sentitO Networks offers open and distributed Voice over IP (VoIP) switching and service delivery solutions that help telecommunications service providers worldwide successfully migrate their networks to deliver VoIP services. sentitO has fundamentally redesigned the time-to-profitability for VoIP service providers using breakthrough software, silicon, security, and service intelligence innovations that eliminate the limitations of current softswitch solutions. The Open Network Xchange™ (ONX) suite of switching and service delivery solutions is the first to successfully fulfill the demands of VoIP providers for:

- Network and service scalability
- Heightened voice quality and integrity
- Custom, telco-grade hardware designed for the world’s largest carriers
- An open service delivery architecture that enables consistent innovation and differentiation

A Vision for VoIP

Although it was intended to be open, distributed, and defined by industry standards, the softswitch architecture ended up becoming a closed, proprietary architecture defined by individual vendors. The fundamental problem with centralized softswitch architectures is that too much capability and control is centralized in the media gateway controller, which has to be heavily involved in just about every transaction—from bearer path routing decisions to signaling to feature delivery. Today’s closed and proprietary platforms not only create centralized models ill-suited for subscriber service creation and delivery, they also dramatically limit how-and-when service providers can deliver new features and services to their subscribers.

The answer to these problems is to pursue a completely distributed and decentralized model that mirrors the model of the Internet itself. By distributing the call control logic and processing capabilities normally associated with the media gateway controller to a scalable media gateway, service providers can now distribute and localize:

- Call routing
- Signaling
- Service creation
- Service delivery

sentitO has fundamentally redesigned the softswitch with breakthrough software, silicon, security, and service intelligence innovations that eliminate the security and scalability limitations of traditional softswitch platforms. We offer a truly distributed model that dramatically improves upon the centralized softswitch architecture and represents a clear evolution in VoIP networks.
**Target Customers**

**Carriers and wholesale service providers** that need to reduce transport and operational costs while adding value through the delivery of SIP-based enhanced services.

**Incumbent service providers** seeking to provide efficient and scalable voice over broadband services over DSL, fiber, and wireless infrastructure.

**Competitive service providers** looking to offer facilities-based voice over broadband services.

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**Purpose-Built for VoIP**

The first solution purpose-built from the ground up for VoIP and the resilient delivery of IP-based voice services from the network edge, ONX allows carriers to economically expand their geographic reach and their addressable markets. It provides an open and distributed architecture to enable service providers to efficiently create and evolve VoIP services. The ONX suite incorporates true telco-grade security, management, and performance as well as Session Initiation Protocol (SIP) service innovation and flexibility. Its modularity, scale, and economics uniquely enable rapid deployment and profitability while supporting ongoing service and subscriber expansion.

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**Swift and Efficient VoIP Service Delivery**

The ONX enables simple, seamless, and scalable delivery of IP network and subscriber services across legacy and packet networks. This innovative solution stands in sharp contrast to first-generation softswitching architectures that encumber service providers with monolithic service delivery architectures, operational complexities, and significant up-front investments. Legacy architectures were optimized for the bulk transport of voice minutes over converged IP networks—not to deliver network and subscriber services as part of a highly profitable, multi-service network edge.

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**A Distributed Architecture for Cost-Effective Migration**

A completely open application layer allows carriers and service providers to migrate to IP cost-effectively and incrementally. The ONX suite is focused on the creation and delivery of profitable voice and other SIP-based services and offers a de-centralized, non-blocking architecture that scales without performance degradation, complex traffic re-engineering, or extraordinary inventory investments. sentiO allows service providers to maximize VoIP profitability through the simplified, secure delivery of enhanced SIP services to any customer from any point in the network.

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**Deploying SIP Services over Intelligent Infrastructure**

sentiO offers intelligent infrastructure solutions that deliver unprecedented control for customizing VoIP and other SIP-based services to drive immediate profitability and long-term service differentiation. The ONX serves as the pivot point for the creation and delivery of enhanced SIP-based services, and it transparently synchronizes the transport, signaling, and open applications layers so network operators can rapidly deliver high-value services.

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**Accommodating New Subscribers and Services**

With no common or pooled DSP resource cards, the ONX solution offers linear scalability with a true pay-as-you-grow model for traffic and service deployment without degradation in call completion or resource contention issues.

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**A Complete Framework for VoIP Services**

The ONX suite provides a comprehensive VoIP services framework and allows providers to deliver carrier-grade services from third-party applications servers. Based on an Internet-centric design, sentiO’s ONX family also offers carrier-class network security and seamless system management.
The ONX solution facilitates service provider migration to the delivery of VoIP services at the network edge with higher levels of voice quality, security, and service extensibility than possible with existing centralized softswitching solutions. It allows secure and reliable service delivery to ensure carriers maintain their competitive advantage as they expand to address new markets and applications.

This highly flexible architecture delivers a true convergence of telco reliability with Internet flexibility by combining the latest network processor and router technologies, XML scripting of port, trunk, and subscriber profiles, and a patent-pending method for communicating between SIP and SS7 networks to provide a powerful foundation for a wide variety of revenue-generating applications at the network edge. The ONX natively utilizes SIP and XML scripting of trunks and ports – along with MPLS routing – to create an agnostic application layer for the any-to-any delivery of network and subscriber voice services.

The ONX family is comprised of the following products.

The Intelligent Voice Gateway

The Intelligent Voice Gateway™ (iVg) is a highly scalable, intelligent voice services gateway designed for the edge of carrier and service provider networks. Purpose-built to deliver VoIP transport and services, the iVg uniquely combines media gateway, call control, and router technologies to provide unmatched voice quality and reliability in a telco-grade, NEBS III- and ETSI-certified chassis.

Powered by next-generation DSP and network processor technologies, the iVg is a native IP platform that utilizes SIP and XML to quickly create and alter routing parameters, trunk, port, and subscriber profiles, and to facilitate third-party interoperability. The iVg is the first voice gateway to deliver wire-speed routing and a hardware-based bearer path to deliver enhanced voice quality and integrated security capabilities to protect against Denial of Service (DoS), ping flood and Spam over Internet Telephony (SPIT) attacks.

To sentitO, being purpose-built for VoIP doesn’t mean sacrificing traditional telco requirements. The iVg was designed for the rigors of Tier 1 carrier networks. Its NEBS Level 3-, UL-, ETSI-, and FCC-certified chassis provides test bypass pairs, input and output dry contact closures, and a fully serviceable fan tray. The iVg is ruggedized and can support extended temperature ranges. The most simplified and distributed architecture available today, the iVg is right-sized for easy and cost-effective market expansion.
**Proxy7 Signaling Gateway**

The Proxy7™ Signaling Gateway combines a transaction-oriented SIP proxy with an SS7 signaling gateway for transparent and localized signaling translation. Unlike other solutions that inefficiently backhaul signaling to a centralized softswitch, the Proxy7 translates ISUP and TCAP messages to SIP for complete interoperability with existing SS7 Advanced Intelligent Network Services at the network edge.

The Proxy7 allows a single SS7 or Primary Rate ISDN trunk group to span multiple iVgs. This reduces network costs and simplifies trunk group management. With the ability to operate in both stateful and stateless configurations, the Proxy7 enables policy-driven call routing as well as policy-driven title/number translation. It works in conjunction with the iVg and third-party feature servers to help global service providers reduce the costs and complexities of integrating VoIP and legacy signaling networks.

It combines proxy, redirect, registrar, and authentication functions to ensure carrier-grade performance and reliability of SIP endpoints. Service providers can deliver VoIP services to traditional PSTN customers by allowing third-party VoIP feature servers to “dip” into existing SS7 databases and features. For the first time, service providers can make a seamless transition to VoIP services without stranding any of their existing assets and ensuring that no customer gets left behind.

**PreVision Network Manager**

The PreVision™ Network Manager is an integrated, real-time carrier-grade management platform for seamless, secure, and simplified management and administration. It offers a graphical user interface and allows carriers to view, configure, and troubleshoot the ONX product suite as well as partner products. This Web-based management platform for ONX products and third-party products supports standards-based management via SNMPv3 and XML interfaces and tool sets.

Unlike the majority of management systems that are poll-driven and have a difficult time managing the real-time status of distributed network elements and services, PreVision employs a change-event driven model that provides immediate reconciliation with existing network parameters and immediate notification of both central and remote modifications to network elements.

It supports billing and account management for both sentiO and third-party products over standards-based OSS interfaces, including XML, SOAP, and CORBA. PreVision normalizes the billing and change events from disparate network elements into standard formats for the quicker and easier integration of new network elements and applications.
ONX offers an open, SIP-based pure IP distributed architecture that supports best-of-breed subscriber application servers and enables seamless connectivity for rapid implementation of any-to-any service delivery. The ONX’s field-proven and certified elements are currently being used by service providers around the world in the following applications:

### VoIP Transport
The economic advantages of IP-based voice transport have been clearly demonstrated and the ONX allows carriers to migrate to IP to support the transport of regional and international VoIP traffic with higher margins and lower operational costs. ONX offers a distributed model for VoIP transport. It provides the ability to efficiently interwork TDM and SS7 services around the world and develop features on Internet time using SIP and XML.

### PBX Trunking
To hold onto lucrative business customers and to maximize margins on existing voice interconnection services, carriers need a variety of technologies and services to satisfy the widespread communications demands of large, medium, and small businesses. sentitO offers a new way to use VoIP to lower the cost of voice transport over existing ISDN PRI connections to legacy PBXs that also serves as a future-proof, open solution for the delivery of enhanced SIP services that can be customized on a per-enterprise basis.

### VoIP Termination
sentitO offers a new approach to terminating VoIP traffic that delivers the increased efficiencies needed so wholesale network operators can maintain profitability, retain existing retail service provider customers, and capture new customers. They can also access SIP-based services and leverage standards-based feature services to cross-sell additional services, such as enhanced long distance or prepaid calling services.

### Residential VoIP
sentitO’s residential VoIP solution meets the residential VoIP requirements of service providers through its open and distributed architecture, linear scalability, hardware-based bearer path, and regulatory interface support. At normal densities, the sentitO solution scales in one bay from an initial installation to over 13,824 simultaneous sessions—all managed via a single SS7 point code. This solution also supports emergency call handoffs to the E911 access tandem so that residential VoIP services can remain compliant with evolving E911 regulations.
Partnering with Industry Leaders

As telecommunications service providers look to enhance their networks to deploy VoIP network and subscriber services, the sheer number of vendor offerings only seems to expand, making the choice of suppliers that much more complex. That’s why sentitO established the ONX Alliance, which is aimed at identifying, evaluating, documenting, and demonstrating complete interoperability with the leading suppliers of complementary products and services.

Although vendors now build to international standards, interoperability among various equipment platforms is by no means a guarantee. Through the ONX Alliance, sentitO tests third-party equipment to ensure standards-based interoperability with the ONX family. The ONX Alliance focuses on interoperability with providers of SIP-based applications and services, including:

- Media servers
- Session border controllers
- Billing systems
- Operational Support System (OSS) applications
- Network management systems
- IP telephones
- IP softphones
- Integrated Access Devices (IADs)

Global Customer Service and Support

sentitO Networks offers extensive technical support and training services. Our technical support engineers provide installation and configuration assistance, and registered users are entitled to regular product updates via our Secure Support Site. sentitO offers on-site installation and training programs and we provide technical support via telephone and email.

Multiservice Solutions

Founded in 2000, sentitO Networks is a leading provider of open and distributed VoIP switching and service delivery solutions. sentitO is backed by leading investors, and our ONX product portfolio delivers a future-proof, carrier-grade, distributed architecture based on IP and SIP to create the most innovative VoIP switching and service delivery solution available today. Solutions from sentitO allow carriers and service providers worldwide to leverage SIP and XML to ensure interoperability and accelerate time-to-revenue with VoIP and enhanced IP services.

ONX Architecture