multiple access methods, and provide a single source for ordering and on-site installation. Our unique approach delivers 100% broadband coverage leveraging wireline and wireless access options along with comprehensive network management services.

Over the years, Spacenet has implemented tens of thousands of network sites. We work closely with our customers to ensure a smooth installation by assigning a Spacenet Program Manager to coordinate all aspects of the implementation and ongoing management of the network through the life of the contract. In addition, our online ePortal provides tools for deployment including site and service ordering and status tracking, as well as configuration of remote Spacenet devices.

Network Operations and Management Center

Spacenet provides customer service and support to a diverse customer base including enterprise, business and government organizations. Our customer service and support operation, known as the Network Management Center (NMC) and Network Operation Center (NOC), is located in Marietta, Georgia and provides a wide range of helpdesk support functions including:

- Proactive site level monitoring and alert/notification
- Problem management and trouble resolution
- Technical support to installers
- Technical support to on-site maintenance providers
- Site repair confirmation and technical support to end users
- Support via telephone, e-mail and/or Internet relay chat (IRC)
- Billing and account management

In addition to the standard activities, the Spacenet NMC is accustomed to handling special projects. We keep our NOC and NMS at peak efficiency and performance utilizing the most up-to-date technology and provide our customers with the first-rate support that their business networks require.

Maintenance

Businesses depend on properly functioning equipment to avoid costly downtime and ensure always on communications. Spacenet understands this requirement and provides comprehensive maintenance and repair services including:

- Testing/commissioning
- Diagnosis of the cause of malfunctions
- Removal and replacement of the malfunctioning pieces
- Repair, fabrication, or replacement of associated indoor cables
- Verification of proper system operation where no fault is found
- Interconnection to associated customer equipment
- Receipt and storage of spare equipment
- Completion and retention of required records and reports
- Return of malfunctioning units to designated repair facilities

We offer a range of on-site maintenance service options including: Next Business Day; Extended Next Day; Same Business Day; and Extended Same Business Day.

Consolidated Billing

Spacenet helps our customers simplify the billing process by providing a single invoice for all circuits/services across multiple WAN access providers. We can support various methods of billing including paper and electronic billing via overnight shipment and email.

5.5 Network Monitoring

An essential part of Spacenet's services are the network monitoring and management tools available to our customers, including the ePortal. Spacenet's ePortal provides customers with access to an extensive array of sophisticated web-based tools through a customizable, user-friendly and secure web interface. Vital network information is available 24x7x365 making it easier than ever to support business operations around the clock. Spacenet's ePortal helps our customers better manage, monitor, and support networks by providing real-time reports on network status and utilization information, insights into how network resources are being used and service performance reports. It assists our customers' first level help desk support in problem resolution and performance management. In essence, the ePortal serves as a virtual network manager that provides detailed insight into each site within the network. To ensure our customers have access to the latest and most effective
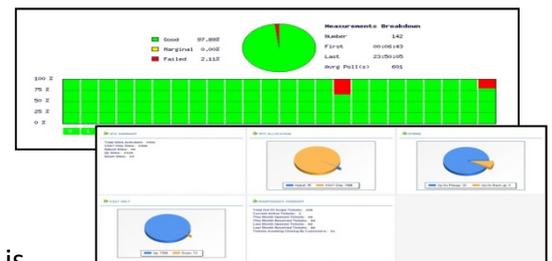
network management tools, Spacenet continues to refine and update the ePortal on an ongoing basis.

6. Regis Case Study

Improved Costs and Efficiencies in the New IT Age: Regis Corporation

Regis Corporation, the beauty industry's global leader in beauty salons, hair restoration centers and cosmetology education with over 10,000 locations decided to upgrade its network infrastructure to support its critical communications across thousands of salon locations.

Requirements

Regis prides itself on providing quality care and customer service, and their IT department supported this with a focus on network efficiency. When Regis decided to adopt new and evolving corporate applications that provide even greater benefits to employees and customers, they maintained their focus on network efficiency and implemented a solution that would get the most utility out of every dollar. To meet their new requirements cost effectively, the company is deploying a new CPE network management solution at each location and is implementing a fully managed network service.

> *"Increasing the utility and cost effectiveness of our communications network and corporate wide applications is very important for Regis Corporation. Spacenet's managed network services through its Prysm Pro is helping us meet this goal by serving as an all-in-one flexible network appliance that supports our comprehensive business applications more cost efficiently than competing alternatives."*
>
> *~Joel Wiens, Regis VP of Information Technology*

Solution

Spacenet was selected to provide managed network services enabled by the Prysm Pro appliance to interface with terrestrial and 3G modems at Regis salon locations. The Prysm Pro appliance provides support for automatic hybrid switching between its wireline and wireless technologies for network backup, integrated Wi-Fi hotspot services for customers, integrated Analog Telephone Adapter (ATA) for VoIP functionality, and POS hardware for its retail applications. The solution helps increase the utility and cost effectiveness of Regis' communications network and corporate wide applications.

Value

Spacenet's solution provides Regis with a fully PCI compliant managed network services solution to support over 7,000 salon locations. It provides integrated support and management for its business communication infrastructure including DSL, 3G, analog and digital voice, WiFi and VPN networking. The solution helps increase the utility and cost effectiveness of Regis' communications network and corporate wide applications. Spacenet's managed network services through its Prysm Pro serves as an all-in-one flexible network appliance that supports Regis' comprehensive business applications more cost efficiently than competing alternatives.

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In addition, it provides a simplified network design enabling Regis to interface with all of its applications on a single device. The Prysm Pro is highly customizable by Spacenet, which enables Regis to make changes to its configuration or develop new features as Regis' network requirements change.

Overall, with the new solution, Regis is able to support its comprehensive business requirements more efficiently by leveraging a simplified network design that enhances its evolving and expanding corporate and customer applications.

7. Conclusion

As IT departments strive to raise their company's network capabilities to the next level and improve efficiencies and network ROI while at the same time meet budget and time constraints, outsourced managed network services are becoming a popular option. Managed network service providers are offering a wider range of services available in different formats for customers to choose from. These services allow enterprise customers and their IT departments to focus on core business issues. Enterprises are realizing cost savings from these managed network solutions not on an individual per-site connectivity basis but rather from a reduced corporate IT and network management overhead, an increased level of site availability and uptime, and from the ability to focus more on customer revenue generating applications. Ultimately, this enhanced level of network ROI is driving enterprises to embrace the managed network solutions model as an ideal platform, and finding an ideal managed network services provider is a critical part of the process.