



SESSION 16: BENEFITS OF MOBILE WORKFORCE AUTOMATION

Evolving the Broadband Service-Based Operations Paradigm Using Workforce Automation

Today, the cable industry continues to see increasing competition for revenue dollars and will continue to for years to come. Rivals for new and continued subscribership include DBS (satellite providers), telephone companies (DSL and telephone), fixed wireless providers and third party content providers that will deliver services such as Internet Access (ISP), IP telephony, streaming video, and more. In order to continue to compete, service-based cable organizations must maximize the use of existing capital expenditures. One such solution is to decentralize all service-related information through web-based automation systems, and to allow for mobile access to this information.

Push technology has historically been the accepted method of service-based companies for getting information into the field. Traditionally, only office personnel have had access to software system data such as billing, provisioning and NMS. Dispatchers use radios to inform technicians of locations that need service and to provide information about the status of service-affecting elements. Push technology is now evolving into web-automated pull technology, which produces numerous benefits, most importantly the decentralization of information that is imperative to improving operational efficiencies, such as the following:

- CSRs can reduce unnecessary truck rolls by correlating service issues with stored human resource information to correct a problem the first time.
- Field technicians using web enabled devices (PDAs, cell phones, etc.) loaded with FSA (field service applications) can pull information such as service procedures, network status and topology directly from various software platforms, significantly reducing the time it takes to service a location.
- Birth certificate information created at the time of installation (such as RF levels and optical parameters) can be stored and correlated with other sources to help determine appropriate field staff for resolution of problems.
- Value-added services can be provided to subscribers, such as the ability to register new services via the web and the capacity to perform simple diagnostic routines when a problem occurs.

To have the ability to improve efficiencies with software-powered broadband solutions that can provide web-based, real-time information for a service-based company is vital in today's rapid-paced, technology-driven cable industry. For example, routines that automate the testing of standby power supplies significantly reduces the number of times a power supply location must be visited, saving valuable dollars and freeing technical staff for other duties. In a single 100,000 subscriber system, this routine can produce savings of as much as \$60,000 annually.

In crisis situations where severe weather has caused power problems, understanding exactly when to roll a truck and having the ability to prioritize potential "roll to" locations will increase system availability and reduce the cost of unnecessary truck rolls. Using common root cause analysis software, along with system topology information, to determine the approximate location of a fault reduces the mean time to repair, saving valuable time, especially when weather related problems cause many simultaneous outages.

Software that drives web-based applications must not only be used to streamline efficiencies through workforce management, but must also have an impact on back-door processes that deliver return on investment (ROI). The big question is, "How do we increase productivity without increasing indirect costs, or, where possible, while decreasing them?" In order to grow a service-based organization, companies must strive to improve efficiencies through automation of basic rudimentary functions.

For some time, the cable industry has tried to introduce systems that will fulfill the need for workforce management. All aspects of workforce management must be automated to improve efficiencies. Attempts to

harness these processes in order to improve efficiencies have met with little success; processes and systems were developed, but with minimal information exchanged with headend or primary systems.

The introduction of software that can automatically route, dispatch and re-deploy a mobile workforce in real time is the first step. The next step will be to integrate with systems that affect network performance.

- Utilizing wireless technology, we gain the ability to redeploy our workforce to accommodate the constant changes in workload, thereby better meeting scheduled completion times.
- This automation provides the ability to update, reschedule and close through work order functions.
- Technology that updates disposition coding and customer equipment and asset transferring, as well as updates subscriber account billing information, reduces lost revenue due to data entry errors.
- The software also provides direct correlation between disposition coding and billing coding for a contractor-based work force. (This eliminates erroneous over-billing and decreases indirect labor costs for invoice processing.)

With improved wireless technology, the first step of the continuum has been achieved through automation. Moving along the continuum of change for the mobile workforce, we must consider quality assurance:

- The same technology that is updating work order information in real time will also be used to deploy the QA work force.
- Utilization of GPS will assist the optimization of the quality assurance workforce.
- Wireless communication will be used to transmit vital statistics for real-time quality assurance, thus reducing multiple visits and increasing subscriber satisfaction.
- Web-based training for a mobile workforce will also improve quality of work.

Quality assurance is a vital step in network performance and stability; information can be obtained at the smallest points along a system and have a major impact on performance. Taking system readings that can be transmitted in real-time data and monitored is part of the overall information that can be obtained. Through the use of wireless technology, visual data can also be transmitted in real time. "A picture is worth a thousand words." To have quality performance performed the day of installation would be the ultimate goal of most systems, and to have the GPS technology dispatch that QA technician and provide data and visual information in real time is key to the performance of the network. Installing digital equipment and cable modems properly can now increase the performance of any network.

If a QC technician can be dispatched now and achieve this type of information, what does the future hold? The same installation workforce could automatically transmit the same type of data and virtually be the eyes and "ears" of the system.

The back-door processes are directly automated and driven from real-time information, and provide numerous benefits:

- With GPS tracking, GIS technology and wireless technology we gain improved communications with the mobile workforce.
- Through the use of software, human and non-human resource utilization can be maximized.
- Automation of work order management has now eliminated tedious data entry functions and allowed for easy access to historical information.
- Using information gathered from ingress management systems along with information from CPE devices, failures can now be predicted, increasing the ability to avert downtime.
- The evolution of work order functions have now been captured in one location. We now have date- and time-stamped information on technicians, disposition coding, customer equipment and asset transferring, billing code information, and, finally, quality assurance information in real time.

The ultimate goal of any service-based company is to provide quality service. Through the use of software-powered broadband solutions that can provide web-based, real-time information, this goal can be achieved. However, the migration to automated solutions is not without its challenges. Proprietary interfaces to software systems have been a complex undertaking, remaining costly to implement, and security issues will need considerable attention. While legacy issues will be present for some time, the evolution of standards will help to reduce implementation costs.

As the cable industry continues to experience pressure from competing service providers, the need for a comprehensive, automated data solution has become a high priority. Workforce management, work order management, back-door and reporting functions, and quality assurance are all important components in the automation of web-based solutions. The optimization of these processes allows for operational efficiency without sacrificing quality, supports the workforce and, ultimately, delivers ROI.

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