

## Opteq iQ adds value to ISP offerings

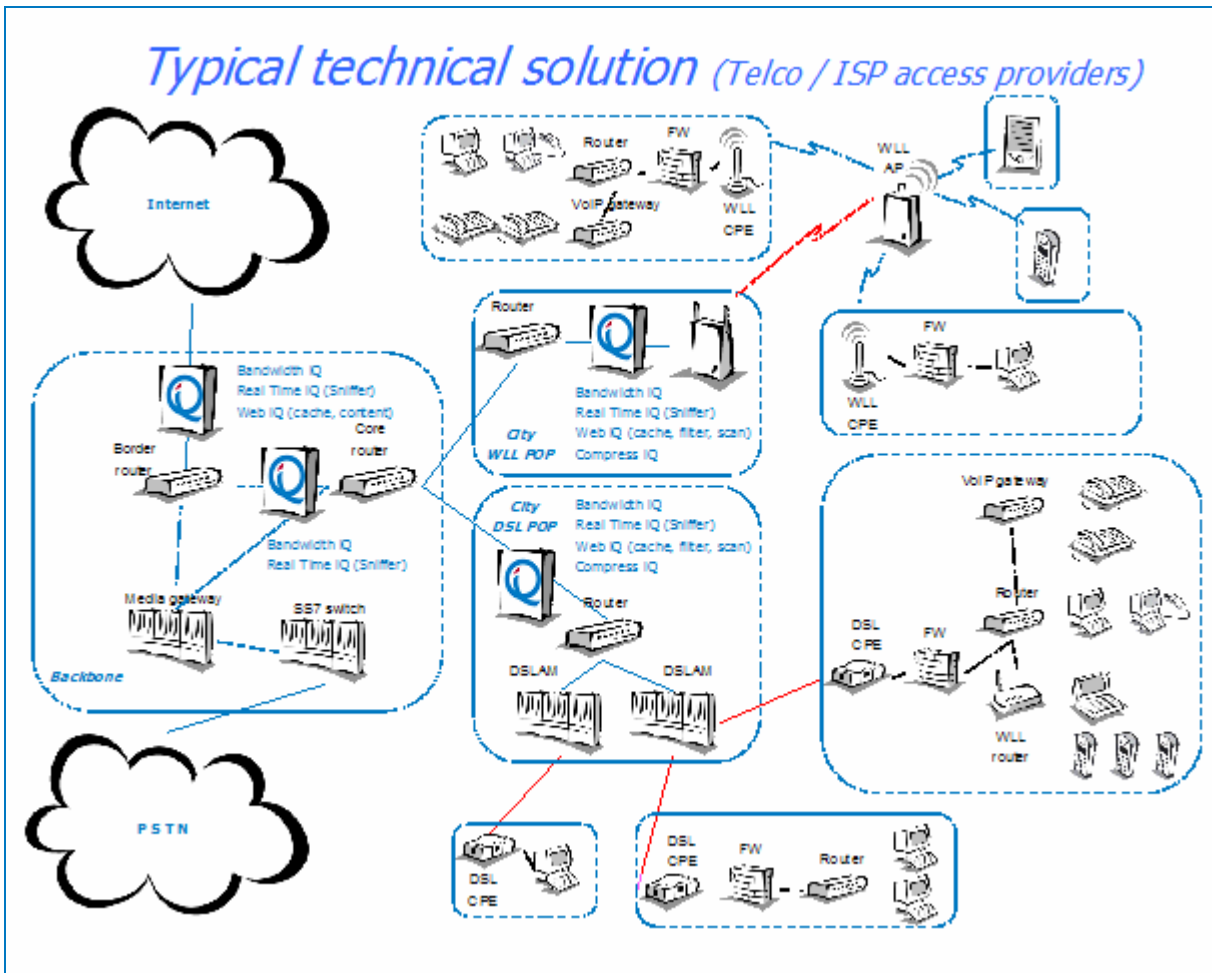
This document serves to highlight some of the key services that may be achieved with Opteq iQ. Opteq iQ will empower you to maximize your current investment, offer more services, reduce costs, and solve problems and increases revenue streams. Service providers are forced to compete on factors other than price and can generate revenue from application based services. Why invest in vertical solutions when Opteq iQ is designed from the core to provide ISP's the services they need?

Service providers are working today in a highly competitive environment. The customer has multiple choices for access – cable, DSL, satellite, fixed-wireless IP, hosting and wholesale – and many more when selecting his data center provider. And switching providers is easy. In addition, many ISP's have made huge investments in network infrastructure, such as access and backbone networks, and find themselves with decreasing revenues (due to competition) on the other side. As a result service providers are looking for new ways to better use their existing infrastructure in order to:

- **Manage Over Subscription** - enable carriers to successfully serve more subscribers over a given infrastructure.
- **Increase revenues and reduce CAPEX and OPEX**
- **Offer new services** that will attract new customers and especially the high paying ones.
- **Retain existing customers**
- **Offer Premium Services** - increase revenues by providing subscribers with new choices of premium services, attract new subscribers and increase the ARPU (Average Revenue per User)
- **Enforce User Policies with Fair and equal access** Set policies and caps to control aggressive bandwidth users who attempt to consume more than their share of bandwidth and disrupt performance for others.
- **Manage virtual server farms**
- **Advanced Billing** - charge on actual use of network services and bandwidth used. The Opteq iQ solution caters for both fixed and scalable bandwidth plans.
- **Centralized Reporting and Management** Opteq offers several solutions for managing multi-unit opteq deployments. Namely Central management server and Opteq Report server.
- **Network security** - control and contain security threats such as denial of service to subscribers.
- **Realtime Network Traffic monitoring** - understand user- and application-level network utilization for trouble shooting, analysis and long-term planning.
- **Remove or limit Illegal traffic type such as p2p at layer 7**

The ISP business model is becoming increasingly complex.

- The need to differentiate services that add value (virus scanning, anti-spam, firewall and security management etc)
- The increasing complexity of client connectivity choices (DSL, cable, wireless etc)
- The addition of more traffic and protocol types that require differing levels of service.



**By using Opteq iQ's unique and proprietary bit pacing technology** one can stop or slow down a host or hosts of any type with any type of traffic sending more traffic than one wishes to handle through a particular bottleneck or to a particular server. This means that Opteq can eliminate discards and retransmissions altogether and does not need buffer management except for brief periods while the network is stabilized, and this applies regardless of whether the traffic is coming at or from the Opteq unit. A side effect of this unique design is that most of the time traffic can be managed at the host level and therefore there is no need to manage at the individual stream level like the competitors must and this allows Opteq to handle much more traffic, hosts, policies, sessions, streams, and groups than anyone else. Many thousands of times more in most cases.

**When it comes to prioritization of traffic streams across a WAN link Opteq excels.**

Any high priority stream such as VoIP, business applications or even online gaming services if paid for will never ever get caught in a buffer shuffle because Opteq does not allow other traffic streams to send data into the network at a rate that would interfere with those streams. High priority traffic in effect has its own lane through the network that operates without delays and it is dynamic, adjusting in size according to traffic needs.

**Opteq iQ enables ISP's to offer improved services to their clients at multiple levels of complexity with real substantial gains to both the ISP and client.**

## Typical scenarios....

**Level 0: No bandwidth management device.** In this scenario there is no bandwidth management device so protocols fight amongst themselves for available bandwidth, sessions drop, packets drop all over the place and individual sessions can steal bandwidth. The more sessions a user has the more bandwidth he will get. p2p protocols are especially good at this and will spawn multiple sessions in downloading content.

**Level 1 - An Opteq unit with no policies.** Opteq iQ with no policies set will immediately make a fundamental difference to the network as a whole. Fair allocation of bandwidth will ensure that no one host can hog bandwidth no matter what protocols it is using. Additionally routers will only receive data at the specified paid for rates. This immediate result is no more unfairness, no more drops at either packet or session level and very much happier clients. The network is in equilibrium and flowing optimally. This may even be offered as a service but usually it is used by ISP's as a competitive advantage and sometimes for basic statistics and/or billing.

**Level 2 - Basic shaping.** Priority to HTTPS and/or business services. Priority/Reservation to inter branch links. Priority/Reservation to services like VoIP. This requires the ISP to offer it as a service because it requires them to gather information from the client about what they are doing, what is important to them and how they would like it managed. Value add also increases as the ISP now has detailed stats with regards to priority application usage and performance as well. Remote access to user usage statistics is standard on all Opteq units.

**Level 3 – Advanced shaping offerings.** A continuation of the above except the ISP can take it a step further by giving users secure real-time access to their reports as well as allowing them to manage their own rules within their set/paid for bandwidth specifications. Destination or source based policies based on ToS flags. Time based policies/services and intelligent quota management allowing only priority traffic to burst when over quota. The options are endless.

**Level xxx** – Enable the Opteq Firewall and offer fully managed services. Services such as caching, content filtering, http virus scanning and mail scanning may be offered transparently. Enable the services that your business model requires. Providing integrated, centralized and easy to use differentiating services to your client base at each POP.

These services are all capable of running alone or on the same unit. We have a range of hardware appliances which may be clustered together to cater for any load. In addition to advanced bandwidth management solutions - Please see the individual module datasheets for specifications.

- **Real Time iQ** - Auto-discovery, classification and reporting of all traffic types. This is a network sniffer and will enable the ISP to identify virus outbreaks and other abnormal activities.
- **Firewall iQ** - The Opteq Firewall (Firewall iQ) is a state of the art, feature rich, and very functional suite of software that covers all the aspects required to ensure the security of your network.

- **Web iQ** - Content Manager, Caching System and http virus scanner. Saving bandwidth and improving response times while gaining control of Internet access and protecting against viruses. Web cache will save in the region of 45% of upstream bandwidth whilst at the same time provide detailed reporting. URL filtering services may also be sold to clients ensuring web content is free from porn and or violent content. Defines implements and enforces the appropriate web access policies of individual organization or homes. Protection against internet viruses, worms and all other known web based vulnerabilities through HTTP virus scanning before writing to cache. Shields users from un-trustworthy websites and restricts access to undesirable sites. Reduces bandwidth usage improving performance and user productivity. Provides extensive visibility and control over internet usage.
- **Mail iQ** - Email manager and Gateway. Blocking spam, controlling all aspects of Email and protecting against viruses. Delivers the most comprehensive mail security by disarming and removing dangerous embedded HTML, viruses and other mail vulnerabilities before they even reach your network. Enables the unloading of enterprise mail servers and other key network resources to improve performance and efficiency. Reports extensively on mail usage, trends and all related activities. Monitors and manages all network traffic to ensure security and usability of internet mail. Eliminates spam and other unwanted mail, reducing bandwidth consumption and improving user productivity.

What every ISP will know is what level of multiplexing they can get away with without causing customer churn. Typically this will be similar to; if the client averages go over 40-60% link usages at peak times then he is likely to complain of service problems. The Opteq iQ unit will push that up to around 90% due to its Bit pacing technology without you, the carrier doing anything at all. Opteq's smallest unit the OP1400 can scale from 512Kbps to 350Mbps full duplex. All other modules are multi-Gigabit capable. Opteq's Redundancy module can be implemented in high availability environments. Opteq iQ empowers ISP's to manage both their internet link and links to clients on the same unit at the same time. With a single Opteq iQ unit one may manage the Internet link on the WAN card and all the customers as groups on the LAN card (or even both on one card if you want to). With Opteq iQ you can have dependencies across these I.e. you can have a burst trigger defined or threshold on the WAN links that you use to control the LAN groups and you can group those as well (usually for service level groups).

Each ISP has a unique set of challenges and we are always happy to be challenged to help resolve them.



---

## About Opteq iQ

Opteq International is acknowledged as an emerging leader in the rapidly evolving world of true network management. By designing, developing and manufacturing our own proprietary applications on unique hardware server platforms, we retain total control over the quality, throughput and reliability of our products. The Opteq flagship product, Opteq iQ, is the unique customized vehicle through which we measurably impact the businesses of our customers by fully capitalizing on the investment made in their network. The driving idea behind Opteq iQ is to get the most out of our customer's network ...to thrive in today's fast-paced, data-intensive economy where our customers depend on the corporate network to be truly responsive and secure. Opteq iQ is designed as a single solution to facilitate the three converging key deliverables of the network management word – Performance, Security and Management. To facilitate this Opteq iQ has a comprehensive suite of fully integrated application modules such as Bandwidth iQ, Web iQ, Compress iQ, Intrusion iQ, Mail iQ, Firewall iQ and Realtime iQ all residing on one common solution platform Singular iQ. All of the Opteq iQ application modules reside on, and exploit the rich functionality provided by Singular iQ. While each module delivers industry leading functionality and performance in its own right, these can be combined to deliver the most comprehensive Network Management solution available today. This modular architecture fundamentally differentiates the Opteq iQ product set from its competitors and underpins Opteq's approach and philosophy towards managing network infrastructure - end-to-end management, customized for each unique installation, from one transparent solution.

---

