Aggus & Franklin
Technology Consulting

Consultant Casebook - Victoria Conference Centre

By Peter Aggus

When we last wrote about the Victoria Conference Centre, it was in connection with the Tel-Ed conference and its innovative use of data communications to link educational seminars in Victoria and New Orleans. As a result of that conference, the Victoria Conference Centre decided to build a permanent technology network to enable it to encourage similar events in the future. This casebook story shows how the Victoria Conference Centre has moved to a communications infrastructure fit for the next millennium.

VCC Main entrance

Tel-Ed Review

The data network for Tel-Ed was constructed using conventional 10baseT ethernet technology. The active components were simple unmanaged hubs linking the LAN outlets back to a central router. This provided the gateway to the Internet and the leased-line to New Orleans.

Whilst adequate for the purpose, there was virtually no security, no ability to control traffic and a significant vulnerability to lockout by rogue terminals. All IP addresses were statically allocated, giving the organisers a significant configuration job to manually enter and police all the addresses used.

Everything was well behaved and there were no problems, however a future permanent system must address all these issues and must also be significantly easier to set up and run.

Data Communications Needs

The first step was to review the total requirement for data communications. This not only included the projected LAN but also included dial-up ISDN and, potentially, other services.

Plaza area

The Victoria Conference Centre has recently been provided with a state-of-the-art NEC NEAX2400 PBX to serve its voice communications needs. This PBX is connected to the local phone company by way of Megalink ISDN trunks. Analog locals have been provided, along with extensive patch capability to permit basic dialtone to be delivered to any location in the facility. This supports simple modem and fax users perfectly adequately.

In addition to the analog locals, there is a bank of digital locals, configured to behave like CO-based Microlink ISDN lines. By this means, digital “dialtone” can also be provided wherever it is required to support high speed dial-up data, or videoconferencing.

Both the local cable company and the telco have fibre connections into the Victoria Conference Centre communications room. As a result it is relatively easy now to engineer T1 data lines. The fibre access can also support higher speeds if required. BCTel Ubiquity service has been engineered for a high grade video link using this access system. Additionally, the Provincial Government's Metropolitan Area Network (known as the MAN) has an access node in the communications room - thus giving government departments access to the range of services provided through the Information Technology Systems Division (or ITSD) for their conferences.

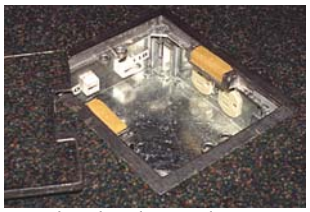
Internet Access

Rather than force clients to use a standard access path to the Internet, the LAN is designed to be able to route Internet traffic via a selection of routes. Government clients will be able to use the ITSD network facilities, whilst commercial users will be able to choose fast access via BCTel or Shaw - or slower access via the Internet Service Provider of their choice using dial-up analog or ISDN lines.

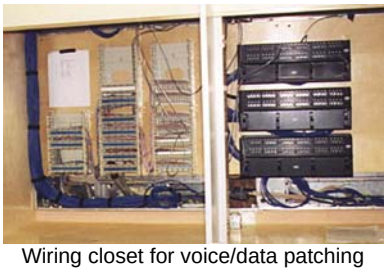
LAN cabling


Floor box in the exhibition hall

The facility is cabled with fibre to many locations in order to support direct access to future fibre-based services. Currently, however, all service delivery can be accomplished using Unshielded Twisted Pair (UTP) cable. As a result, the structured wiring of the LAN has been designed using a fibre backbone from the communications room to five wiring closets distributed around the Victoria Conference Centre and the adjacent Empress Hotel. Final drops from the closets to the terminal RJ45 LAN jacks use Category 5 UTP cable, carefully terminated to support transmissions exceeding 155MHz - way beyond even 100baseT fast Ethernet.


Floor box in meeting room

The wiring closets will contain fully managed Ethernet switches, to allow segmentation and security to be applied to any group of LAN drops. Each closet will have its own local Uninterruptible Power Supply (UPS) to protect the data network from the effects of power glitches.


Wiring closet for voice/data patching

Just like the voice telephone system, each wiring closet contains patch facilities to enable any desired combination of LAN jacks to be connected to the backbone network. With multiple outlets on every wall and floor space in all meeting rooms and display areas, this gives an immense amount of flexibility. The voice telephone network has been adapted to use the same communications closets so that it has access to the new wiring drops if required. Using specially made adaptor cables, each RJ45 jack can support up to 4 separate phone lines.


Main theatre

LAN Servers

To complete the LAN, a number of central servers will be provided. These will include:

- systems to manage the LAN components
- servers to allocate IP addresses dynamically (making using the LAN more like connecting to a local ISP)
- proxy servers to control access between the LAN and the Internet
- internal (Intranet) web servers and e-mail gateways

Terminals

Clients do not expect to be required to provide their own phones to use the telephone system. In a similar way, the Victoria Conference Centre's a/v supplier will be able to supply turnkey workstations. This will assist clients in setting up conferences with large network needs and will avoid the maintenance problems of shipping and managing large quantities of computer equipment.

Large screen displays, including projector systems for the main screen in the theatre, will also be available as a fully integrated, managed package.

Audio and Video

When the Victoria Conference Centre was constructed, an extensive a/v cable infrastructure was provided. This allows microphones and cameras to be installed at many locations and patched through central a/v equipment to speakers and video systems, including theatre size projection video. The central equipment can also be linked to video or audio conference terminals to communicate with remote locations as required.

Future developments in videoconferencing may well require that the equipment is located closer to the user (as was the case when the Tel-Ed conference linked the VCC lecture theatre with its counterpart in New Orleans). The LAN cable infrastructure, including the fibre runs, is designed to be capable of supporting such developments as they arise.

Future Extension

Currently, there is a fibre link to a LAN node at the adjacent Empress hotel. Plans are under consideration to provide similar links to other participating Victoria hotels. This will allow clients a fully integrated seamless voice and data service in all their conference venues.

Conclusion

Very few conference centres have planned such a fully featured voice/data/video network to serve their clients. This gives Victoria a significant marketing advantage to add to its existing location appeal and make the Victoria Conference Centre one of the leading venues for technology-based conferences.

We are proud to have been instrumental in creating and delivering this vision.

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