PRI to BRI Conversion

Companies often operate a substantial number of ISDN Basic Rate (BRI) lines. These are typically ordered through departmental budgets and can be an expensive under-utilised resource.

BRI lines may be used for a combination of different voice and data applications, including:

- **Telephony**
- **ISP internet connections**
- **Router ports**
- **ISDN backup**
- **Videoconferencing**
- **Telemetry**

These applications require periodic access making them very expensive when installation and rental costs are taken into account. Liberator provides a means of sharing these expensive circuits to increase availability and dramatically reduce operating costs.

Customers can use Liberator to:

- **Provide more ISDN ports**
- **Reduce costs**
- **Improve service levels**
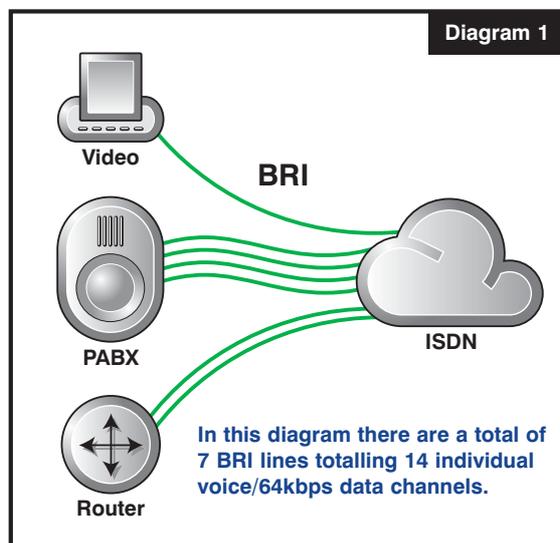- **Achieve space savings, simplified billing and cabling**

Application descriptions

PABXs are usually connected via ISDN, using multiple BRI lines or, in larger companies, PRI. Separate BRIs for data applications such as ISP connections, routers, backup equipment and video conferencing systems are often additional requirements with their own ISDN services.

PABXs can also be an expensive and inflexible way to provide local BRI connections.

Many DTEs connecting to a BRI interface establish a 64kbps voice/data call only occasionally, and often use only one of the two channels available through its BRI connection.

This means that each BRI is rarely used, and even when it is, 50% of its capacity is wasted making it inefficient and expensive.

Diagram 1

Video

BRI

PABX

ISDN

Router

In this diagram there are a total of 7 BRI lines totalling 14 individual voice/64kbps data channels.

How Liberator can help (1) – Reduce Network Costs.

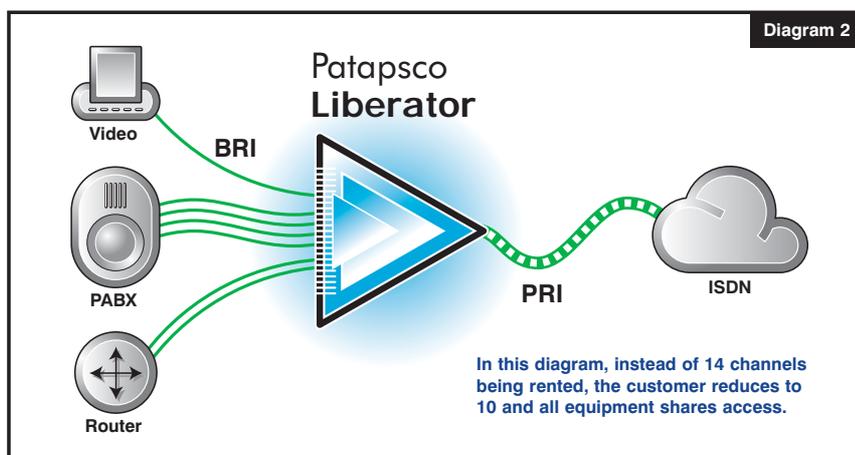The Liberator range can reduce costs in three main areas:

a)   Rather than renting many BRI lines, a single ISDN Primary Rate (PRI) line offers lower rental and installation costs. It is fast and simple to add channels when they are required, cabling is reduced and billing greatly simplified for improved cost-control.

b) Whilst BRI is often only available from the main carrier, customers will usually have far more choice when selecting a supplier for PRI circuits. This means that companies can "shop around" for lower prices for the delivery of PRI circuits. This will reduce the cost of ISDN network access significantly in terms of installation, rental and even on-going call charges.

[Please note that in most countries the carrier will provide a part-enabled PRI interface, just charging rental for the number of channels needed.]

c) Using a Liberator with a PRI network interface means all local BRI devices have access to, and share, the ISDN channels (if wished).

As the BRI equipment typically makes only occasional calls, and at different times to each other, fewer channels need to be rented as equipment can share and contends for each channel.

Diagram 2

Patapsco **Liberator**

Video

BRI

PABX

Router

PRI

ISDN

In this diagram, instead of 14 channels being rented, the customer reduces to 10 and all equipment shares access.

To prioritise applications, a minimum number of channels can be reserved for a device. In this example the customer could keep 6 circuits available for the PABX. This means the PABX will always have these 6 channels available to use but if the other devices are not using ISDN, it can dial up to its allotted 8. When the PABX is not using more than its 6 reserved channels, the other devices will share the remaining 4 channels.

How Liberator can help (2) – Maintain network costs but improve service levels.

a) When users require additional ISDN lines they can be simply connected to a spare port on the Liberator. No additional costs are involved and on-going rental charges do not increase. By monitoring total ISDN network usage, network managers can provision additional network capacity only when business needs require it. Users will benefit from an immediate improvement in service delivery times.

b) Liberator provides ISDN access to equipment at reduced, or even no additional cost. Applications that were previously considered uneconomical can, with Liberator, be justified. This is particularly true of applications such as backup for leased lines (see application note AN-006(E)), where the ISDN costs are normally higher even than the equipment costs.

How Liberator can help (3) – Thinking of adding more BRI lines?

Are you about to order more ISDN lines? Then consider moving to PRI delivery first.

Continually adding BRIs means higher installation and rental costs, more "boxes-on-the-wall", longer delivery lead-times, more cabling and yet another circuit reference and separate invoice. It is a short-term fix to on-going capacity growth.

The Liberator system means a single PRI provides multiple BRIs and where the number of PRI and BRI channels can be increased by software, almost immediately. Once the PRI is installed, there are no more BRI rental charges and moves/changes are much easier and lower cost and adding a new BRI is as simple as plugging it in.

How Liberator can help (4) – Mixed Applications

Whilst this Application Note is one of a series, each of which covers different applications, Liberator places no restriction on the number of applications that can be supported simultaneously.

Overall, the advantages of Liberator for multiple ISDN installations are:

- Improved ISDN usage by giving all devices access to a single "pool" of circuits, allowing the overall number of circuits to be reduced.
- Increase in service levels to/from devices by maintaining the number of network ports yet increasing the number of connections from the devices to the Liberator.
- Reduced installation costs
- Reduced rental costs by using capacity more efficiently
- Simplify billing and circuit tracking.
- Fast availability of extra BRIs for expansion at virtually no cost
- Less space, fewer "boxes" and simplified cabling.
- Fast, simple installation with minimal user-impact.
- Simple to configure and re-configure (unlike most PABXs!)

Whilst it is worth noting that some PABXs could provide a similar function. There are many reasons why Liberator should be considered:

- **A PABX will often require a major upgrade to support extra PRI and BRI network ports.**
- **The cost of the PABX components is often prohibitively high.**
- **Many PABX's will not be able to be upgraded at all..**
- **The cost, management time and disruption associated with upgrades/swap-outs.**
- **Liberator will keep the Voice and Data management functions separated.**

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