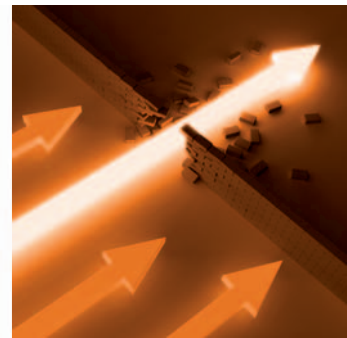
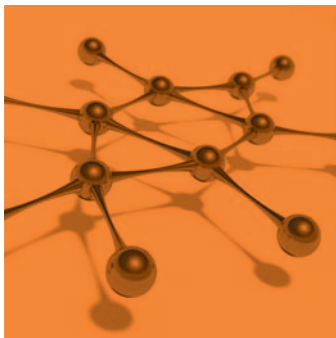


## User Report



Standardised infrastructure for voice and data





Figure 1: EWE TEL's headquarter in Oldenburg

## Introduction

EWE TEL is a north German telecommunications service provider based in Oldenburg. The company has expanded its voice and data infrastructure with KEYMILE systems. EWE TEL opted for KEYMILE's compact and flexible multi-service access platform MileGate. MileGate enables EWE TEL to migrate networks from TDM to IP-based data transmission and therefore standardise voice and data services infrastructure.

In the past, consumers wanting a new telephone line or Internet access had little or no choice. But these days are long gone. Nowadays, residential and business customers can choose between various providers virtually everywhere in Germany. Many of these providers are subsidiaries of energy and utility companies and were launched at the same time as the German telecommunications market was opened up in 1998. The same applies to EWE TEL in Oldenburg, a wholly-owned subsidiary of EWE AG (previously Energieversorgung Weser-Ems). At the Oldenburg headquarters, up until today the company uses the telecommunications network that its parent company deployed for internal communications for decades. Since the end of the 1990s, EWE TEL has been expanding its own telecommunications infrastructure for external customers. And this expansion strategy has continually proved a successful one.

Since August 2008, the significant investment made by the network operator in innovative technologies has been plain for any visitors to this university town to see. Excavations are going on everywhere. By 2013, the telecommunications company wants to lay 1,800 kilometres of conduits in Oldenburg's pavements. The goal is to be in a position to flexibly and cost efficiently lay fast Internet connections in the future. As a result, it will be possible to lay fibre optics right into buildings. And Oldenburg will have one of Germany's most advanced networks. Despite extending the fibre optic network, the majority of EWE TEL's competitors still transmit data and voice on traditional copper wire in the last few metres to the building.

## Communications services

Via their own network infrastructure, EWE TEL supplies the business region between the rivers Ems and Elbe, as well as parts of Brandenburg with their advanced telecommunications services. Target customers are SMEs, large companies, public institutions and residential customers. EWE TEL offers customers a complete range of services such as DSL, fixed line network telephony and mobile telephony. It also provides high quality business customer services, such as connecting up different branches of a company via virtual private networks (VPNs). The telecommunications

provider's portfolio includes Triple Play packages for residential customers. These offerings encompass the whole range of services for voice, Internet and television.

Due to the swift development and fast growth in many market segments and regions, the telecommunications infrastructure requires constant expansion and modernisation. Convergence of voice and data infrastructure, where all services are transmitted via Internet protocol (IP), is an essential part of the process.

When the time came to expand and modernise the voice and data infrastructure, EWE TEL drafted a profile for access technology and obtained quotes from various manufacturers. After scrutinising the quotes, the company decided to choose KEYMILE and its multi-service access platform MileGate. A choice that proved to be a wise one. "In KEYMILE, we have a partner that can help us implement our own requirements and technical concepts", says Frank Ruloffs, Head of Networks at EWE TEL in Oldenburg. "It was frequently no problem for us to suggest customised requirements as regards our technical network infrastructure while the products and solutions were being developed. In this area KEYMILE was an impressive partner from the beginning. KEYMILE looked after us very well at all levels, was very flexible, quick to make decisions and stuck to deadlines".

## TDM and IP – two worlds merge

The focus was placed on transmitting telephony, both via traditional TDM technology and packet-based IP technology, with a single access system. The way telephone calls are transmitted is different in both technologies. In traditional TDM transmission, calls are transmitted to a V5.2 interface. In VoIP on the hand, these calls are split up into signal and voice data and forwarded to a softswitch. Both alternatives must be available in the interests of seamless migration.

By using these two transmission techniques simultaneously, EWE TEL can react flexibly to parameters at the access point. If a local exchange already exists there, it can still be used via the V5.2 interface. If a new area is connected up on the other hand, no new local exchanges have to be set up any more. In VoIP, voice data is changed via the IP data stream for

transmission and forwarded to the central softswitch. EWE TEL can close existing local exchanges at any time, dismantle the TDM technology and integrate TDM subscribers to the IP network. This creates a standard network for voice and data.



Figure 2: MileGate in a street cabinet

MileGate provided the perfect response to these demands. The MileGate subrack's hybrid backplane can forward native TDM data and IP data with the GbE star. MileGate connects telephony subscribers to the network via a gateway. Using a firmware update, this gateway can be expanded from a simple V5.2 interface to an SIP or H.248 voice media gateway. As a result, all functions required are available in MileGate without the hardware having to be exchanged.

This solution does not just benefit EWE TEL. By integrating the voice gateway to the access point, subscriber access does not change. All subscribers connected can continue to use their terminal equipment. In contrast to a purely Triple Play solution, no more devices need be purchased for the analogue or digital telephone lines. All customers can still use their familiar phones, faxes and even modems without compromising on quality.

EWE TEL's aim is to set up a Next-Generation Network. MileGate extends this exclusively IP network by providing traditional services too that can then be easily converted at a later date. This is an affordable way for the operator to migrate voice packages to VoIP technology.

## Harmonisation of the networks

Thanks to its robust design, MileGate can be used in installations rooms and outdoor housings. This feature makes EWE TEL flexible in designing the network topology. Making the central subracks and the media gateways redundant protects the system from failure and guarantees very high levels of availability. EWE TEL needs such availability to be able to offer end customer services in carrier grade quality (99.999% availability). Multi-service capabilities make providing all subscriber services via a single network node possible. The advantage to network operators: they need fewer access platforms, so fewer replacement subracks have to be kept in stock and employees require less training. As a result, complex tests are unnecessary to ensure the interoperability of the different platforms. All these factors cut expenditure considerably.

In addition to providing traditional voice services, traditional data services are also important. This applies in particular to business customers who want to continue to use their existing telecommunications equipment, such as telephone systems for example. The CESoP (Circuit Emulation Services over Packet) functions integrated in MileGate make traditional SDH network technology in the backbone, as well as TDM technology in the access network, superfluous and enable the usage of standard Ethernet technology. The CESoP gateway card converts a traditional TDM data stream into Ethernet packets and transmits the TDM data via a packet-based network. Therefore, network operators do not need to operate Ethernet and TDM transmission networks at the same time, but can still offer traditional services via a single All-IP network. Traditional end customer services are therefore available as usual, but within the network EWE TEL uses advanced IP infrastructure.

With the extensive multi-service capabilities KEYMILE's MileGate offers, complete migration of the access network to an All-IP network is possible. For each access node, the operator can decide whether and till when traditional services will be offered - not just voice, but data services too.

"KEYMILE's solution gives us the best of both worlds. We can implement traditional services and modern IP-based services on the same access platform", explains Frank Ruloffs.

"Another key point was that by harmonising the networks, management is easier and we save running costs. Which is an essential factor for network operators", he comments. "We have now gained in-depth experience with MileGate in operation and are impressed by its extreme flexibility and reliability."



Figure 3: EWE TEL's network management centre

### Publisher

KEYMILE GmbH

Wohlenbergstrasse 3  
30179 Hanover, Germany

Phone +49 511 6747-0  
Fax +49 511 6747-450  
Internet [www.keymile.com](http://www.keymile.com)  
Mail [info@keymile.com](mailto:info@keymile.com)