

The future-proof solution for Cable Operators

Background

Many CATV operators today are evaluating their infrastructure, both in the short and long term. A common scenario is to have parallel access infrastructures, for example cable networks using DOCSIS standards (with on-going transition to DOCSIS 3.0) and Fiber-To-The-Home (FTTH). In an operational perspective it is costly to manage parallel infrastructures differently and it is a challenge to adapt old legacy systems to manage new infrastructure like FTTH, because of high risk, high cost and sometimes is the product in an End-Of-Life status.

Solution

First of all, if you are running parallel infrastructures you will need a system that is designed to fit such scenario. You will also need a clear view of the cost of adaption for both infrastructures. This is where NETadmin is a perfect match.

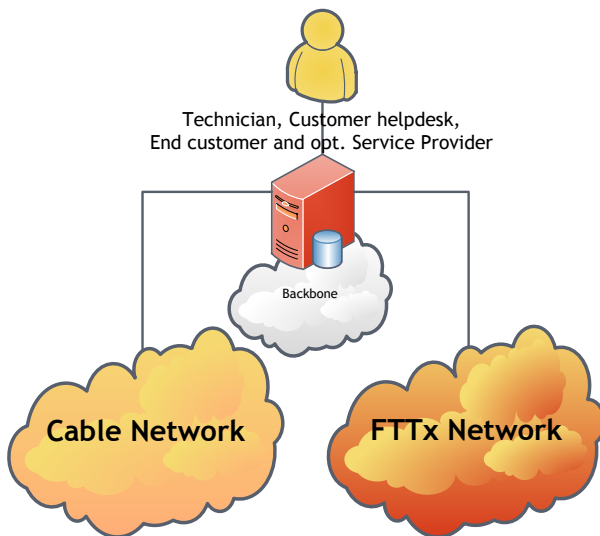


Figure 1. High level overview of multiple access technologies management

NETadmin has been used to manage parallel infrastructures in production environment since 1998 with access technologies as Cable, Fiber xPON, Fiber Point-to-Point, xDSL and wireless. With the module approach and Rapid Product Implementation (RPI) it is possible to have a cost effective, controllable and fast deployment of the NETadmin system.

The main benefits with NETadmin in this context are:

- *An end-to-end umbrella system* that is agnostic to access technology, vendors and business model.
- *No limitation to only EMS or NMS functionality* because NETadmin includes OSS, BSS, NMS and EMS functionality in one seamless integrated product.
- *Ready COTS modules* for e.g. Cisco, Motorola and Arris Cable environments as well as modules for FTTH environments with vendors like Alcatel-Lucent, Cisco and Ericsson.
- *NETadmin enables a smooth transition* to the new infrastructure with tools for campaigns on the end customer portal, service bundles and easy auto-provisioning from DOCSIS to FTTH in the same GUI or API.

Business models

The NETadmin solution gives the CATV operator the freedom to choose business model. The CATV operator can choose to act as the only service provider, to become an open access network with multiple service provider or a hybrid, e.g. to have an IP telephony service provider and be the only service provider for TV and broadband.

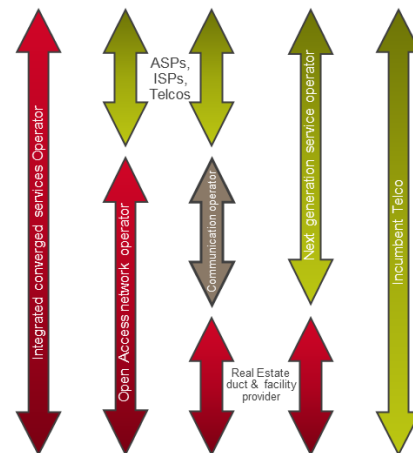


Figure 2. Different scenarios of business model in an Open Access context

Figure 2 shows the different scenarios that must be managed by an OSS/BSS system and NETadmin can be used for all these scenarios.

Functionality

NETadmin can manage CATV networks in terms of service fulfillment (provisioning), documentation of devices, service assurance (monitoring) and service support (ticketing, real time data from core and distribution network, CMTS and Cable Modems). NETadmin handles the network with end-to-end support in terms of network and service life-cycle.

NETadmin covers the following functionality in the eTOM (TM Forum) model:

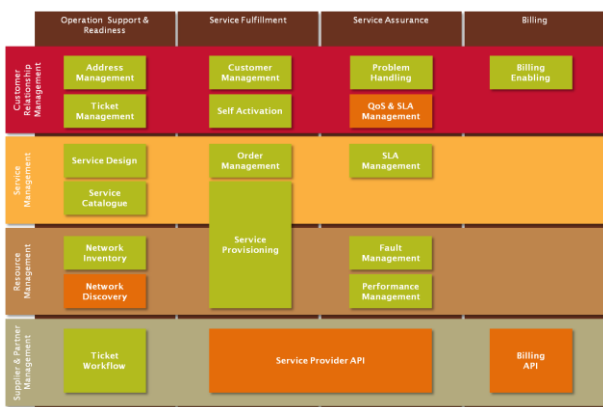


Figure 3. NETadmin's functionality in eTOM

Support for CMTS, DHCP, TFTP and modems (NETadmin Drivers) have to be added to NETadmin. This is done either by an implementation project or by using existing NETadmin modules that are loaded into the system.

There is also often a need of integrating with CRM and billing systems and this is done using the NETadmin XML/Web Services API (called 'NWL').

A standard solution for management of DOCSIS networks consists of the following functionality:

- ✓ **Service Provisioning**
 - ✓ with DHCP database backend mainly for MAC register
 - ✓ Configuration File Management with modem drivers (for SIP)
 - ✓ Provisioning of DHCP server with service and modem MAC (username and password for VoIP (SIP) service)
 - ✓ (Optional provisioning of CMTS)

Monitoring & Problem handling

- ✓ Performance management: Graphs of Signal-Noise Ratio, Micro Reflections, Fault Error Corrections (FEC), Eth Traffic, RX/TX Power

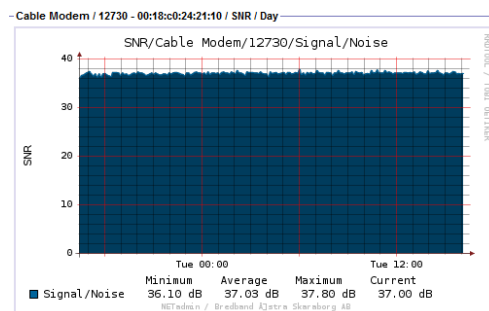


Figure 4. Example of a graph available for troubleshooting of a service

- ✓ Fault management: ICMP PING
- ✓ Problem handling: Modem status
- ✓ **Modem management**
 - ✓ Firmware upgrades
 - ✓ Bulk and individual service upgrades
 - ✓ Configuration backup, restore and regeneration
- ✓ **Reports**
 - ✓ Billing items (price and items)
 - ✓ Usage reports / Volume consumption ("top ten")
 - ✓ Firmware and modem types
 - ✓ List of customer, subscription and modem MAC
 - ✓ Number of customers per service Used for capacity management
 - ✓ Customer Bad signal ("top ten") with site information

Customer References

NETadmin has historically been developed with input from approximately 20 CATV operators in Europe. There are several examples of customers with parallel access infrastructures that are running NETadmin today. Please ask for references.