WHITEPAPER

The backbone technology, a choice that matters!

MPLS-TP, IP/MPLS, CE, IP/ETHERNET...
YOUR CHOICE MATTERS

These days, there is a lot of debate about whether or not the technology behind a communication network matters. Does it matter whether you choose MPLS-TP, IP/MPLS, Carrier Ethernet, IP/Ethernet?

The fact is, choosing the right technology matters more than most people think. It is obvious that many companies still make the wrong technology choice with disastrous results.

Why does choosing the right technology matter? Because there is a direct link between the MPLS-TP, IP/MPLS, Carrier Ethernet, etc. and your company.

Technology will affect the OPEX

The business model of IT and Carrier Ethernet are based on continuous revenue from its customers. The initial cost is just the tip of the total cost iceberg over 5, 10, or 15 years. This does not fit the business models of Electric Power Utilities and Rail companies. Renewing a data communication network should be a capital cost and include of up to 15 years of warranty.

Technology will affect the workforce

The workforce of the operational division of the company have been around for many years and are skillful multi-taskers. It does much more than just maintaining communication equipment. Additional people would need to be hired to maintaining the data communication equipment. Additional people would have to be hired when data communication maintenance becomes so complicated and short-lived that it becomes a focal point in the operational organization. The network must be designed in a way to be controlled and maintained by the current workforce, without hiring additional employees.

Technology will affect your critical applications

Keeping trains running and the lights on are pivotal in your organization. The network runs like a lifeline through the operational division for the purpose of the critical applications. For example, electric power relays communicate with one another and need to react under one-half power cycle. Delays due to the slow reaction of a protocol-based network or network outages are detrimental to the grid's expensive components. We would rather not elaborate on all the possible horror stories when signaling fails in an operational train environment. The network needs to be there at all times and under all circumstances.

Technology will affect the image of your company

Outages, complications, and extra expenses due to the wrong technology choice reflects badly on the decision maker and on the company he represents. Choosing a telecom vendor for your operations should not be taken lightly. It should not depend on the size of the company's IT department or on the carrier market technology. Nor should it depend on the complicated protocols predominant in office, Internet or data farm environments. These will never be used for operational telecom, since they are very hard to implement and maintain.

WHY CHOOSE MPLS-TP?

MPLS-TP fits the purpose

Do not just rely solely on multi-billion companies whose bread and butter come from the carrier or IT market and for which rail and power are just sideshows. MPLS-TP fits the ultimate goals of Rail and Utility companies. Hitless switchover times, advanced monitoring tools and specific communication protocols all serve those specific niche markets. Going from Time Division Multiplexing to Packet-based Networks is a smooth transition thanks to MPLS-TP for the operational people who have been around for decades.

MPLS-TP is an open standard and an extension on IP/MPLS who has been around for decades

Back in 2010, OTN Systems took the right decision to choose MPLS-TP as the backbone technology to design a telecom product for extreme mission critical networks. Bidirectional paths, independency between control plane and data plane, software controlled network, OAM features, the ability to effectively handle large multipoint networks… are just a few of the reasons. Each one of them, in and of themselves, a subject for a separate article.

MPLS-TP is versatile and can be used as a basis for other technologies

Recently, in a paper written by a vendor, the vendor asked, "Why use Carrier Ethernet technology on top of MPLS-TP? Why not use Carrier Ethernet to start with?" The answer is very simple, because we can! MPLS-TP is so versatile that it can be used to integrate top features of other carrier technologies without losing its own advantages. This way XTran has integrated ERPS, L2, L3, SyncE, IEEE1588, zero-packetloss-protection. It is the perfect backbone technology to integrate TDM connections and keep delay and differential delay under full control.

MPLS-TP is future-proof, it is here to stay

MPLS-TP has become an unstoppable backbone technology and is being implemented on a worldwide scale. Hundreds of Power Utilities and Rail Companies have decided to take advantage of the purpose-built network devices.

MPLS-TP is software driven

The operator is in control and knows at all times how the data is propagated throughout the network. There is no guess work based on thousands of lines of CLI code. The network management software, TXCare, pushes the network configuration inside the devices, and every imaginable scenario is pre-programmed. The dataplane doesn't depend on the management plane. The software can be shut down once the network elements are programmed.

MPLS-TP does not depend on protocols but can be fully static

Critical application does not depend on control plane capabilities. A chain is only as strong as its weakest link; very often the dependency on IP in a backbone network is the breaking point of that network.

MPLS-TP is access-friendly

The habitat of MPLS-TP works as an aggregation device as well as an access device. Power and Rail specific interfaces for RTU-SCADA communication, Protection Relays communication, CCTV, DATA transfer, voice and turns XTran into the perfect access box.

MPLS-TP easily integrates L3 and results in greater flexibility

Customer equipment may expect the network to react to Layer 3. Running L3 on top of MPLS-TP and in combination with a software-controlled network with step by step wizards is the way forward. Since MPS-TP is by nature a L2 network, XTran can easily mix L2 and L3 services were needed. It provides the opportunity to create layered structures, for example a L2 edge network combined with a L3 core network.

MPLS-TP facilitates redundancy

Redundancy is key in mission critical networks. The standard facilitates this by redundant paths, detection methods, Operation Administration and Management tools (OAM). MPLS-TP has become a trusted transport option for convergent networks that require guaranteed levels of service and high availability.

We highly suggest you do the research and know what you are getting – sales people may be smooth talkers with their lovely stories and white papers, technology always works on paper. We challenge you to look beyond this so you know you are choosing the right technology for your business.

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