

Broadband Networks of the Future Fibre to the Home

Communication infrastructure for telecommunications



How fast is your network?



New network generation meeting the highest requirements

The hunger for ever more bandwidth is growing explosively. In the past, network operators thought very carefully about where specifically it made economic sense to expand their networks with fibre optics. Some years ago, there was lively discussion worldwide whether and when fibre optics might even be installed in homes. Today, the only question is when the old copper networks will be replaced by modern fibre optic networks. Many network operators have already started replacing them.

Almost daily, new ICT innovations requiring more and more bandwidth come onto the market. Popular on-line offerings such as movies, music and games can be played on more and more end user devices. Triple Play is already reality. This massively increases broadband demand. The main drivers are video applications, such as the online portal YouTube and high-definition television (HDTV). Additional drivers for more bandwidth are Voice over IP (VoIP), the transformed telephone market, video on demand and the increased desire of employees to work at home.

Unlimited bandwidth is thus no longer demanded only by a number of companies: It has also become an important need of private consumers. And so, in addition to a good transportation infrastructure and attractive quality of life, fast networks represent an important argument for cities and municipalities in promoting their locations.


For the environment

Reduce CO₂ emissions!


Increased traffic in cities and metropolitan areas is lengthening and complicating the daily trip to work. More and more employers are letting their people also do their work from home. But for them – and for the many external sales and service representatives – a good communications infrastructure is needed so they can remotely access company data and their applications at any time.

The Internet is becoming more and more intelligent. At least since Web 2.0, many institutions and government offices have been considering performing their services through interactive portals. Electronic voting and filing out tax returns electronically are two examples of how e-Government can simplify our life in society and make it more efficient. e-Health offers especially needy people a good opportunity to get help without major inconvenience. Online chats with a nurse are in many cases more effective than long drives and waits.


A good broadband infrastructure can contribute to saving energy in many other areas as well. For example, energy needs can be made more efficient through intelligent controls of the building management system. Smart Building and also Smart Metering projects can hardly be done without fast networks.



Remote workstations



e-Commerce (e-Health, e-Government)



Smart Building (building automation)



Smart Metering (electricity, gas, water)

Your competent partner for the network infrastructure of the future

Our thoughts and actions are directed toward your success and the security of your investment. As innovation leaders, we create complete solutions for future-oriented infrastructures that offer unique value for the money. Every customer-specific system solution is based on many years of experience and the proven know-how of our engineers and technicians.

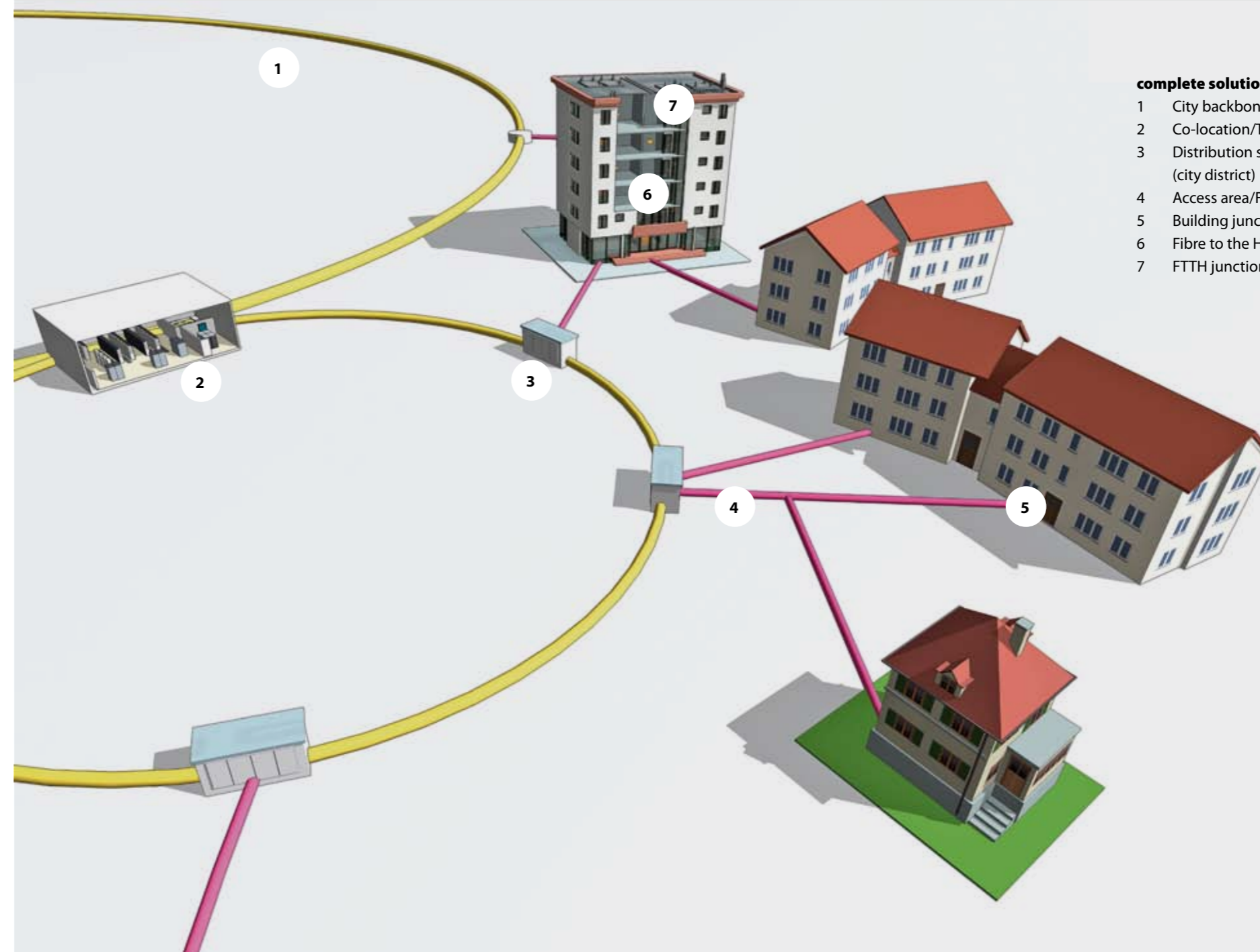
For all customer-specific applications, we supply solutions from a single source. Throughout the entire process – from our initial discussion to planning and installation to system maintenance – advice, training and support are essential parts of our services.

Dätwyler Cables always has all systems in stock and so guarantees short delivery times. We answer both simple and complex questions quickly and competently and with the future in mind.

Year after year, we invest in ever better materials and process technology, production tools and test methods. And so our system solutions are better than the applicable requirements and repeatedly set new standards. The important functions that our solutions must fulfil in practice demand the highest degree of safety and reliability. And so we measure each product against strict quality standards before it leaves our company.

For us, uncompromising quality is our employees' constant assignment and a promise to our customers. Complete solutions from Dätwyler Cables

Applications



complete solutions from Dätwyler Cables

- 1 City backbone
- 2 Co-location/Telehouse
- 3 Distribution systems in the neighbourhood (city district)
- 4 Access area/Fibre to the Building (FTTB)
- 5 Building junctions
- 6 Fibre to the Home cabling (FTTH)
- 7 FTTH junctions

Good reasons for modern broadband networks



Voice over IP telephony (VoIP)

VoIP technology lets the service provider transmit telephone services over the IP infrastructure. As a result, the conventional telephone infrastructure (incl. ISDN) is no longer needed. In functional buildings and at home, structured cabling such as the unilan® system is sufficient as feeder.



Digital television

High definition television (HDTV)

High-resolution television and video offer five times more image information. The new technology makes it possible to transmit digital television over IP, over a structured cabling, and makes conventional, rigid coaxial cabling superfluous.



High-speed connections from everywhere

The fast Internet and powerful wireless solutions create high-speed connections into the company network, also for home offices and field representatives. The Xirus WLAN technology from Dätwyler Cables adds modern wire systems to the high-speed cabling portfolio.



e-Commerce applications

Broadband networks open new, more efficient paths for business relationships and for handling public tasks. Cities and municipalities can differentiate themselves through quick and efficient processes and increase the attractiveness of their offerings.



e-Health

Demographic developments in many countries show there is a growing need for communication and assistance offerings for older people. e-Health concepts in Scandinavia and the Benelux countries make clear that a modern broadband infrastructure permits us to take new approaches for this age group.



Co-locations / Telehouses

The rising flood of data must be collected and distributed at central points. As in companies' computer centres, these data can be guided onto the correct paths over modular, flexible distribution systems in the broadband network.



Smart Homes / Smart Buildings

Modern residential and functional buildings use «intelligent» electrical building infrastructure to control and monitor the connected devices securely and in a way that optimizes costs. For many years, Dätwyler Cables has offered appropriate system solutions for safety wiring and building automation.



Energy efficiency

Compared to copper links, 14 fibre optic links with 10 GbE save as much energy as a single-family house uses per year. And so the optofil® fibre optic solutions from Dätwyler Cables not only open many new application opportunities for operators and users, but also help save energy in operation.



Smart Metering

Municipal utility companies and local energy producers, for example, also use modern fibre optic infrastructure for remote reading of electrical, gas and water meters. New EU regulations regarding energy efficiency support this process.



Traffic control / monitoring

Cities and municipalities can also use their broadband networks for expanded services such as traffic control and surveillance. The optofil® fibre optic systems have already proven themselves many times in these areas.

Invest for the long term!



Copper cable networks have served reliably for decades. And so the migration of old data networks to modern fibre optic technology is a once-in-a century investment! Still, it's essential for investors to keep their CAPEX (capital expenditure) as low as possible. This holds for all phases of the infrastructure lifecycle: from the initial concept to planning and design, implementation and construction to long-term operation of the next network generation.

Intelligent and easily adaptable fibre optic systems and complete solutions for the new cabling infrastructures offer you decisive advantages and a sustained cost-benefit impact.

Comprehensive solutions also mean that the technical specifications of the various network layouts no longer need to be viewed in isolation but as part of a modern, holistic concept. Selection of fibre optic types for backbone, city, access and FTTH in-house cabling systems must be coordinated with each other.

Ideally, you will acquire the solutions for your broadband network from a competent partner and a single source.

Pay-as-you-grow solutions



High-quality, coordinated system solutions will still offer the necessary stability, reliability, capability and flexibility even decades from now and thus ensure a high degree of investment protection.

In selecting the appropriate systems, investors should consider that the passive infrastructure must support several life cycles of the active devices. Accordingly, sufficient system reserves should be calculated in when planning the network layout.

Besides the task of keeping CAPEX as low as possible, the ongoing operating costs (OPEX, operational expenditure) must also be taken into account in the cost analysis. The dynamic process of winning new customers as well as the ongoing expansions due to new applications are important elements that should be included in the cost analysis.

Dätwyler Cables is pleased to support you in analyzing your costs and show you how your investment in high-quality solutions pays off.

With intelligent cabling concepts as well as modular and flexible solutions, you can contribute to making the operating costs of your new networks simple and efficient. Among other things, Dätwyler Cables can offer you fibre optic solutions that make it possible for you to build your network infrastructure step-by-step.

Summary of advantages

Increase in ROI

- Low CAPEX due to reduction of underground construction and step-by-step expansion of the infrastructure (pay as you grow)
- Optimized dimensioning of the cabling infrastructure

Long-term securing of yields

- Investment protection due to high-quality solutions and corresponding guarantees
- Comprehensive system from Telehouse to your home
- High modularity and scalability of the infrastructure

Plan for the generation after next



In planning new broadband networks up to and including Fibre-to-the-Home solutions, the responsible planners and departments are frequently confronted with a number of demands. These include, among others:

- innovative concept
- high future security
- flexible and adaptable infrastructures
- cost-effective systems
- high scalability and standardization
- economical and easily implementable expansion possibilities
- reduction of digging (CAPEX)
- low operating costs in the long term (OPEX)

In addition, many network operators grapple with the question of how the existing network, which was constantly expanded and modernized over the last decades, can continue to be used for the next network generation, if necessary.

Bringing all these requirements and aspects under one umbrella seems at first to be an almost insoluble task. But it's not impossible!

Take advantage of our experience!

Dätwyler Cables has rich experience in fibre optic networks and can assist you with the know-how it has built up over the years.

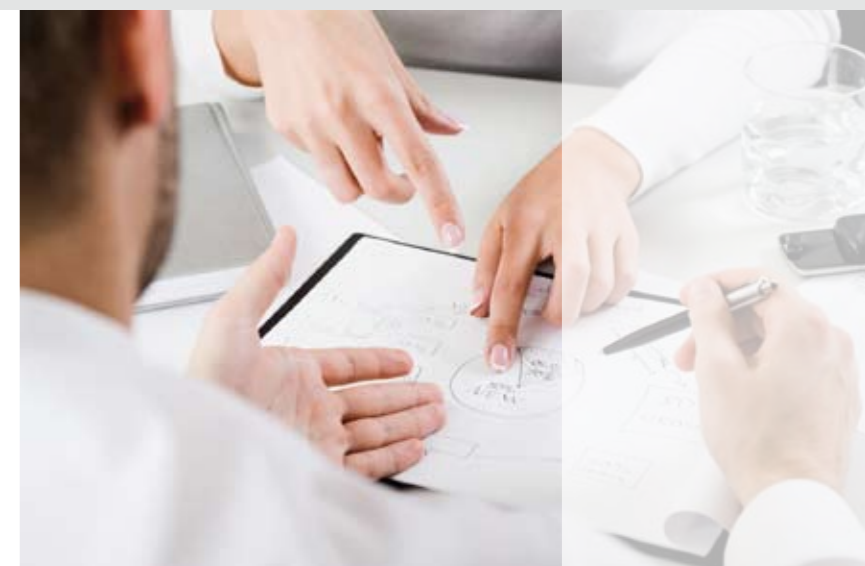
We would be pleased to help you with the precise analysis of your existing network infrastructure. With a rough concept, we will show you how your network can adapt to the current requirements.

Revision of existing directives and requirements lists and preparation of new specifications are also among our core competencies.

For new technologies, such as cabling fibre optic networks into the home (FTTH), we will assist you in implementing pilot projects and support you from planning through implementation.

Our risk management ensures that the costs and building time of your construction project stay within the planned framework.

Take us at our word!



Summary of advantages

Minimum planning effort due to

- preparation of analyses
- preparation and revision of directives and requirements lists
- competent advice and support with planning, migration concepts and green-field concepts
- know-how for appropriate products and system solutions

Reduction of risks from

- support with pilot projects
- construction inspections
- risk management
- time management

By plan and with method

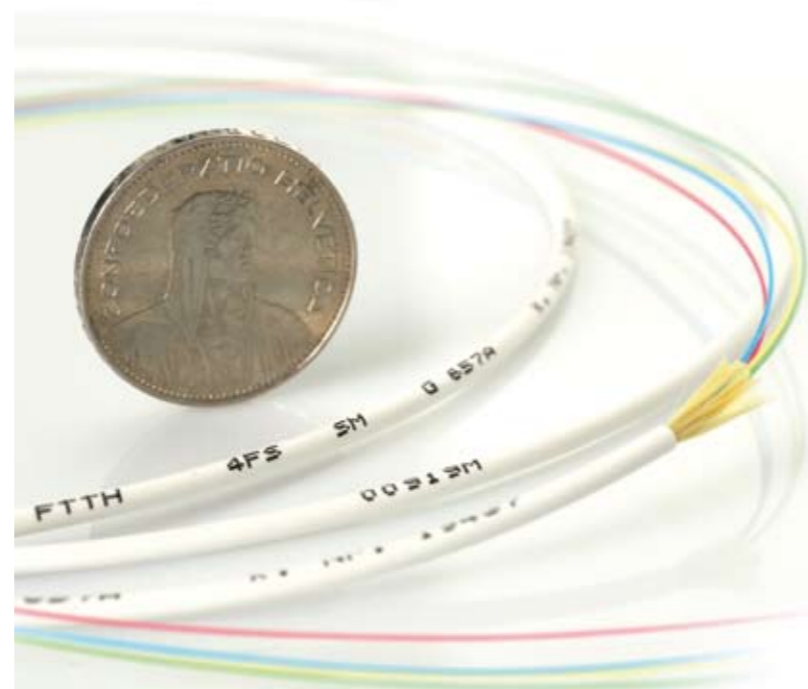
In preparing new broadband networks and expanding existing ones, the focus of economic efficiency calculations is mostly on installation costs. No wonder! Ultimately, underground construction, makes up the lion's share – around 80 percent – of the total costs for the passive fibre optic infrastructure.

The project-implementing companies should therefore rely on tested, standard-conforming and installation-stable complete systems, which they can procure from one source, if possible, to take advantage of all cost benefits.

Materials must always be selected based on the installation method. Dätwyler Cables has developed concepts for various installation methods, which serve as a foundation for working out a cabling solution for broadband networks. Concepts exist, among others, for:

- horizontal drilling (drilling technology)
- cable x: Use of the existing infrastructure (the copper core is pulled out of the old cable and replaced by fibre optic cable)
- fibre optic cable in wastewater channels

The optimal use of existing pipe systems is a further important criterion when selecting the right cabling solution. Together with customers, Dätwyler Cables has constantly further developed corresponding concepts.



Installation concepts with added value

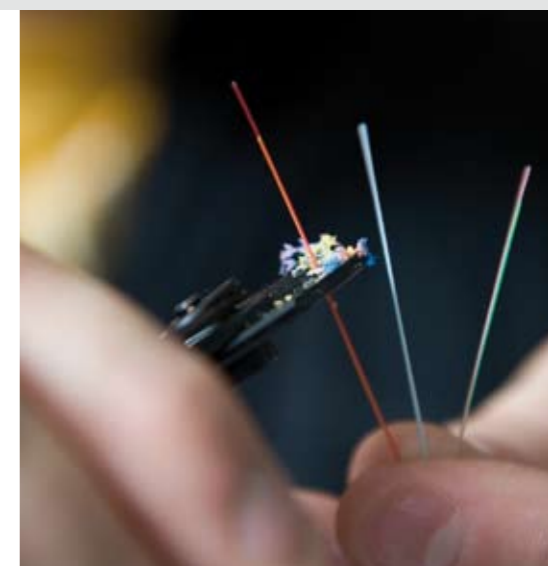
Of course, we don't want to take the work away from you! We can only help you with it.

That already begins with training your specialists. With well-trained personnel, you can complete the installation work professionally and correctly and in the required time.

Dätwyler Cables offers comprehensive training and continuous education for expanding broadband networks. It includes theory and practice modules which are exactly tailored to the needs of fitters, planners or network operators.

When Fibre-to-the-Home becomes a mass market, a larger number of fitters who have mastered the craft of fibre optic installation will be needed. Dätwyler Cables offers special training programs to expand the needed technical knowledge in the market.

The correct installation of all products and system solutions of Dätwyler Cables is also described in precise installation instructions. And, if necessary, we are happy to assist you with on-site support at the construction site.



Summary of advantages

Reduction of costs and effort for procurement, installation and commissioning.

- training and continuing education models for fibre optic technology
- tested, standard-conforming complete system for every task
- high stability while laying
- simple, flexible enhancements and expansions
- assistance with acceptance inspections

Good outlooks



In the general competition between locations, all cities and municipalities are constantly striving to increase their attractiveness to business and citizens. Low taxes, a good education system, a well-planned transportation concept, attractive living space and adequate recreation opportunities are important arguments in selecting locations.

Among all these factors, a capable, future-oriented broadband communications infrastructure is increasingly growing in importance.

Triple-Play services (television, Internet and telephony) are meanwhile part of the standard offering of many Internet service providers (ISP). But the increasing speed of the networks is especially being promoted by supplemental interactive offerings, such as video games, since these guarantee increased revenue for the ISP. Broadcast consumers thus become egocast consumers, who put together their entertainment offerings themselves according to their own needs.

With e-Government, e-Education and e-Health, even government offices and institutions are taking advantage of the opportunities that the new network generation offers to make life easier for their users, promote themselves with their service offering and differentiate themselves in the market.

High bandwidths increase location attractiveness

Modern, powerful broadband networks awaken many new needs. For example, they give municipal utilities and local and superregional energy providers the option of remotely reading the electricity, gas and water consumption of their customers over Fibre-to-the-Home networks (Smart Metering).

To ensure that the attractiveness of the broadband networks is also guaranteed in the long term, the following requirements, in particular, are move to the forefront:

- low investment
- manageable operating costs
- multiple usage of the networks through Triple Play, Smart Metering, etc.
- improvement of the service offering through various Internet service providers
- integration of new business models, such as e-Government and e-Education

And so the benefits of a modern communication network have long ago stopped being just a matter of fast Internet and many TV channels. Rather, the goal is to create a virtual platform that can be used in many ways, through integration of all potential partners (governmental offices, institutions, ISP and other companies).

We would be pleased to show you how, with your FTTH cabling, you can achieve one of the top spots in the competition between locations!



Summary of advantages

Long-term attractiveness

- economic operation
- high scalability and standards

Multiple use

- Triple Play
- Smart Metering
- e-Applications

Location advantages

- high bandwidth
- strong competition
- new business models

References



ewz | Zurich



IWB | Basel



Swisscom | Berne



Municipal utilities | St. Gallen

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