

Critical Networks Failures – Fibre optic

Today's carrier and LAN fibre optic cables are being asked to deliver more bandwidth than ever before. The delivery of business critical applications is reliant on the simple fact that the physical layer performance is effective.

The commercial pressure to deploy networks cost-effectively has in many instances caused quality to be overlooked. When this happens, initial deployments may operate effectively, but over time we are starting to see that more and more networks suffer quality issues. This is especially the case during transmission system upgrades (i.e. 1 G to 10 GB/s).

The focus on cost-effective deployments needs to be reassessed. No longer should price be the only critical factor in network build partner selection. Celemetrix has recently worked with several major Telecommunication organisations to identify issues with service degradation due to poor fibre optic link installations. These outages have caused multi-million dollar SLA events.

Modern carriers rely on cables for the generation of millions of dollars of revenue per day. Undertaking professional installation activities with limited knowledge, experience and fault resolution skills has resulted in the industry experiencing an approximate 38% increase in unplanned network outages. Regardless of the increase that has occurred in the carrier space we are also experiencing similar issues in the data centre and LAN/MAN markets.

Outages seem to be as a result of several factors including:

- Poor cable selection
- Poor termination and joint selection
- Infrastructure installed by poorly trained personnel
- Execution of poor test and validation procedures
- Incorrect interpretation of test results
- False/fraudulent report generation
- Unknown network standards

Too many times we see companies approach singlemode fibre installation with the same procedures as they would undertake to install CAT5/6 or multimode fibre. Unbeknown to many is that singlemode fibre is far less accepting to poor installation practices than multimode. We have unfortunately seen many companies crippled under the weight of penalties when deploying singlemode infrastructure for the first time.


Do not underestimate the technical demands of installing singlemode cable!



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As a result of the increased industry failure rate associated with singlemode infrastructure and the critical nature of the deployed transmission systems, many carriers/infrastructure owners are starting to undertake detailed audits of installed infrastructure.

The industry is far more aware today of test procedures, result interpretation and fault analysis than many believe. As such, many organisations trying to pass faulty infrastructure are being caught out and issued with significant penalties.

Installation short cuts are more likely to be detected than ever before.

Standards: New quality assurance procedures and limitations are being enforced throughout the industry. Many organisations are potentially unaware of these changes and validate infrastructure to standards that do not meet the client's performance requirements. We encourage infrastructure installers to ensure that validated and documented performance standards are understood before commissioning and accrediting infrastructure.

Skill Development: We operate in a changing environment. It is sometimes hard to keep pace with changes, but the impact of not keeping informed of these changes can be detrimental to your organisation. Many years of hard work can be torn apart by the acceptance of faulty infrastructure. We suggest that industry forums and specialised training activities be part of any company's development plan to ensure that key skills are understood and deployed throughout your organisation. This prevents:

- Project rework
- Lengthy fault deterministic time frames
- Degradation of company reputation
- Imposed financial penalties

In summary, the industry is experiencing an increase in unplanned network outages. Combine this with an increase in the value each link can generate and you start to understand that we will soon reach a point where professional cable installers are separated from the pretenders.

Celemetrix is an independent company offering a range of advisory services to organisations to assist with diagnosing network degradation issues and presenting solutions for repair.

For further information please call Celemetrix's Professional Services division on 1800 256 838.



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