Solution Overview

Customer Profile:

The customer is the second largest wireless company in the U.S with 2001 annual revenue (pro forma) of more than $14.3 billion. The customer is bringing next-generation wireless data products to customers nationwide through its networks, serving more than 22 million voice and data cus tomers across the United States, and is dedicated to excellent, personalized and customer friendly service.

Challenge

The customer required an interface between its network inventory and provisioning system and the networks to facilitate fast and error-free provisioning. Automation between these applications and the network guarantees precise and accurate information that can also be used for service management and network planning.

Integrating networks and OSSs is a highly specialized skill. In-house development capacity could not meet the time requirements for the delivery of the interface, leading The customer to look for external solutions. Vertel is a dedicated solution provider for this market, and was chosen because of its vast knowledge and experience developing network management using Q3 interfaces, its competitive pricing and professional project management methodology (3PM).

Solution

Vertel developed the interface using the Vertel integration and development platform M*Ware. M*Ware is a complete product line of pre-built and customizable components and solutions developed to make network and system integration easily maintainable and highly re-usable. The solution provides a configurable interface that can easily be modified by the user, it accommodates flexible mapping and model definition changes, vital for fast turnaround during product and configuration upgrades.
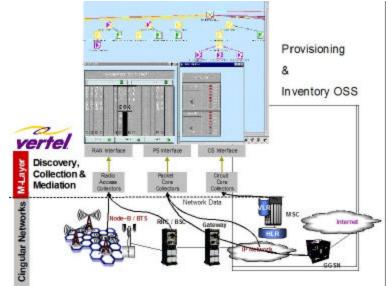
Benefits

The customer eliminated the high cost of building an appropriate development environment and approximately seven months of development time that would have been required for their in-house developers to manage the Q3 standards and implementation of features such as automated discovery service and object translation.

The automated network discovery eliminated the ongoing manual effort of data loading and saved substantial resources and time.

Vertel was able to develop the interface within both the customer budget and delivery timeframes.

WIRELESS

Network Inventory & Provisioning Interface

Figure 1: Complex networks integrated with convergent Inventory & Provisioning OSS

The solution was developed in C++ on a Solaris platform using Vertel's M*Ware platform, which increases the efficiency of developers with 30 % or more. It is completely based on off-the shelf components, compliant with TMN standards and does not depend on vendor-specific features. It provides a flexible command-mapping feature that, in most cases, allows changes to provisioning and inventory commands without affecting the interface.

The interface components include *topology*, *connectivity*, *equipment profiles* and *various inventory* objects.

The solution uses a layered architecture to provide flexibility and to enable loose coupling of mediation interfaces. Horizontal partitioning of the solution in various orthogonal components and the layered architecture guarantee that incremental extension of the interface can be performed without substantial effort.

Figure 2 shows the high level architecture of M*Ware. On the left are the interfaces with other systems and information. Protocol adapters enable easy interfacing, automatically generated database schema enable easy database integration, and compilers are provided to import existing GDMO and UML information models.
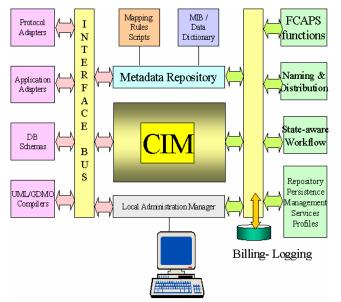
Figure 2: Vertel M*Ware Architecture

In the center of the figure are the basic features of M*Ware. All information is mapped on the Common Information model, defined by DMTF supporting the widest range of IT and telecommunication objects. Mediation logic is captured in rules, scripts or code. Every component is reachable by the administrator for easy reconfiguration.

On the right are the services that can be called by M*Ware management and mediation applications. Services are available to support FCAPS, distribution, workflow etc.

In this case, the Network Inventory and Provisioning system use the Vertel M*Ware to discover and provision the network. Any changes to the network topology and connectivity are also communicated to the Network Inventory and Provisioning system.

The problems associated with overlapping applications domains are overcome by the use of M*Ware. Because of the standardized model inside M*Ware, the network data can easily be re-used by other application by adding an adapter and the necessary services.

M*Ware is built according to NG-OSS architectural guidelines, which makes integration with other NG-OSS applications extra easy. The dynamically changeable logic ensures highest availability and business flexibility while the distributed architecture takes care the solution is as scalable and performant as required.

Solution Highlights

- Interfacing between the inventory OSS, provisioning OSS and the networks enables rapid, error-free and very cost efficient provisioning
- Automated discovery ensures highest data reliability and consistency
- Flexible and data-driven mapping provides high business flexibility and a short time to Market
- The solution is build using a Common Information Model to allow easy re-use for other applications
- The component based solution enables development efficiency and rapid delivery and implementation. It also solves every scalability and performance requirement.

- The Vertel solution provides network data mediation plus network discovery, subscriber provisioning and equipment configuration management functions.
- M*Ware solutions are based on the ITU and other relevant standards.

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About Vertel

Vertel is a leading provider of convergent service management mediation solutions.

Since 1995, Vertel has provided network management, mediation and integration solutions to both telecom infrastructure vendors and service providers such as Alcatel, Nokia, Motorola, Lucent, Nortel, NTT, Samsung, AT&T, BT, Deutsche Telekom, Cingular and Williams Communications.

Vertel's in-depth knowledge and commitment to industry standards, combined with experience of working with many different equipment types, creates high performance solutions that enable customers to quickly cross technological barriers. Vertel's mission is to make its customers successful by enabling them to reduce operational costs and introduce new services, networks and OSSs while leveraging existing investments.

Vertel's core product offering, M*Ware, allows seamless management in multi-technology and multi-vendor environments. M*Ware offers a full suite of mediation based applications that can address protocol translation, data transformation, element and network management, OSS application integration, and OSS exchange services. M*Ware components are highly scalable and are very suited for mission critical operational environments. Vertel's Professional Services organization develops customized communications software solutions tailored to individual customer requirements, and also offers project management, systems analysis and other technical services

Vertel is based in Woodland Hills and has sales offices throughout the world.

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