Delivering Efficient Optimization Solutions

Both mobile and wireline network operators have a congestion problem. The expansion of their services and continued wireless broadband growth, paired with ever increasing smartphone usage for social networking, entertainment and commerce, has caused a huge increase in bandwidth consumption. The rise in bandwidth consumption has in turn led to network congestion, which, if not alleviated, can result (and in some cases has already begun to result) in customer dissatisfaction and churn. What's more, customers are expecting more services in the face of the desire on the part of operators to increase ARPU, all amid projections by analysts that bandwidth usage will continue to rise. Something clearly has to be done, or no one – not customers or operators - will be happy.

Operators face a number of hurdles in trying to resolve the increasing congestion issues within their networks, including congestion that is occurring in:

- The backhaul segment, from the Radio Access Network (RAN) to the core network
- The edge segment, from the Base Station Controller to the Circuit-Switched Media Gateway
- The core, between the media gateways.

One way to try and address network congestion issues is to directly confront the lack of bandwidth available. For example, operators have attempted to:

- Increase the available bandwidth with extra leased lines. Unfortunately, this has an associated recurring cost.
- Impose "throttling" on the bandwidth consumption through pricing plan changes to customers. However, this approach has a highly negative stigma among customers, and thus can cause them to move to another provider which does not engage in throttling.
- Move to a fiber-based Ethernet backhaul network. This can be seen as a permanent solution; however, it has associated costs, takes a long time to plan and deploy, and might not ultimately deliver an ROI in less populated areas.
- Optimize existing bandwidth. This is seen as the sweet spot in that it takes a short time to deploy and can leverage usage of the current infrastructure while also being capable of delivering a solid ROI.

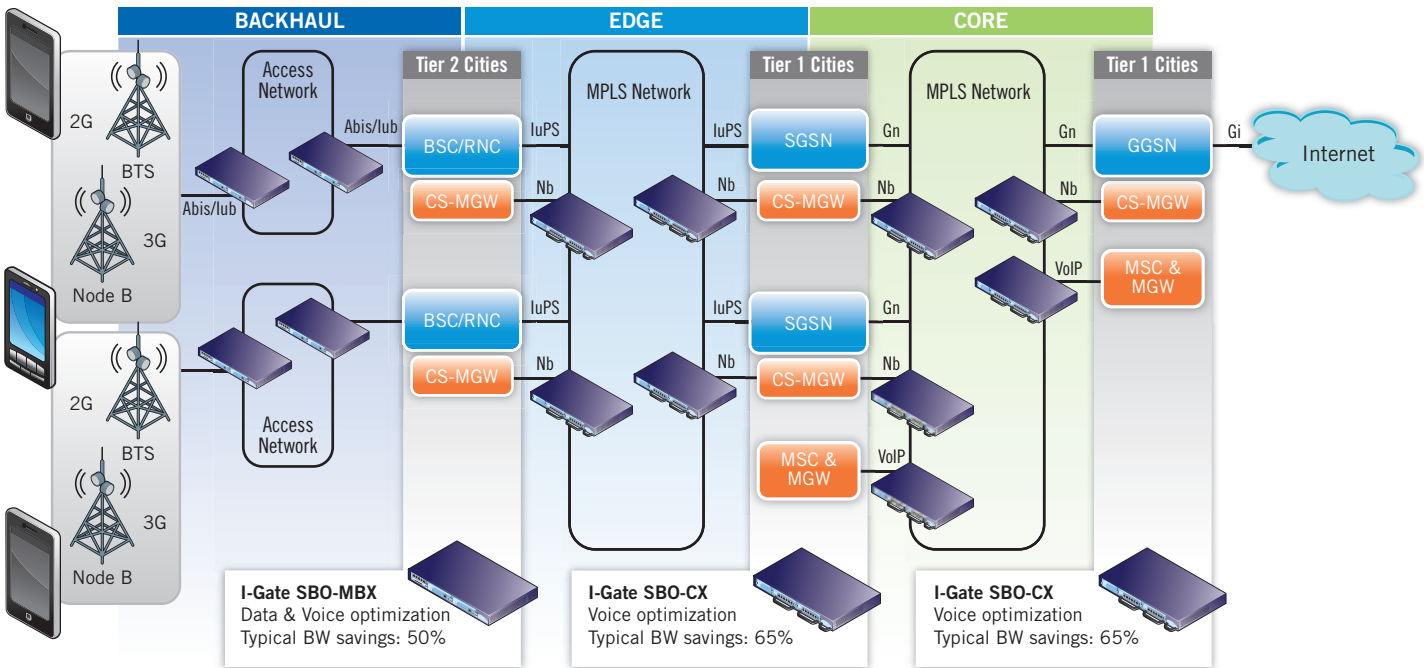

Figure 1 - Dialogic® I-Gate 4000® Session Bandwidth Optimizers deliver optimization for mobile & wireline networks

Among these options, optimization of existing bandwidth is seen as the path of choice for most in that it can deliver efficient use of current infrastructures, provide capacity expansion while also benefitting customer satisfaction and retention, as well as provide the ability to increase the number of subscribers and to roll out new services while keeping the same pre-optimization bandwidth costs.

Delivering Optimization with Dialogic® Products

Dialogic has products to support the bandwidth optimization for both the core and backhaul segments of the network for mobile and wireline customers, as shown in Figure 1. These products can also be used with a wide range of transmission infrastructure elements such as satellite, radio, WiMax, and terrestrial (copper, fiber), delivering optimization for 2G, 3G, LTE and VoIP links.

Backhaul Optimization with Dialogic® I-Gate® 4000 Session Bandwidth Optimizer Mobile Backhaul (I-Gate 4000 SBO-MB) and Dialogic® I-Gate 4000 Session Bandwidth Optimizer Mobile Backhaul X (I-Gate 4000 SBO-MBX)

The Dialogic® I-Gate® 4000 Session Bandwidth Optimizer Mobile Backhaul (I-Gate 4000 SBO-MB) and Dialogic® I-Gate® 4000 Session Bandwidth Optimizer Mobile Backhaul X (I-Gate 4000 SBO-MBX) are standalone systems that can optimize bandwidth and significantly increase bandwidth capacity in the backhaul segments of both 2G and 3G mobile networks. Because each one optimizes Abis (connection between the Base Transceiver Station and Base Station Controller) and Iub (connection between RNC and Node B) data streams, including both ATM and IP-based Iub streams, either product can provide a cost-effective and efficient choice for increasing backhaul capacity toward significantly reducing capital and operation expenses.

Along with Abis and Iub optimization, these two products leverage in-house statistical multiplexing and grooming techniques that have been shown in field trials to typically double the capacity of backhaul links while preserving the quality and integrity of the original data traffic through Quality of Service (QoS) protection techniques.

Each mobile operator backhaul segment design is unique and based on several factors such as geography (urban versus rural), population density, terrain, among others. In order to address the varying requirements of backhaul designs, the I-Gate 4000 SBO-MB and SBO-MBX products support a wide range of deployment strategies, including these topologies:

- Point to Point (PTP)
- Point to Multi-Point (PTMP)
- Drop and Continue
- Ring
- Data Offload

Being adaptable allows an I-Gate 4000 SBO-MB and/or I-Gate 4000 SBO-MBX to fit into even highly complex network infrastructures to help boost bandwidth and reduce the cost per bit in backhaul. Figure 2 shows an example of the I-Gate 4000 SBO-MB and SBO-MBX products in a typical deployment scenario delivering backhaul optimization for 2G and 3G networks.

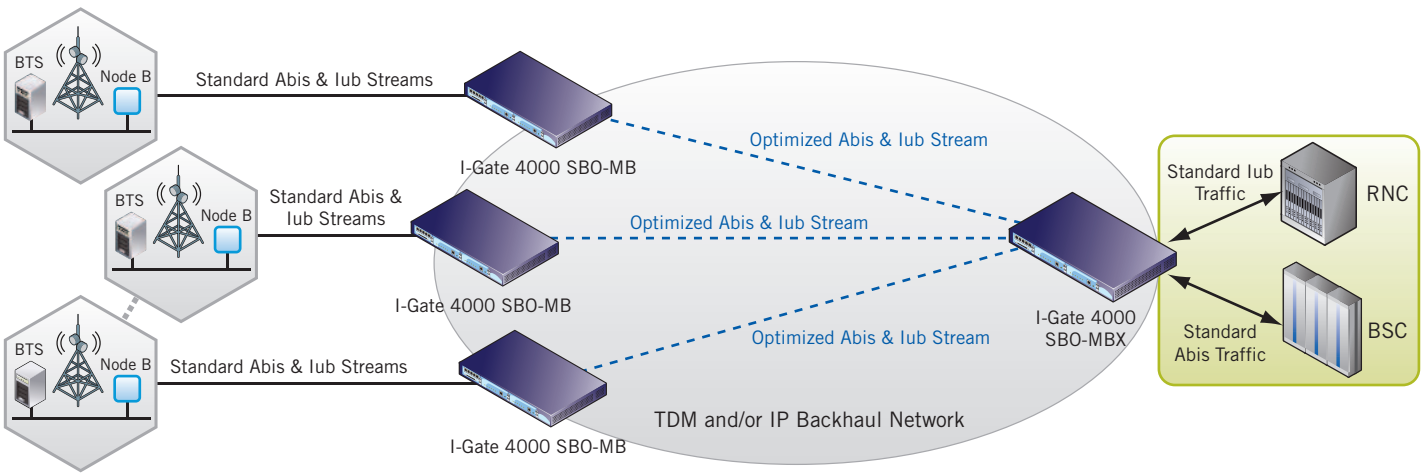

Figure 2 - Delivering Backhaul Optimization for 2G and 3G networks

Core and Edge Optimization with Dialogic® I-Gate® 4000 Session Bandwidth Optimizer Core-X (I-Gate 4000 SBO Core-X)

Dialogic® I-Gate® 4000 Session Bandwidth Optimizer Core-X (I-Gate 4000 SBO-CX) solution can work with many applications to optimize traffic while not only enabling CAPEX and OPEX savings opportunities, but also providing quality and reliability for transported calls.

The I-Gate 4000 SBO-CX is a standalone equipment solution for those seeking to minimize the requirements and packet rates (packets per second) of the VoIP packet streams carried in single and multiple destinations; for mobile operators deploying or using 3G networks; for mobile and wireline operators using VoIP media gateways that interconnect 2G mobile switches (e.g., MSC) and/or PSTN switches (e.g., tandem national/international switches); and also for operators and service providers that carry wholesale VoIP interconnection traffic.

The I-Gate 4000 SBO-CX leverages sophisticated in-house bandwidth and IP packet rate optimization technologies, while preserving the quality and reliability of the original VoIP traffic (such as voice or fax). It can be deployed in a number of different applications, including:

- Between 3G Mobile Media Gateways
- Between VoIP Media Gateways
- Across broadband links for Call Centers and Enterprise voice

Figure 3 shows the I-Gate 4000 SBO-CX in a typical solution configuration. The I-Gate 4000 SBO-CX automatically detects and processes the Nb, IuCS or VoIP traffic streams, and it can be seamlessly inserted into deployed links and interconnections to operating networks without having to modify existing equipment or network topology, helping towards a speedy deployment.

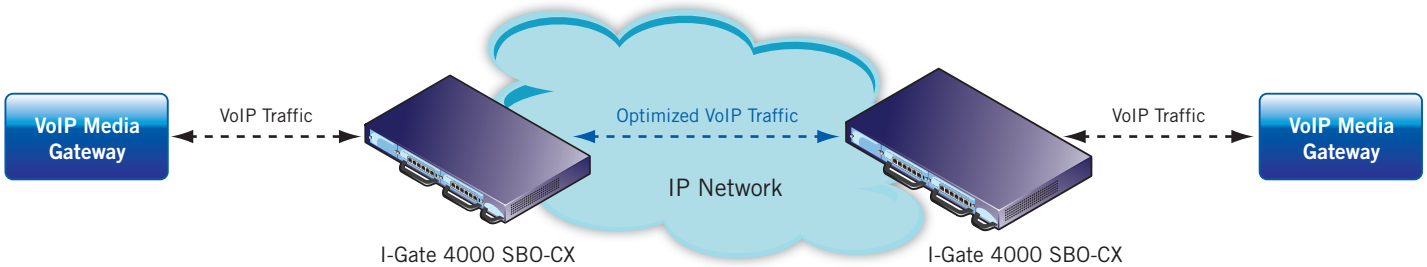

Figure 3 : Example of Typical Solution Configuration

For More Information

For information about Dialogic® products for Optimization, contact your local Dialogic representative or www.dialogic.com/contact. Product information is also available online at www.dialogic.com. See also:

Bandwidth Optimization Products: www.dialogic.com/Products/gateways/i-gate-4000-sbo.aspx

Network Infrastructure Solutions: www.dialogic.com/Solutions/Network-Infrastructure.aspx

Mobile Backhaul Optimization Solutions: www.dialogic.com/Solutions/Network-Infrastructure/Infrastructure/Mobile-Backhaul-Optimization.aspx

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