

## The Virtual Private Cloud

### Automating Solutions Management is the Key to Success in Cloud Services

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Cloud services are increasing the complexity of service provider offerings as well as presenting significant challenges for operational and business support systems. To effectively compete in this environment, service providers must not only innovatively position themselves and their services, but also ensure complete delivery of IT functions to their customers.

**Automating the solution management process is essential to controlling the variables in the design, sale and implementation of cloud services.**

The delivery of cloud services often requires network services, computing infrastructure, applications and managed services to be bundled in customized ways. Because of their customized nature, designing these solutions typically requires many iterative steps, which not only results in longer sales cycles but also complicates implementation.

Automating the solution management process is essential to effectively and efficiently controlling the many variables involved in the design, sale and implementation of cloud services. Because today's complex cloud deployment models require the careful integration of components such as storage and computing systems, MPLS networks, software applications and managed network services, automation ensures all activities are well coordinated and all components function as required. Without such automation, the following outcomes are common:



- Collaboration among personnel who are proposing and delivering sophisticated solutions is difficult, time consuming and error prone.
- Responding to customer-initiated requests (simple or complex) frequently requires one to three weeks.
- Approximately 1/3 of solutions that are sold cannot be implemented as sold.

Additionally, by integrating solution management and fulfillment systems, service providers can significantly improve deployment efficiency as well as increase sales productivity. By better understanding and controlling the solution management lifecycle, service providers can compete more effectively within all types of cloud service offerings, including Virtual Private Cloud (VPC) offerings, which present the most complex challenges.

#### **A Brief Overview of Cloud Service Models and Cloud Deployment Models**

The three primary types of cloud service models are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS). With SaaS, enterprises use the provider's applications running on a cloud infrastructure. These applications run the gamut and include all types of productivity, IT and business applications.

Utilizing the PaaS model involves deploying any consumer-created or acquired application onto the cloud infrastructure. Lastly, IaaS involves the provision of processing, storage, networks and other

fundamental computing resources into the cloud. With IaaS, enterprises and users benefit from easy, on-demand access to required resources.

Complementing these three cloud service models are four common **cloud deployment models**:

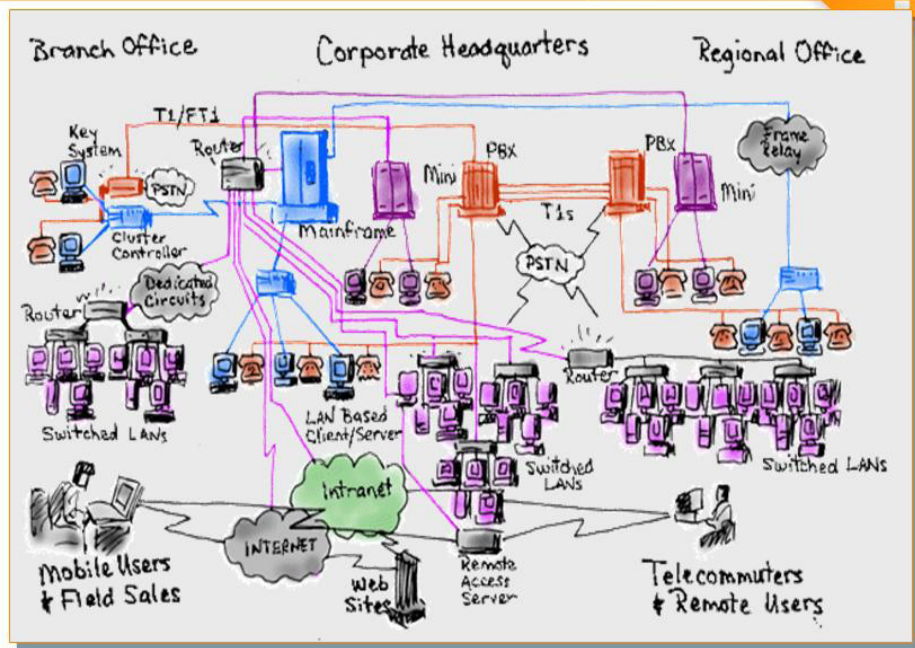
- **Private Cloud** – the cloud infrastructure is operated solely for an organization
- **Community Cloud** – the cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns
- **Public Cloud** – the cloud infrastructure is made available to the general public or to a large industry group and is owned by an organization selling cloud services
- **Hybrid Cloud** – the cloud infrastructure is a composition of two or more clouds (Private,

Community or Public) that remain unique entities but are bound together and enable data and application portability

The Virtual Private Cloud is typically a Hybrid Cloud deployment model and could incorporate any of the three service models. It enables complex, multi-site/cloud deployments with value-added services such as MPLS and MNS, and combines cloud

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## The Legacy Proposal



Virtual Private Cloud (VPC) offerings and deployment environments complicate design, sales and fulfillment processes.

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services with an enterprise infrastructure.

The many advantages of VPC offerings make them increasingly popular, yet they are the most challenging and complicated in terms of design, sales and fulfillment processes. For example, how will service providers design these complex deployments when demand is high but available expertise is limited? How will accuracy of the solution design be assured in the face of statistics that show as many as 40 percent of MPLS proposals cannot be provisioned as sold? How will providers overcome a lengthy time-to-market when competitors are gaining market share?

Most importantly, how will the VPC solution lifecycle be managed to overcome these obstacles? There is often a lack of quick and precise communication between the sales and operations teams, and personnel are often unsure about how and when to optimally intervene in the lifecycle. As a result, using automation for end-to-end solution management is a critical success factor.

[insert Diagram 1 here, with this caption below the diagram: Virtual Private Cloud (VPC) offerings and deployment environments complicate design, sales and fulfillment processes.]

#### **Factors Driving VPC Offerings and How to Facilitate Deployment**

Service providers enjoy a host of advantages in developing and deploying VPC and other cloud service offerings. By their nature, VPC solutions establish long-term relationships between the service provider and customers. Additionally, VPC solutions often require multiple phases of

implementation. But while the service provider's CRM system can effectively handle complex and long-term business relationships, CRM systems do not have the automated knowledge base of design rules to support solution lifecycle management.

Among the many factors that are motivating service providers to offer VPC services include the following:

- **Customers** – Service providers already have established relationships with their customers, and VPC offerings provide an opportunity to extend their relationships by potentially lowering costs while providing a higher quality of services via shifting services to the cloud; additionally, there are increased opportunities to win new business.
- **Network** – The network is already in place, so providers now merely need to capitalize on their existing infrastructures and provide additional services that utilize that same infrastructure.
- **Operational Excellence** – Service providers are known for their operational excellence, so issues of performance, security and the effective bundling of services are already well known by decision-makers who participate in the sales cycle.
- **Credibility** – Because service providers already have established credibility with their customers with regard to implementing complex, multi tiered solutions such as MPLS and managed services, customers feel more secure in extending their relationships with the purchase of new services.

As a result, the cloud is a natural next step for services providers to gain new business through effective implementations that not only extend service offerings but also increase current customer satisfaction and strengthen business relationships. However, effective and efficient provisioning and deployment is another question altogether.

**An automated approach to solution management also lowers costs for personnel.**

Solution management within the VPC introduces complexity not only in the area of design, but also introduces challenges in linking sales and fulfilment processes. With automated processes that utilize a solution building-blocks repository and incorporate solution lifecycle management processes, service providers can gain important competitive advantages in time-to-market and deployment quality.

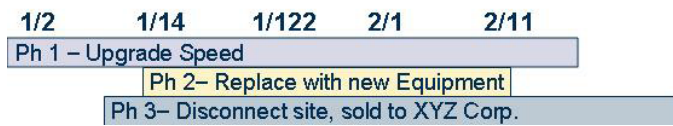
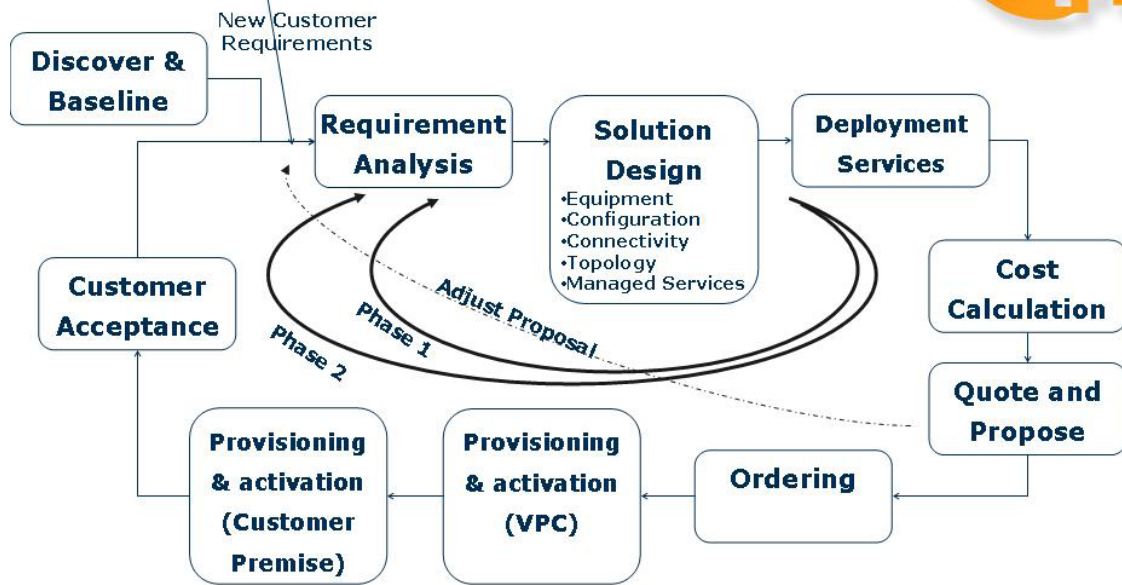
With complex VPC and other cloud service offerings, automation is the only route to effectively link operational support systems (OSS) and business support systems (BSS). Sales proposals

need to provide clear, accurate and unambiguous descriptions of functionality for every component in the offering. “Legacy proposals” that rely upon non-integrated spreadsheets and word documents are as effective as hand-drawn sketches in proposing VPC offerings – manually updating specifications within spreadsheets and word documents when hundreds of components are involved represents the equivalent of using pencils and erasers to adjust parameters.

[insert Diagram 2 here, with this caption below the diagram: Outdated, legacy proposals are not sufficient in the era of cloud services.]

[Insert Diagram 3 here, with this caption below the diagram: In order to deal with the complex networks of today an automated design that can be easily updated for future growth is required.]

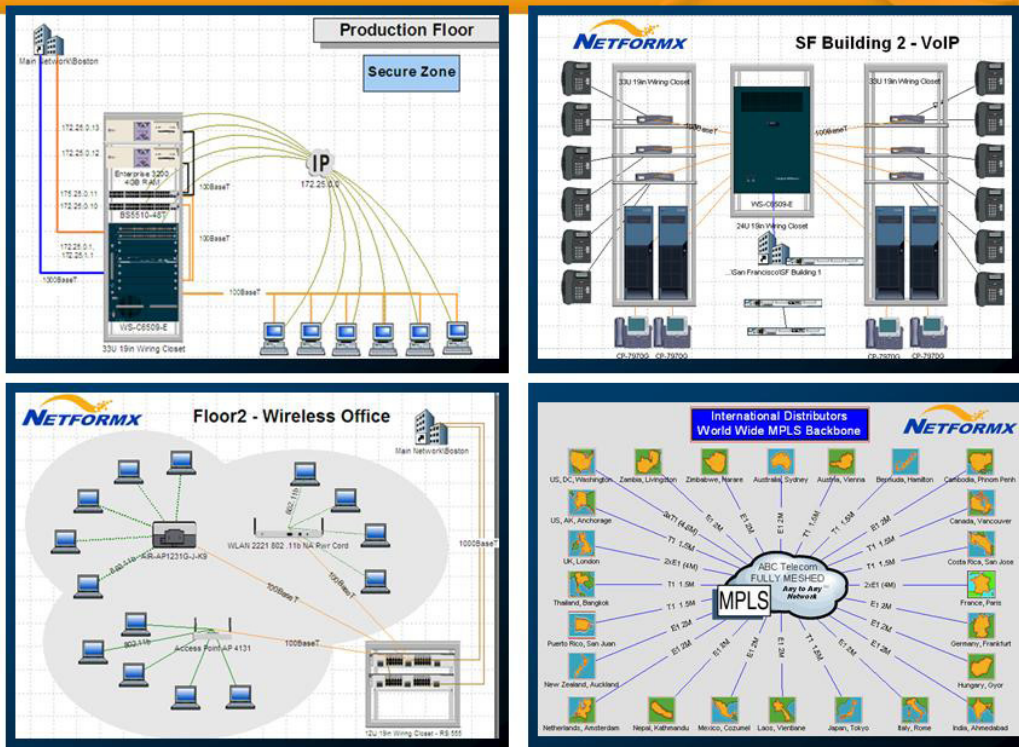
**VPC Tailored Solution Lifecycle** 15



*Outdated, legacy proposals are not sufficient in the era of cloud services*



# Automated Network Design



In order to deal with the complex networks of today an automated design that can be easily updated for future growth is required.

By using an automated, structured and rules-based approach for capturing design information, service providers can benefit from a “one-click” analysis that highlights errors for missing information or conflicting definitions. With an automated solution, flags for non-standard components in the design can be immediately highlighted. Any approach for automating the solution management process should include the following:

- Design diagrams should be automatically generated, and they should provide a diagrammatic description of the solution and network topology.
- A bill of materials report should provide a list of CPE standard and non-standard elements included in the solution, while addressing both new and existing equipment.

- A design summary report should describe the highlights of the solution.
- A detailed design document should provide an internal technical document that describes the solution details.
- A customer design document should provide a customer-facing presentation that illustrates the final list of services to be sold to the customer along with a diagram of the proposed solution.

The benefits of this automated approach include streamlining design, sales and fulfilment processes as well as accelerating the introduction of lower-cost, higher-quality solutions for customers.

Additionally, the benefits of automated solution management in the VPC and other cloud environments include shortened time-to-market,

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increased efficiencies and improved profitability. A shorter sales cycle allows faster deployment of larger, more complex, next-generation solutions and services. Quick re-designs are possible because staff can begin the process from a known and documented “as built” state.

Automation results in the enforcement of design rules that enable current products and pricing to be presented to the customer with 99 percent accuracy for a deployable solution design. The designed system is also better positioned for the successful provisioning of add-on services. Additionally, using an automated approach to solution management lowers costs for personnel because staff with less technical expertise can be utilized to achieve outstanding results.

In a recent study that compared Tier 1 communications service providers in North America using manual and automated processes, statistics reveal the advantage of applying automation to service design, sales and deployment processes. The “manual” sample in the study included 88 service bids while the “automated” sample included 128 service bids.

The results show that the average design time, including customer changes, was 48.75 hours using manual processes and 27.00 hours using automated processes, a large advantage for providers using automated processes. Additionally, the average time to make a design change was 9.0 hours using manual processes versus 3.5 hours using automated processes, another significant advantage. Results such as these are illustrative of the exceptional value that automation can bring to the design, sales and provision of cloud services.