

Get the most out of your fiber infrastructure

The Transmode TS-Series

 **transmode**



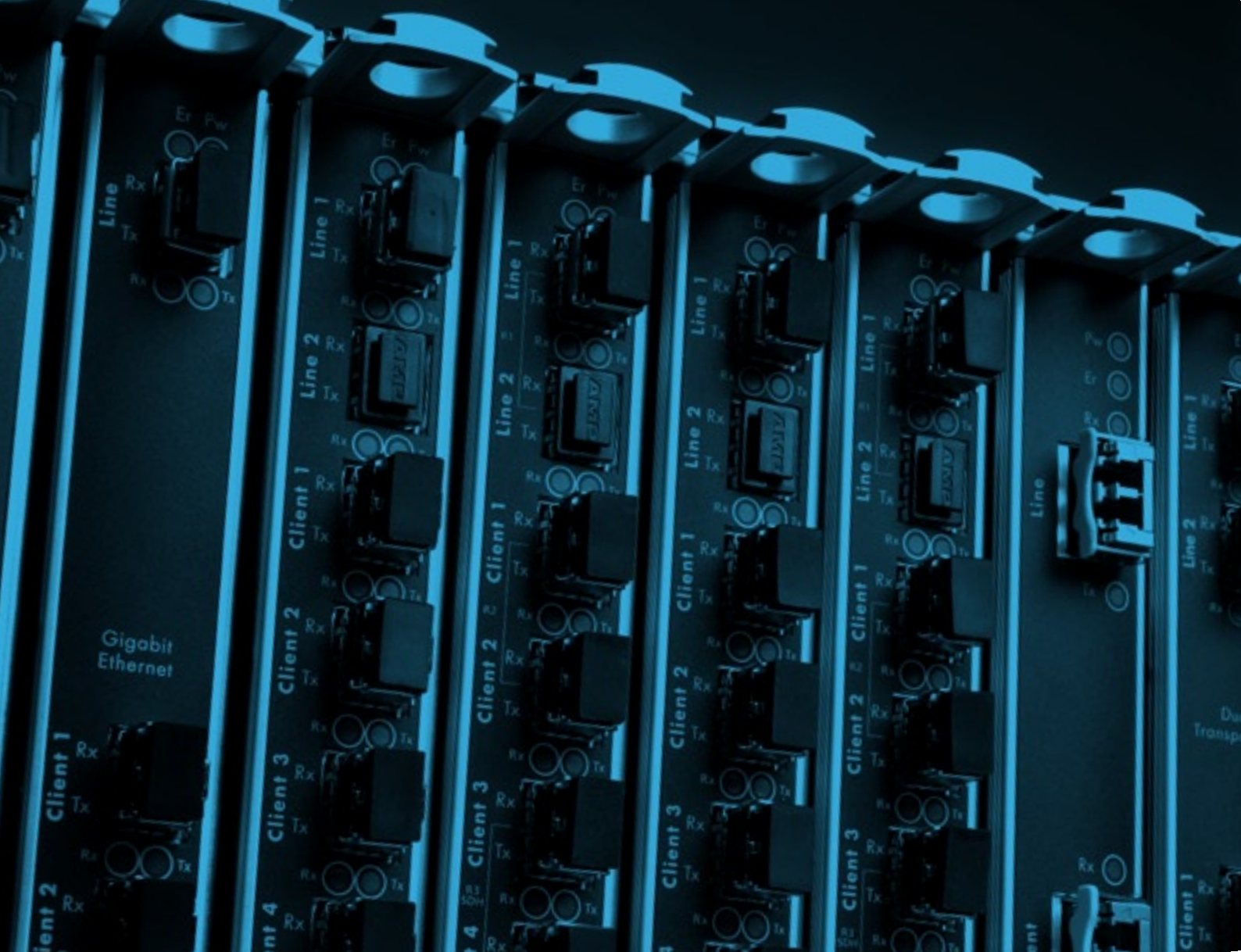
WDM – Technology that solves your capacity problems

WDM is a standardized and well-proven technology. It's widely used by large telecom operators and service providers to increase capacity in metro networks. WDM is also well suited for a range of enterprises or smaller ISPs as it offers the opportunity to capitalize on this leading technology in metro network solutions.

Transmode has taken an additional step towards increasing the efficiency of WDM technology. By innovatively transforming many types of traffic into one wavelength, we make even better use of the capabilities presented by WDM. We call it the intelligent WDM (iWDM™) concept. iWDM offers powerful and cost-efficient solutions that use existing technology – in a smarter way.

More and more enterprises, public and private institutions are realizing the benefits offered by WDM technology in terms of transporting data from A to B. This could mean the expansion of data transport capacity between different company hubs, mainframes or servers. Or addressing specific security aspects.

If the decision is between renting more fiber or better utilizing existing fiber, then Transmode can make that choice easy.



Just pay for what you need

Transmode's TS-Series offers a CWDM and DWDM solution with all the functionality needed for the cost-efficient transmission of high-bandwidth traffic. The modularity of the solution and its flexible plug-in units allow a step-by-step growth in both functionality and capacity.

Virtually all traffic formats – Gigabit Ethernet, SDH/SO-NET or Fiber Channel – are cost-efficiently transformed into wavelengths and transmitted through a network. As many of the boards in the TS-Series support multiple traffic types in one unit, called multi-rate boards, simply deploy the number of boards needed to cover the required amount of traffic. And stop worrying about traffic types.

As a network grows, or requirements in functionality expand, different types of chassis and traffic boards are available to accommodate changing needs.

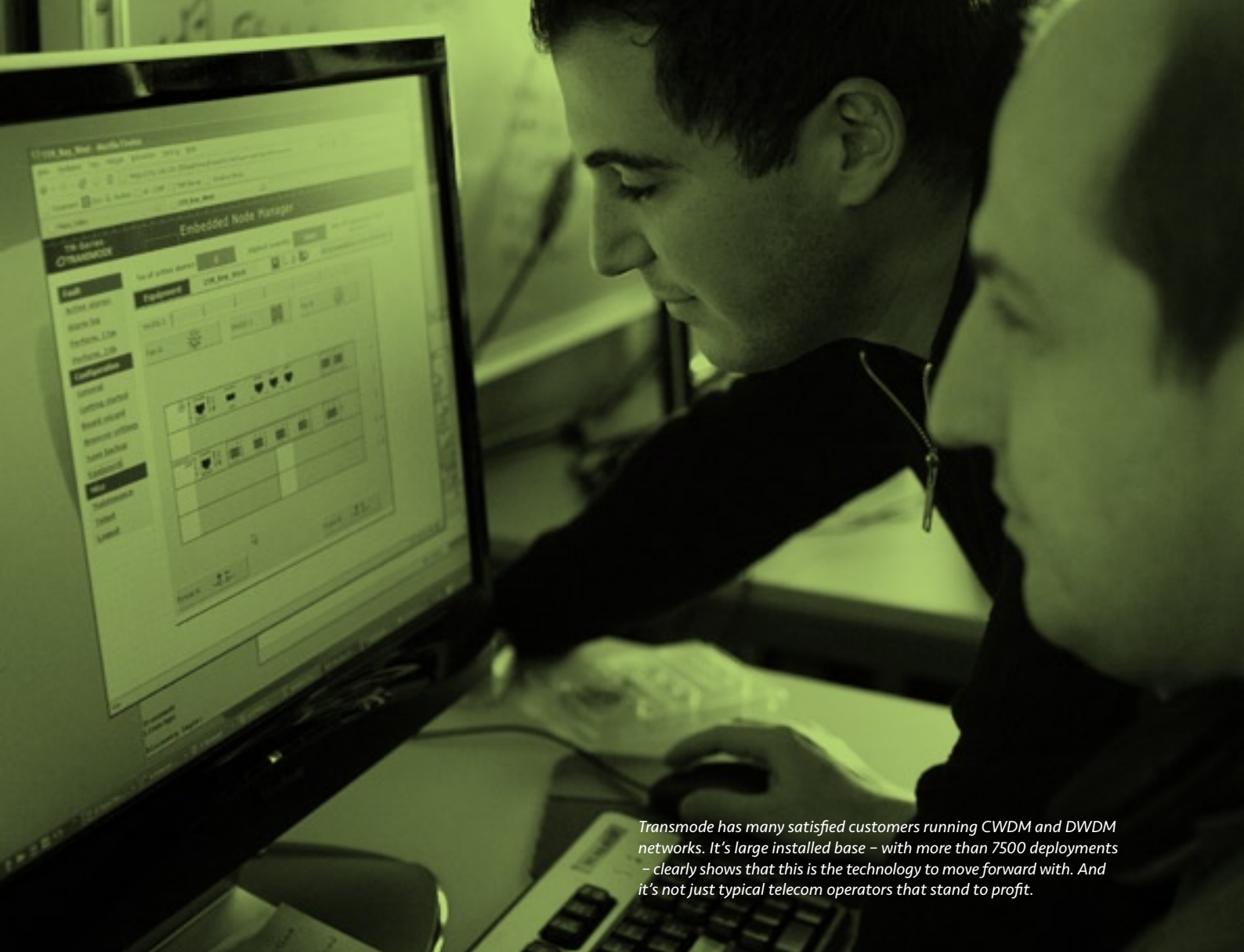
Moving from CWDM to the more capable DWDM technol-

ogy is easy – and made without disrupting the traffic – thanks to the modularity and scalability offered by the pay-as-you-grow architecture.

Low cost per channel

Measuring the cost per channel is the best way to indicate the total cost of operating a transport network. Transmode's TS-Series is cost efficient in many different aspects. To begin with, it's a small and compact system with a low initial investment. Again, the iWDM concept results in the intelligent use of an existing infrastructure while existing traffic types are easily transported over the WDM technology. This means a solution that requires less space, and reduces the critical factor of site rental costs.

Low power consumption is another important aspect of maintaining low costs. Compact solutions require less power



Transmode has many satisfied customers running CWDM and DWDM networks. It's large installed base – with more than 7500 deployments – clearly shows that this is the technology to move forward with. And it's not just typical telecom operators that stand to profit.

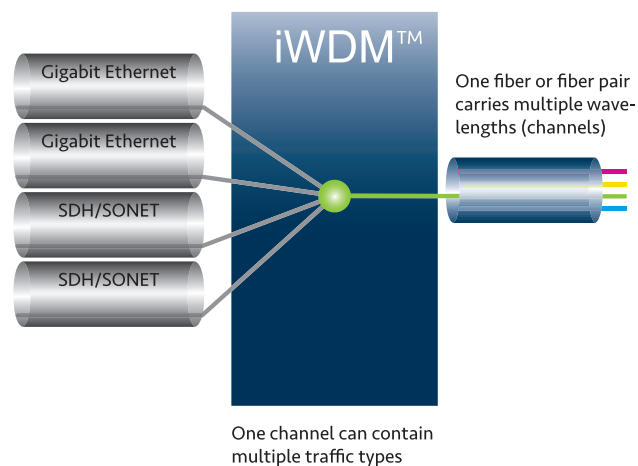
than larger ones. Consequently, site cooling is drastically reduced. Transmode's commitment to Low Power Design is a proof point that our products and solutions have low power consumption today – and tomorrow.

Finally, our various chassis and boards offered enable the perfect match of size and functionality. This means that there is no need for "over-sizing" a network, a fact that avoids unnecessary investments and unnecessarily high power consumption.

Easy to install, easy to use

iWDM allows for automated node provisioning and the automatic detection of protocols. This eliminates the need for manual provisioning and reduces the need for expert handling. And by replacing manual with automated configuration, the solution can be up and running within minutes.

Plug-in slots and robust hardware account for easy component handling and they reduce the risk for costly and time-consuming damages during installation.



Thanks to Transmode's superior utilization of fiber capacity, where several channels share the same fiber, the cost of transporting data is dramatically reduced. We call it the iWDM concept. In this example, a channel carries 2 x Gigabit Ethernet and 2 x SDH traffic and is transported over fiber together with several other channels.



Small words that make a big difference:

WDM: Wavelength Division Multiplexing. A technology that multiplexes multiple optical signals on a single optical fiber by using different wavelengths (colors) of a laser light to carry different signals. (Wikipedia)

Wavelength: In the fiber (single or fiber pair), a wavelength represents one color of light. In a Transmode network a wavelength can transport many different traffic types, and to do this we use the iWDM concept. 80 wavelengths, each with multiple traffic types, can be carried in the fiber. Another name for wavelength is channel.

CWDM: Coarse Wavelength Division Multiplexing

DWDM: Dense Wavelength Division Multiplexing

Transponder: An automatic device that receives, amplifies and retransmits a signal on a different frequency. (Wikipedia)

Muxponder: A combination of a Multiplexer and a Transponder. A Multiplexer selects one of many digital input signals, and outputs that into a single line. (Wikipedia)

Solution facts:

Transmode's TS-Series is optimized and specially designed for the challenges of metro applications. Available in two different chassis, TS-1100 and TS-100, the TS portfolio involves the following families of traffic boards:

Family of Muxponders

- 5400
Combining 2 x Gigabit Ethernet signals into one 2.5 Gigabit line signal
- 5500
Combining 4 x low speed protocols into one 1.25 Gigabit line signal
- 5800
Combining 4 x Gigabit Ethernet signals into one 4.25 Gigabit line signal
- 5810
Combining 2 x Gigabit Ethernet and 2 x STM-1/4 signals into one 4.25 Gigabit line signal

Family of Transponders

- 7400
For 1/2/4 Gigabit/s Fiber Channel
- 7700
For 2.5 Gigabit/s all traffic types
- 7720
For Dual 2.5 Gigabit/s all traffic types
- 7900
For 10 Gigabit/s all traffic types



TS-1100



5400 5800 5810 7720 7900

In addition, the TS-Series comprises a number of pluggable optics (SFPs and XFPs), filter types and an amplifier.

Transmode is a leading provider of optical networking solutions for the transport of data, voice and video traffic. Our solutions, based on WDM-technology (Wavelength Division Multiplexing), boost the capacity and flexibility of regional, metro and metro-access networks. They also cut costs, simplify deployment and operations and enable new Ethernet-based services.

Together with our global organization and a network of partners, we help our customers radically improve their service levels and competitiveness. Today, our customer base consists of more than 200 network operators, service providers, large enterprises and public institutions across Europe, Asia and the Americas.