

Nationwide Wireless ISP – Detailed Case Study

Background

The customer is a national level ISP in India. At time of publishing, the customer had become the world's largest WLAN & fixed wireless WISP/ISP deployment. The customer's access network utilizes thousands of base stations & access points deployed across dozens of target cities.

Services Offerings

The customer provides Internet access and associated value added services to the residential, SOHO & SMB markets as an alternative to traditional wire-line broadband. There is also a strong emphasis on value added services (VAS) for target verticals.

Quick facts:

- Millions of subscribers targeted in dozens of cities.
- Network caters to retail, SMB & public hotspot customers.
- Metered (volume & time) broadband sold under pre-pay and post-pay service plans.
- Boutique *managed services* for small business in specific industries e.g. hospitality, SOHO, etc.

Inventum Solutions Used

1. **UNIFY SMP** – carrier class OSS/BSS addressing everything from subscriber sign-up, usage metering to pre-paid rating & charging.
2. **MSC Service Controllers** – carrier grade, subscriber identity contextual traffic aggregation & management appliances. MSCs form the backbone of the network handling routing, per subscriber QoS, traffic shaping, lawful tracking and more.
3. **NSC Connection Configuration & Dialer Application** – customizable dialer for easing subscriber acquisition using 802.1x and enforcing network admission policies.

Customer Requirements

OSS & BSS related:

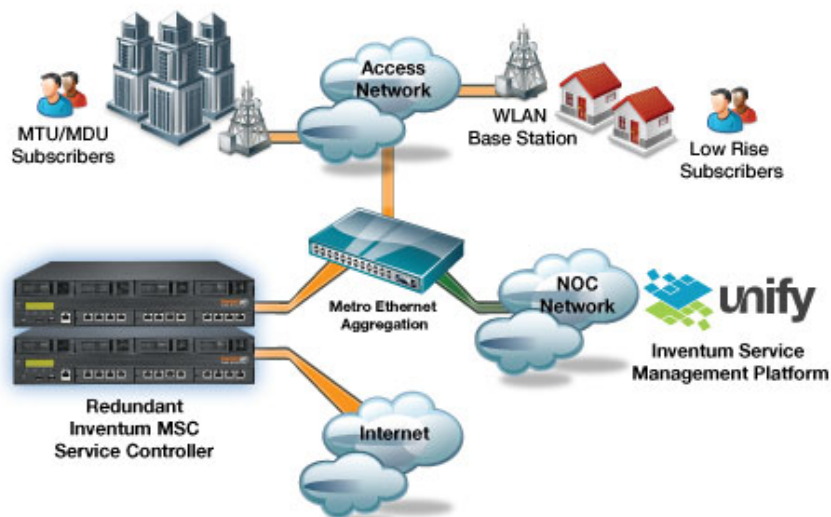
1. Comprehensive OSS for entire network, from acquiring subscribers to provisioning & managing services.
2. Rating & Charging for Pre-Pay & Advance-Pay broadband services.

3. Per subscriber traffic metering system for volume & time quota based service offerings.
4. Subscriber dialer & configuration tool for enabling secure WLAN access using 802.1x/WPA2 at a massive scale, well beyond the enterprise type of application.

Access Network Related:

1. Authenticate, control and meter every subscriber session.
2. Ensure QoS per subscriber to the best extent possible both at edge and aggregation.
3. Support distributed network architecture with many *micro POP* locations supporting individual neighborhoods and small backhaul.

The Inventum Solution



Diagrammatic representation of customer deployment

Inventum proposed a three-part solution that addressed end-to-end objectives of the customer.

1. **UNIFY Service Management Platform**
 - a. Key Modules & Functionality
 - i. RADIUS (AAA)
 - ii. LDAP integration
 - iii. Subscriber Management System
 - iv. Pre-Pay Rating & Charging Engine
 - v. Subscriber Portal System
 - vi. Mediation
2. **MSC-3000 & 2200 Series Service Controllers**
 - a. Key Modules & Functionality
 - i. Routing & Bridging
 - ii. Session aggregation & management

- iii. Multi-mode authentication including portal logon
 - iv. Per subscriber policy enforcement – CIR/BIR
 - v. Session volume (bytes) and duration (time) metering for CDR generation
 - vi. Bandwidth management
 - vii. Multiple WAN link load balance
3. **NSC Connection Configuration & Dialer Application for Subscribers**
- a. Key modules & functionality
 - i. Auto configuration of WLAN/802.1x parameters
 - ii. Optimize selection of wireless signal
 - iii. Provides login/logout function to subscriber
 - iv. Integrated self-care features
 - v. Enforce network use policy, particularly protecting upstream bandwidth from rogue applications

The solution has been deployed in early 2009 and has achieved all its intended objectives as set out in the customer’s vision.

Some sample broadband access services deployed by the customer:

- 2 Mbps 5GB Circuit Breaker Monthly Plan – subscriber gets 2Mbps line speed with a monthly download cap of 5Gbytes. As the customer reaches the cap, the subscriber will be required to *re-charge* their account.
- 1Mbps daytime/2Mbps nighttime Unlimited Monthly Plan – subscriber gets 1Mbps line speed between 6am & 9pm. This speed is doubled to 2Mbps from 9pm to 6am. Plan is billed on monthly basis.
- 1 Hour Cafe Public Hotspot Plan – subscriber purchases 1 hour of usage to be consumed within 24 hours of purchase/first-use.

It is important to not that all these plans are enabled out-of-the-box using the UNIFY & MSC. Subscriber service provisioning, in-session upgrades, downgrades and disconnections upon balance exhaustion are completely automated.

For Greenfield operators, it may be interesting to note that the customer has not deployed any B-RAS or other aggregation platform.

Conclusion

Combined solutions from Inventum were able to deliver the entire rollout of services with ease. The UNIFY SMP and MSC Service Controllers when deployed together offer a unique marriage of business policies and network control, creating a seamless end-to-end platform to deploy, manage & bill broadband services.