

## Optimize Your Problem Management Process

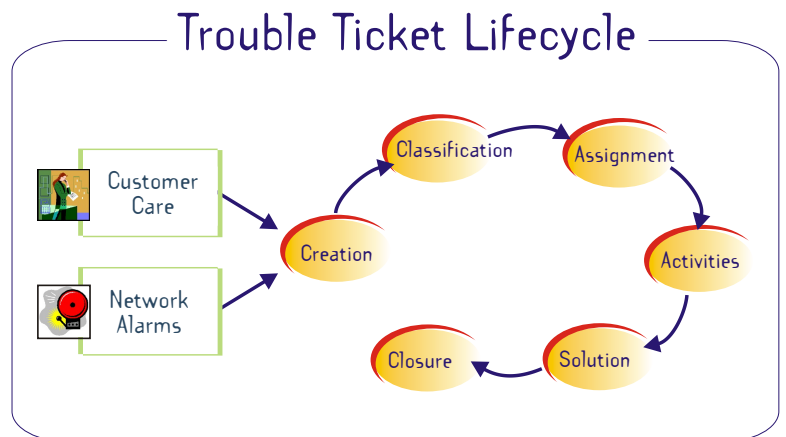
**Broadview Networks Turned to NeTkT, TTI Telecom's Trouble Ticket Module, to Maximize the Efficiency of their Problem Resolution Cycle**

Broadview Networks is a facilities-based, electronically integrated telecommunications service provider, serving business and residential customers in the United States. The New York City based company offers integrated communications solutions, including local telephone service, long-distance telephone service, and high-speed data services using digital subscriber line (DSL) and other broadband technologies.

In its continuing efforts to heighten customer satisfaction, reduce operating costs, and shorten repair times, Broadview Networks sought an off-the-shelf, yet customizable, trouble ticketing system. Broadview Networks was looking for a system optimized for handling both network and customer reported troubles - with the ability to correlate between the two. In addition, Broadview Networks needed a system that would seamlessly integrate with key Operational Support Systems (OSS) and, most importantly, with OpenNet - Broadview Networks' world-class proprietary Enterprise Management system.

Finally, Broadview Networks was after a system that offered advanced logging, searching and reporting mechanisms for quick access to ticket data and trouble history.

Following an extensive assessment of trouble ticketing solutions, Broadview Networks chose to go with TTI Telecom's Netrac Trouble Ticket module (NeTkT) - a member of TTI Telecom's Netrac suite of fully integrated Fault, Performance, Configuration, Provisioning, and Service Management products.



NeTkT is a comprehensive solution that manages each stage of the Trouble Ticket's lifecycle

## Why NeTKT?

"We evaluated numerous trouble ticket applications before selecting TTI's NeTKT. NeTKT stood out on all grounds: functionality, value, scalability, and cost. With what we saw in NeTKT, coupled with TTI's proven track record - we knew we had a winner," said Stephen Farkouh, Vice President of Network Management Systems Architecture & Development at Broadview.

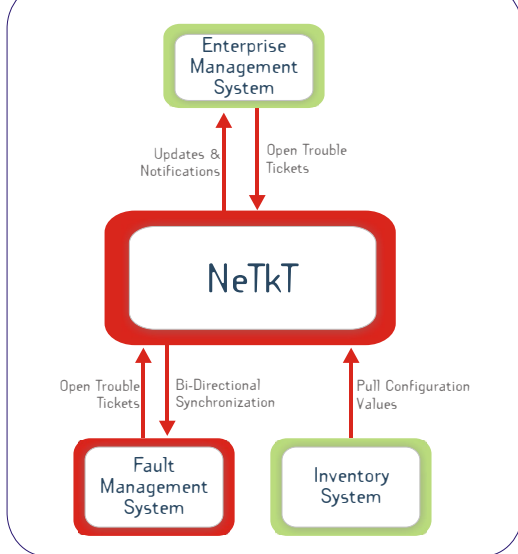
"Within a few short months, NeTKT was fully operational. Now, a year later, we enjoy the benefits of a fully integrated trouble ticket solution, customized to meet our business needs, integrated with our Fault Management, Customer Care, Loop Testing, and Network Inventory systems, and serving the needs of hundreds of Broadview users across over 15 work groups."

Broadview Networks then conducted extensive testing and analysis of NeTKT, providing TTI Telecom with the specifications needed to customize NeTKT to meet its exact business needs.

In April 2001, the second version of NeTKT was deployed at Broadview Networks. This version included customized rules, reports and graphical displays that were geared to reduce mean-time-to-repair, eliminate error-prone manual processes, and maximize work force efficiency.

"We broke several trends here," said John Carr, Broadview's Vice President of Network Services. "The use of a single trouble ticket system where most other service providers use two or more was the first major trend we broke. The implementation of full two-way APIs to Alarm Surveillance and Customer Care systems for flow-through network reported and customer reported trouble ticketing is another."

### NeTKT's Place within Broadview Networks



## ... And the Efforts Paid Off

The successful installation and integration of NeTKT was a mutual effort undertaken by both Broadview Networks and TTI Telecom... and the effort paid off.

## Why?

### Customization:

TTI Telecom custom-tailored NeTKT to specifically suit the needs of Broadview Networks.

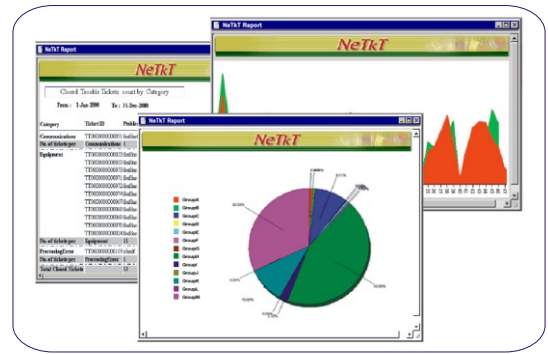
- **Automatic Relationships between Tickets** - NeTKT identifies and correlates trouble tickets, based on any combination of ticket field values (e.g. telephone number, circuit ID, or network element resource). NeTKT utilizes alarm information from Netrac, topology information from Network Inventory, and self managed time stamps to appropriately relate tickets, both in a parent-child and peer-to-peer manner.

"By auto relating incoming tickets and relying on trouble history, we get a total customer perspective. In the end, this translates to fast repair times and satisfied customers," said Carr.

## Customization & Integration - The Winning Combination

TTI Telecom's NeTKT module is implemented on top of the widely used and tested Remedy ARS platform. NeTKT is both scalable and flexible and can seamlessly integrate with other applications and systems to efficiently handle trouble tickets originating from both the network and Customer Care systems. In August 2000, TTI Telecom implemented the first version of NeTKT at Broadview Networks' Network Operation Center (NOC).

- Notification and Escalation** - This mechanism enables escalation of unresolved problems and the sending of notifications to the appropriate personnel to ensure that problems are quickly attended to and resolved. This mechanism operates according to user-defined rules or time driven conditions.
- Rules-Based Logic** - Enables Broadview Networks to easily and systematically modify/add/delete field population logic, trouble ticket routing logic, and trouble ticket evaluation and analysis rules.



NeTKT provides multiple graphical displays

"We've applied hundreds of rules in NeTKT, including rules that automate the flow of tickets from group to group and the population of fields. These rules ensure consistency in the way we handle tickets and drive human errors associated with manual operations out of the equation," said Farkouh.

- Open APIs** - NeTKT is fully integrated with Broadview Networks' NMS and OSS applications, including Customer Care, Inventory, Surveillance, and Test systems.

- Web Access and Control** - Broadview Networks personnel can access and operate NeTKT via a secure Java-enabled web browser, as well as perform the same functions via the standard NeTKT GUI.

## Integration:

NeTKT is part of TTI Telecom's Netrac Fault Management family of products and is tightly integrated with Netrac's Fault Management product (FaM), which Broadview Networks used prior to purchasing NeTKT. Using NeTKT's published C++ API, Broadview Networks integrated NeTKT with OPENnet - Broadview Networks' proprietary Enterprise Management system, supporting functions such as Ordering, Billing, and Customer Care. In addition, Broadview Networks teamed with TTI Telecom to integrate NeTKT with Broadview Networks' Inventory and Loop Testing systems.

NeTKT's integration with Netrac's FaM enables operators to automatically or manually create new alarm-based tickets or append alarms to existing tickets by simply highlighting an alarm on FaM's Active Alarms screen and clicking the appropriate icon. All the relevant alarm fields and status changes are automatically mapped to corresponding ticket fields, based on user settings. After the trouble ticket is created, NeTKT updates FaM with the trouble ticket's ID and real-time ticket status changes.



**Kenneth Shulman**  
Chief Technology Officer / Broadview Networks

"Our technicians already use TTI's Netrac Fault Management system. Coupled with NeTKT and our electronically linked OPENnet system, they have all the tools they need to rapidly pinpoint and respond to network and customer reported troubles in real time," said Kenneth Shulman, Chief Technology Officer at Broadview Networks. "NeTKT gives our network and Customer Care staffs critical new tools to quickly and accurately follow, fix and keep customers informed about network service issues."

- Reporting** - In addition to NeTKT's standard reports, NeTKT also generates numerous customized reports used by Broadview Networks to track company performance in handling network troubles, identify opportunities and trends, and improve efficiency.



**Eric G. Roden**  
Chief Operating Officer / Broadview Networks

"A key part of improving performance is being able to measure it," said Eric G. Roden, Chief Operating Officer at Broadview Networks. "With NeTKT, we have the data we need to assess how well we're doing and proactively drive operational improvements."

A Trouble Ticket generated by Netrac's Fault Management Module (FaM)

"NeTkt's seamless integration with TTI's Netrac affords us an operations environment where users that monitor alarms via Netrac can see corresponding ticket status without ever leaving Netrac," said Farkouh. "Similarly, users that work on tickets using NeTkt can see alarm status changes (e.g. new alarms or cleared troubles) without ever leaving NeTkt. This reduces the number of systems our NOC technicians and repair technicians need in order to do their job," concluded Farkouh.

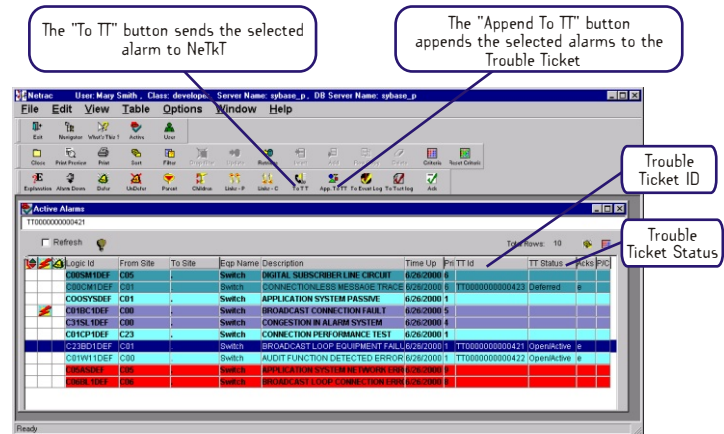
Integration with OPENnet enables Broadview Networks Customer Care representatives to open, modify and query trouble tickets that correspond to customers' problems, as well as receive ticket status information both automatically and on-demand. The integration between NeTkt and OPENnet helps surface the trouble status information required to keep both Broadview Networks' Customer Care representatives as well as customers themselves up-to-date on pertinent repair activities. The integration with Broadview Networks Inventory system enables Broadview Networks operators to quickly extract data, for example, the circuit layout record of a failed line - without ever leaving NeTkt.

With problem details and access to inventory readily available in the ticket itself, repair technicians have all the information they need to efficiently follow through with the trouble verification, sectionalization, isolation, and repair process. Note that this process often involves using loop and circuit testing tools, which can also be launched via NeTkt.

## Say No More

The benefits of Netrac's NeTkt are clear. NeTkt is a powerful and intelligent trouble ticket application that leverages TTI Telecom's years of experience in designing, integrating and manufacturing NMS, OSS and BSS management solutions. The NeTkt out-of-the-box application provides a rich set of features and easily supports project customization.

NeTkt has enabled Broadview Networks to facilitate, track and proactively control the problem resolution cycle, and constantly study and improve their problem management process, thereby assuring premium Quality of Service to their customers.



Netrac Fault Management Module's (FaM) Active Alarms Window

## About TTI Telecom:

TTI Telecom International Ltd. develops, markets and supports advanced, modular and integrated network management systems (NMS) operations support systems (OSS) and business support systems (BSS) for the telecommunications industry. The company's solutions, based on its Netrac family of products, enable telecommunications service providers to improve the quality of existing services, streamline their operations in order to compete cost-effectively, maximize the return on their investment in network infrastructure and offer new services over complex networks. The Company's products provide the entire range of management functionality, including Performance, Fault, Configuration, Provisioning, Accounting and Service Level Management for Wireline, Wireless, IP/Broadband, Access and SS7 networks. Its growing family of Netrac NMS/OSS/BSS products and solutions are used by over 70 telecommunications service providers worldwide.

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