IP DSLAMs: A *Heavy Reading* Competitive Analysis

EXECUTIVE SUMMARY

The IP DSLAM may have been originally envisioned as a fairly simple, low-cost enabler of high-speed Internet access service, but the vision has changed markedly in recent months. IP DSLAMs are now emerging as a key component at several critical convergence application junctures: voice and data, telecommunications and entertainment, and even fixed and mobile networking. Each of these meeting points is pulling IP DSLAM technology in a different direction. The IP DSLAM now has to be capable of supporting high-bandwidth services with demanding QOS requirements, such as IPTV, video on demand, and the simultaneous delivery of triple-play services, including VOIP.

These diverse requirements have led to a proliferation of IP DSLAM types in terms of size and location – a development that makes comparing IP DSLAMs a fairly complex task. The best way of identifying the potential winners and losers in this rapidly changing sector is to look at the products that vendors have lined up to address the diverse and challenging carrier requirements.

IP DSLAMs: A *Heavy Reading* Competitive Analysis presents the most detailed, comprehensive competitive analysis of IP DSLAMs undertaken to date. In key product categories, it provides granular information on every important aspect of functionality and performance of each vendor's offering, in matrix format. It then uses a weighted system to provide a high-level view of which IP DSLAMs represent the best overall choice for different applications.

The detailed product analysis spans indoor products, outside plant (OSP) products, combined IP DSLAM/router/B-RAS products, and OSP sealed-unit products. The scored comparisons in this report include the following product categories:

- Central-office IP DSLAMs
- Medium MxU/CLEC collocated IP DSLAMs
- Small MxU/CLEC collocated IP DSLAMs
- Combined IP DSLAM/router/broadband remote access servers (B-RASs)
- Large OSP IP DSLAMs
- Medium OSP IP DSLAMs
- Small OSP IP DSLAMs
- OSP combined IP DSLAM/router/B-RASs
- OSP sealed-unit IP DSLAMs

In total, 50 different products from 19 manufacturers are evaluated and compared by dozens of essential criteria, including:

- Unit size
- Ethernet features

- Equipment and DSL features
- Quality of service features
- Subscriber ID and security features

Excerpt 1: CO IP DSLAMs – Ethernet Features

FEATURE	ALCATEL 7302 ISAM	ALCATEL 7300/ 7301 ASAM	ALLIED TELESYN IMAP 9700	ECI HI-FOCUS 4	ERICS-SON EDA 288X	HUAWEI SMART-AX MA5600	ISKRA-TEL SI 2000 IPBAN	LUCENT STINGER
Switching throughput	24 Gbit/s	5 Gbit/s	56 Gbit/s Wirespeed on all lines with full feature processing	1 Gbit/s	8.8 Gbit/s full du-plex	48 Gbit/s	48 Gbit/s	5 Gbit/s
Number of 100-M FE ports	7	2	Up to 170 (10 port cards, 17 slots)	✖	24	112	8	4
Number of optical 1-GigE ports	7	3	Up to 142	1	4 (in re-dundant config.)	28	8	2 active + 2 re-dun-dant
Number of optical 10-GigE ports	N/D	N/D	2	✖	✖	✖	✖	✖
Multicast support	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 802.3ad Ethernet link aggregation	✓	✓	✓	✖	✓	✓	✓	✓
MAC bridging	✓	✓	✓	✓	✓	✓	✓	✓
IGMPv2 snooping	✓	✓	✓	✖	✓	✓	✓	✓
IGMPv2 proxy	✓	✓	✓	✓	✓	✓	Planned	✓
IGMPv3	✓	✓	Future SW	✖	✓	N/D	✖	✖

FEATURE	MARCONI AXH	NOKIA D500	OCCAM BLC 6000 12U CHASSIS	PARA-DYNE IPD 12000 BLC	PARA-DYNE 8820 BLC	SIEMENS SURPASS HIX 5635	UTSTAR-COM AN-2000 B1000
Switching throughput	48 Gbit/s	5 Gbit/s	N/D	40 Gbit/s	1 Gbit/s	24 Gbit/s	16 Gbit/s
Number of 100-M FE ports	384	2	72	8	1	256	10
Number of optical 1-GigE ports	4	2	48	4	1	132 (128 downlinks + 4 uplinks)	8
Number of optical 10-GigE ports	✖	✖	Future	0	0	✖	2
Multicast support	✓	✓	✓	✓	✓	✓	✓

FEATURE	MARCONI AXH	NOKIA D500	OCCAM BLC 6000 12U CHASSIS	PARA-DYNE IPD 12000 BLC	PARA-DYNE 8820 BLC	SIEMENS SURPASS HIX 5635	UTSTAR-COM AN-2000 B1000
IEEE 802.3ad Ethernet link aggregation	✓	Near future	Future	✗	✗	✓	✓
MAC bridging	✓	✓	✓	✓	✓	✓	✓
IGMPv2 snooping	✓	✓	✓	✓	✓	✓	✓
IGMPv2 proxy	✓	✓	✗	✓	✓	✓	✓
IGMPv3	✓	✗	Future	✗	✗	✗	✓

Source: Heavy Reading

For a list of companies with products evaluated in this report, <u>click here</u>.

For a list of other companies profiled in this report, <u>click here</u>.

Report Scope and Structure

IP DSLAMs: A *Heavy Reading* Competitive Analysis is structured as follows:

Section I is an introduction to the report, with complete report key findings.

Section II provides an overview of IP DSLAMs, including a description of what they are and why they are important, as well as a review of the key types and applications of IP DSLAMs.

Excerpt 2: DSL Forum Technical Report 59 Architecture
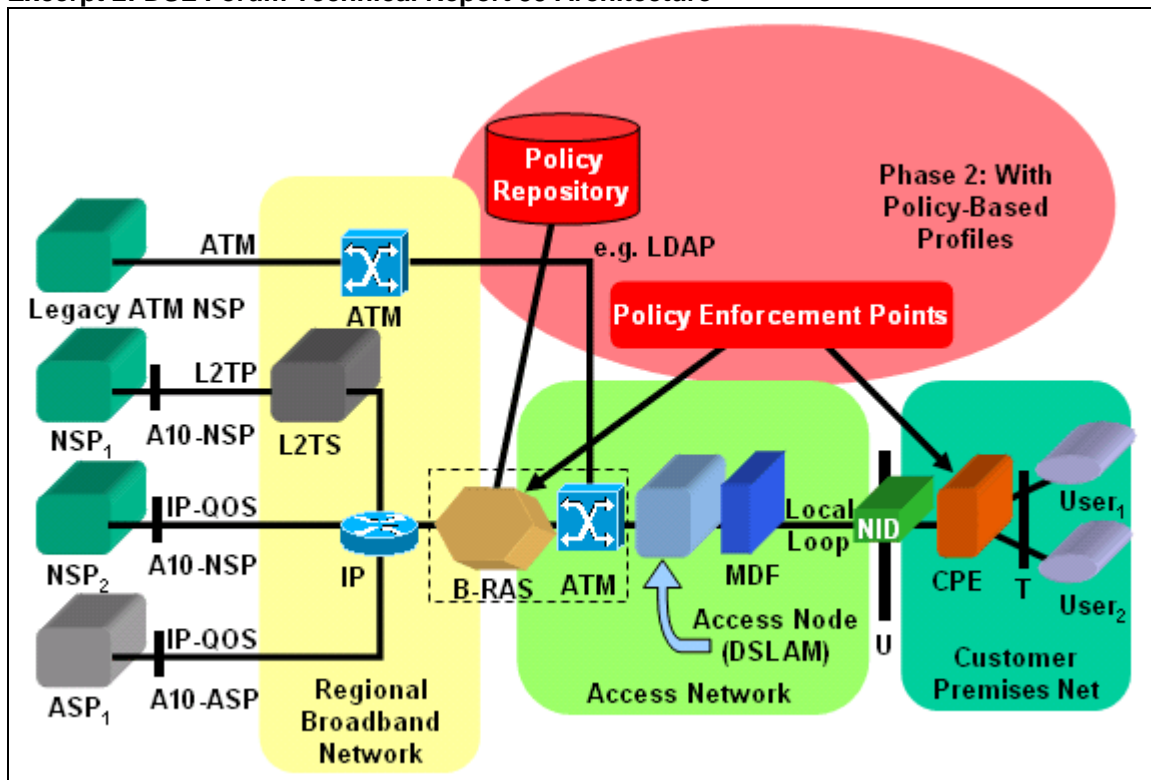
Source: DSL Forum

Section III presents basic product and strategy information for all vendors whose products are evaluated in this report, as well as profiles of other vendors in this sector.

Section IV offers a complete feature-by-feature product analysis for nine kinds of IP DSLAMs by location/size/capability.

Section V contains a complete competitive analysis, and product ratings for all nine IP DSLAM types.

The report is essential reading for a wide range of industry participants, including the following:

- **Telecom service providers:** Which IP DSLAM products best meet your immediate and long-term needs? How do today's products compare for the features and performance specifications that are most important to you? Which suppliers are best positioned to deliver the optimal DSL migration strategy? Which products offer the interoperability you need with your installed equipment?

- **IP DSLAM suppliers:** How do your products compare with the competition? What are the specific strengths of your product line that will resonate with prospective carrier buyers? Are there potential weaknesses in your product that need to be addressed?

- **Investors:** Which equipment makers are in the best position to capture market share in this important telecom industry sector? Which startups are delivering the technology that will gain market traction with carrier buyers?

IP DSLAMs: A *Heavy Reading* **Competitive Analysis** is published in PDF format. A companion report covering the multiservice access platform (MSAP) sector will be available in 4Q05.