



The WiMAX Transformation Challenge

Globally, customers are demanding high bandwidth services such as VoIP, streaming video, video conferencing, and content services — and they want them delivered to mobile devices. Communications Service Providers (CSPs) are turning to WiMAX technology to create the necessary wireless bandwidth infrastructure. To date, more than 350 WiMAX trials and deployments have been carried out worldwide.

High bandwidth wireless services — especially rich media content services — represent a major opportunity for CSPs to improve customer loyalty and increase the revenue that can be derived from each customer.

To deliver rich media services over WiMAX, CSPs need to transform their OSS. By transforming their operations environments into flexible, scalable, and agile engines, CSPs can accelerate the order-to-cash cycle and create the foundation for delivering and managing compelling new revenue-generating services.

The WiMAX Opportunity

WiMAX is a standards-based wireless technology that enables the delivery of last-mile broadband for high bandwidth applications. Compared to DSL and cable, WiMAX generates higher revenues with lower build-out costs. It provides increased data rates and significantly wider coverage — without requiring fixed-line investment. WiMAX offers a lower-entry point alternative to traditional mobile networks for data services, while still offering VoIP voice services.

CSPs face unprecedented pressure to develop and deploy innovative new services rapidly while simultaneously reducing operations costs. Content services represent a significant opportunity for CSPs to increase revenues and move up the value chain.

To monetize content services, CSPs need to transform their Service Layer — where OSS reside — in order to deliver increasingly sophisticated services to a multitude of devices. CSPs must deploy next-generation OSS to maximize the potential of their WiMAX network investment — providing increased revenues, reduced operations costs, and stronger customer relations.

The WiMAX Challenge

NetCracker has deployed its WiMAX solution at leading Tier 1 CSPs worldwide. From these deployments, NetCracker has developed a deep

understanding of the challenges that CSPs face implementing WiMAX — as well as proven techniques for overcoming them.

NetCracker has identified WiMAX deployment and service delivery challenges that CSPs must overcome:

- Planning WiMAX infrastructure to speed network deployment
- Managing capacity to optimize resource utilization
- Creating a service delivery infrastructure to deploy new services rapidly
- Improving service and customer experience to ensure customer loyalty

Only by addressing these challenges can CSPs fulfill the promise of WiMAX.

Infrastructure Planning

WiMAX network infrastructure planning and deployment, as well as ongoing resource inventory management and capacity planning, must be carried out rigorously to ensure effective solution design and efficient operations. This requires an OSS that has the flexibility to model and manage diverse WiMAX equipment — including the following — in a point-to-multipoint architecture:

- WiMAX base stations and antennas
- A multitude of end-user devices
- New device types and topologies
- Relationships between resources and services

Service Fulfillment

WiMAX will accelerate deployment of high bandwidth services into new customer and geographic markets. These services are complex to provision, assure, and manage because they involve multiple players (such as content providers, application providers, and roaming partners) in a services ecosystem.

Since WiMAX deployments generally coexist with 2, 2.5, and 3G, as well as WiFi and fixed networks, OSS must manage across all these domains from a single platform to provide end-to-end service fulfillment and service experience management.

Service Assurance

Today's customers are demanding and sophisticated — and will change CSPs when dissatisfied. In such a highly competitive market, a new technology like WiMAX must provide a positive customer experience. Quality assurance must be a priority from order entry and processing to the proactive analysis of how customers are impacted by network problems.

Service and network assurance requires an end-to-end view of customers and services across the complex services ecosystem. In addition, network faults must be correlated to affected services and customers in order to provide proactive, fast, and effective trouble detection and resolution.



“NetCracker’s OSS solution is a critical component of our network simplification and transformation project. The enhanced resource management and workflow capabilities have enabled us to accelerate service delivery and improve customer service through increased automation.”

Eddie VanCompernelle, Vice President IT Network Systems, **Sprint**

NetCracker’s WiMAX Solution

NetCracker Technology enables CSPs to deliver rapidly and manage effectively next-generation, converged services over WiMAX networks. NetCracker is the leader in managing and delivering transformation projects for Mobile, Fixed, Cable, and Integrated Communications Service Providers. It has the largest number of Tier 1 transformation deployments worldwide — including successful implementations at France Telecom group, Sprint, MTS, TELUS, and Telstra. Leveraging the knowledge gained from these high-profile deployments makes NetCracker a valuable partner in Service Provider initiatives.

NetCracker’s TOMS product suite enables CSPs to speed the deployment of new services and manage the entire customer experience. Its comprehensive suite of product modules provides flexibility and scalability and allows rapid and seamless integration with existing systems.

NetCracker’s solution is configured to meet the specific needs of WiMAX infrastructure deployments as well as service fulfillment and assurance. It addresses the unique requirements of multi-technology networks such as WiMAX, WiFi, IP, and 2, 2.5, and 3G networks. It simplifies deployment, fulfillment, and assurance by managing the services ecosystem end-to-end and by managing a diversity of networks, including IT, from a single platform.



“NetCracker’s ability to manage Network *Analyse the Future* and IT resources from a single platform, their highly successful OSS transformation projects, and their new focus on creating a services ecosystem have made them market leaders.”

Elisabeth Rainge, Director of Network Software, **IDC**

NetCracker’s WiMAX solution enables CSPs to meet scalability, infrastructure diversity, and offer management challenges. To support the diversity of services and infrastructure required by WiMAX and to realize the promise of high-quality, user-controlled services, CSPs must address fundamental fulfillment, assurance, and capacity planning issues. NetCracker’s WiMAX solution gives CSPs the tools they need.

- **Fulfillment:** The WiMAX Resource Inventory models physical and logical resources including base stations, radio link configurations, radio channels, and sector and serving area capacity. Because the resources and business processes are abstracted, NetCracker’s WiMAX solution can seamlessly and flexibly support other applications and solutions like cellular back-haul, broadband internet access, and fixed-mobile converged services.
- **NetCracker’s Service Order Management, Service Activation, and Service Inventory** offerings provide comprehensive service fulfillment capabilities, while Customer Order Management handles order entry and service order processing.
- **Assurance:** NetCracker’s Customer Service Quality Management and Service Problem Management map services to performance and fault management data,

provides an understanding of service dependencies, and delivers end-to-end assurance. This powerful correlation of networks and services provides fast and efficient trouble detection and resolution. The products capture QoS parameters for WiMAX service assurance and service quality management.

- **Capacity Planning:** NetCracker Network Planning & Design enables WiMAX capacity planning that incorporates the unique requirements of line-of-sight and smaller cell sites. It provides efficient WiMAX site selection, design, installation, and other lifecycle management processes. The NetCracker's Network Planning & Design, Resource Inventory, and Outside Plant offerings provide comprehensive infrastructure management.

To facilitate design and planning, NetCracker's rich graphical capabilities display WiMAX physical and logical objects on topographic and landscape maps using GIS integration.

NetCracker's solution addresses all CSP WiMAX challenges: designing and planning the deployment of new infrastructure, enabling the delivery of content- and application-based services, supporting service quality assurance, and integrating with existing OSS applications.



“NetCracker has a rare combination of good technology, product features and services capabilities. It provides a complete suite of fulfillment software and extensive professional services to complement its product offering.”

Larry Goldman, Co-Founder and Senior Analyst, **OSS Observer**

Benefits

Today's communications world is highly complex, demanding the rapid delivery of custom services over a wide range of Network and IT infrastructures. NetCracker brings order to this complexity through flexible and powerful software solutions, combined with industry-specific expertise and professional services in areas such as process automation, data migration, and OSS consolidation.

NetCracker's innovative solutions transform the Service Layer by linking customer services with the Network Layer. The result is faster service delivery at reduced cost, the ability to provide any service over any network, and increased customer satisfaction.

For CSPs who need to meet the demand for high bandwidth wireless services, NetCracker's WiMAX solution provides:

- Comprehensive network design and planning to expedite WiMAX infrastructure deployment
- End-to-end service fulfillment to ensure rapid service delivery
- Service quality management to ensure customer loyalty and a positive service experience

NetCracker's ability to transform the Service Layer and manage Networks and IT from a single platform allows Service Providers to speed the delivery of complex new services. Using NetCracker's flexible and scalable solutions, leading Service Providers around the world have achieved rapid service delivery, created closer customer relationships, streamlined operations, and reduced service delivery costs.

Global Leader in Business Transformations

Proven operations solutions:

- Largest number of business transformations
- Best record for successful implementations
- Broadest, most innovative product set
- Single platform to manage Network and IT
- Unmatched products, services, and expertise

Unsurpassed innovation in fulfillment and provisioning