



WHY SHOULD YOU CONSIDER AN OPTICAL FIBRE SOLUTION ?

Optical Fibre services provide far more Internet bandwidth than DSL. They also include additional features which can help businesses: you can connect two or more locations within a metropolitan area to each other using a combination of fibre optic.

This means that you can create a single private network that includes locations currently using a variety of connections such as DSL and Cable.

BRIEF OVERVIEW OF FIBER OPTIC CABLE ADVANTAGES OVER COPPER (DSL) :

- **SPEED:** Fibre optic networks operate at high speeds - up into the gigabits (10 Mbps, 100 Mbps, 1 Gbps)
- **BANDWIDTH:** large carrying capacity (ex: large AutoCAD files, VoIP telephony, plans, etc,)
- **DISTANCE:** Signals can be transmitted further without needing to be "refreshed" or strengthened.
- **RESISTANCE:** Greater resistance to electromagnetic noise such as radios, motors or other nearby cables.
- **MAINTENANCE:** Fibre optic cables costs much less to maintain.

DSL Disadvantages :

- No current standardization
- Distance dependence: The farther you live from the DSLAM (DSL Access Multiplexer), the lower the data rate. The longest run lengths are 18,000 feet, or a little over 3 miles.
- Access: Once again, rural areas get shorted. These markets are not as profitable for the Telcos.
- Speed Asymmetry. Downstream/Upstream are not equal. Upload is much slower.
- Low or no CIR (Committed Information Rate). This means that as traffic across the Telco switch increases your data could in effect, be locked out, until call volumes and other traffic subsides.
- Downtime after line failure could be days compared to less than 4 hours with optical internet
- Reliability and potential down time issues makes DSL a very risky choice for mission critical systems unless backup / fail over links are put in place.

GREATEST PERFORMANCE (SPEED) :

Optical Fibre is the only technology that can provide high speed SYMMETRICAL bandwidth. Symmetrical means that your download speed is the same as your upload speed.

<u>Technology</u>	<u>Receiving Speed (download)</u>	<u>Sending Speed (upload)</u>
DSL	up to 6 Mbps	up to 0.8 Mbps (Low Speed Internet)
OPTICAL FIBRE	10 Mbps	10 Mbps

DSL speed is always an approximation and will vary depending on your site's physical distance from the closest Bell Central Office (CO). The quality and speed will also be influenced by the quality of the Bell's legacy copper network in the area. If the network is dating in your area, chances are that your DSL signal will be weak and unstable.

Considering that nature of your business, your multi-site topology, the type of software that you are using, size and type of files that are being exchanged and the possibility of having VoIP telephony; optical fibre internet is the only option that we would recommend.

Using DSL would simply result in poor and unstable telecommunication services : slow emails and transfer of files, dropped VoIP telephone calls, internet congestion during peak periods, reduced productivity, etc.

SOLID BUSINESS CONTINUITY :

Optical fibre is extremely robust and therefore we can guarantee an uptime of 99.9%.

Light is travelling in optical fibre making this technology totally insensitive to electromagnetic noise, rain and humidity.

Copper network used to deliver DSL internet are sensitive to all those phenomenon.

If a DSL connection needs to be repaired it will generally be taken care of within a period of 24-48 hours. Fibre is repaired within a maximum period of 4 hours !

PRIVATE NETWORK ADVANTAGES :

A private OPTICAL WIRELESS network, as the one we designed for you (see attached PDF) offers numerous advantages for your business :

- **Simplicity** : All of your locations behave as if they are all on the same local network (LAN) so that you don't need to setup and manage complex VLANs or VPNs;
- **Cost Effective** : With an Optical Fibre service, you can lower your overall equipment costs: native Ethernet eliminates costly SONET interfaces or routers altogether;
- **Flexibility** : Because of the scalability of fibre optics, you won't have to worry about outgrowing your connection. As the demand on your network increases, you can modify your bandwidth requirements quickly and easily;
- **Reliability** : an Optical Fibre is backed with strong SLAs (Service Level Agreement). You receive guaranteed performance and dedicated bandwidth when you need it.
 - Wireless connectivity is available near the trailer park;
 - We can easily move the service to another building in the area if need be;
 - Dramatic cost savings versus a managed service;
 - A secure infrastructure that isn't shared with other organizations;
 - More secure because instead of exchanging private information on the open internet cloud, your sensitive information is kept within your private network;
 - Economies of scale. With a fixed cost (dark fibre lease and optical equipment), capacity can be expanded with no increases in monthly operating costs;
 - Allows you to centralize all your servers at your Head Office;
 - Allows you to centralize your core applications and files at your Head Office;

- Allows you to centralize your internet feed. All the sites get their internet (bandwidth) from your Head Office
- By centralizing your internet at your Head Office you only need to purchase 1 firewall instead of buying one for each site;
- Allows you to create VPN remote connections to each site. Without optical fibre, the speed would be too slow for VPN (upload is too slow on DSL).

Note : Installing DSL in some sites would break the chain and would compromise the Private Network topology and its associated benefits.

SAVINGS :

A private network infrastructure works on a fixed rate model for the monthly dark fibre cost as well as the upfront capital cost for the equipment to light the fibre. Once the private network is in place, capacity can be expanded with no additional increases in monthly operating expenses.

You also save on networking equipment because everything is centralized at the head office. Therefore you don't need as much equipment at each site.

You will also save on maintenance fees.

Productivity will be much better because you won't have to spend time waiting for the systems to respond (real time)
