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**The consumer's thirst for bandwidth –
a cable operator's perspective**

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I am very pleased to have the opportunity to present Cablecom's perspective regarding consumer's demand - or metaphorically speaking – consumer's thirst for bandwidth today and tomorrow.

Then:

I remember when I was working in Cambridge, England in early 1990's and there were some University types sharing with me how the USA DARPA Net (Defense Advanced Research Projects Agency) and Swiss CERN (European Organization for Nuclear Research) Lab would change the world and I questioned that possibility. Boy, was I wrong?

Today:

We have, using Cablecom, a 100 megabit per second ultra fast Fiber Power internet service that can grow even more.

With the development of new broadband applications in the market, consumer demand has certainly evolved.

Today our customers do not only want fast broadband-internet connections. Customers also rely on our digital-phone services. They enjoy a broad set of digital-television benefits.

They want this in a way that is most convenient for them. Depending on their needs, in their own time, in their own chosen place.

Bandwidth is important for many reasons. We transmit high-definition television on our network. In a relative short period of time, people will only watch HDTV. We are working with the Swiss Broadcaster to bring that reality to Switzerland. We offer high-bandwidth services such as video on demand or catch-up TV. The internet and the vast range of its high-bandwidth applications (such as file sharing, video streaming and online gaming) demand higher bandwidths.

More and more young customers use video streaming and online gaming.

The questions are obvious:

What are the usage scenarios and resulting bandwidth demands in the future?

How fast will and should broadband networks migrate to higher bandwidth?

How big is the actual customer's thirst for bandwidth?

Among the most thirsty ones is the so called generation "born digital".

Definition "born digital":

The first children who were born into and raised in the digital world come of age – ready to reshape society.

Example:

Like my 15-year old son. Technology is not technology to him – it's just like the air or water.

Today, many innovations and hence future standards come from those digitally fluent consumers.

Have you ever watched your kids interact with their friends? Most likely they engage in short-texting, video chat and face-to-face interaction all at the same time. They post their current status to their Facebook profile and upload real-time pictures to another social-networking platform.

Simultaneous interaction, no matter where they are, the masters of multi-tasking.

It is evident that members of the born-digital generation have higher demands: 10% of the users use up to as much as 80% of the total bandwidth offered today.

And our key is to fulfill **all those** customer needs: Today and tomorrow!

Cablecom always puts all of its efforts into the successive evolution of its network infrastructure – rather than into uncertain hopes for a sudden revolution.

As all cable operators across Europe, we believe in EVOLUTION instead of REVOLUTION when satisfying consumer needs - because, it is more economically rational.

And it guarantees sustainable network development in the long term.

Cable networks can expand network capacity as demand emerges. The way we do it ensures that Switzerland will have lasting benefits of competing networks!

Cable has invested continuously over many decades in infrastructure-upgrades and will continue to do so when the economics make sense.

Today, we deliver up to 120Mb in Europe, up to 160Mb in Japan, and we know we can go to 200Mb and beyond anytime our customers would show the appetite. Even 400Mb is being tested as I speak.

Cable is in a comfortable position today because of our investments. We can choose to act quickly when demand really emerges. And, when? In 2 years, 5 years, in 10 years, in 15

years? In any circumstances, cable operators have a stable and future proof economic and customer model.

The question remains for us providers: How much bandwidth will be demanded and **what will it cost?** Or from our customer's perspective: How much bandwidth do I need and what am I willing to pay for it?

However it is true that most internet-category traffic has grown. The majority of the substantial growth in internet activities is in the area of high-bandwidth applications.

Although the question remains "a chicken and egg" one, it is an undeniable fact that high-speed internet is available and benefits are reaped by both consumers and business today.

As Bain & Company recently assessed the "consumer sweet spot" lies at 30-40 Mbit/s: This will allow generous data services, but also account for additional high-definition TV and extra video-on-demand services.

Avenir Suisse agrees on the numbers: Perhaps 50 megabits per second is necessary.

But most importantly Avenir Suisse acknowledges that FttH might lead into the next monopoly through agreements that are not transparent and that distort competition. Our view is that the current market dynamics of infrastructure-based competition is working and consumers' demands are being met without government intervention.

From today's perspective it seems for the foreseeable future (I guess we are talking here about 5 – 10 years) 30-50 Mbit/s is sufficient to serve the large majority household's thirst for bandwidth at a price they are ready to pay.

Today, we already deliver double that level.

There are always limits to the rollout and the adoption of new technologies – some of them technical, but most importantly time. Timing always plays a major role.

Although we have only included the last ten years, we can see how the speeds of the different technologies have evolved over time.

Can you imagine that broadband internet is only about ten years old?

In 1999 Cablecom first introduced broadband internet to the Swiss market with ADSL following in 2000 and 2001 respectively.

Today it is not only about broadband internet anymore: Everybody is talking about fiber – but what is it about?

Currently the Cablecom network already is 95% fiber – up to the local node.

Coax has been designed for video and hence broadband applications to the home. Consequently, we already offer the highest available speeds today.

From the customers' view this is more than they need, or in any case then they are willing to pay for. Should the demand for bandwidths increase substantially, our technology allows us to move the node closer to the home and to even access homes through fiber directly.

Our technology achieves fiber to the home in an evolutionary approach: In a fast but economically rational way.

Let me illustrate this with a comparison between the economics of different access technologies.

The red line indicates the likely costs that are to be recovered. No matter what next-generation technology we look at and wherever we offer fiber-speed internet – Cable technology always has the least financial impact for all stakeholders concerned: **by far!**

According to Bain & Company “fiber to the home” only has a slim chance to recover costs unless ARPU can be as much as doubled.

But the question is: Will customers pay more than 100 Swiss Francs per month for a connection?

It may well be that “fiber to the building” is a more rational way to start and hence the promises given today will not be lived up to.

The future comes later and remains uncertain – but future is now!

I am sure you are familiar with the saying “A bird in the hand is worth two in the bush”.

As we speak, Cablecom already offers expanded capacities to 86% of the households. In addition, we can deliver Fiber Power with the speed of 100 Mbit/s to 40% of the households in Switzerland.

On the one hand the evolutionary character of our network is clearly demonstrated by the linear capacity expansion on our network.

While Fiber Power and Video on Demand undergo intensive testing in selected urban areas, we will be able to cover 100% of the population by 2011 – including many rural areas.

According to all sources, FttH will still be way below 20% in three years from today. While FttH is labeled by some to be the only “future proof” architecture we as Cablecom can proclaim that our technology is ready to serve current and future needs for bandwidth: It is “present proof” and “future proof”.

Cablecom has always been a strong player in driving bandwidth in the Swiss market. This is also the reason why Switzerland enjoys a great high-speed internet infrastructure.

Switzerland is “top of Europe” when it comes to the wide-spread availability of broadband-internet speeds.

This means that Switzerland is fit for the future as we predict it today. But we still need to drive the evolution so to be ready for the long-term future. It is our plan to proactively develop the market with exciting new products.

Cablecom has made interesting offers combining more than one product into a cost-saving package in the past. In addition, we recently rolled out Fiber Power 100: Customer feedback has been great. We will continue to follow our customers’ needs by offering great deals both in performance and price.

Since various operators have announced their intention to invest in fiber, a lot of people (journalists, politicians and even some colleagues) have been under the impression that cable had no future. The perception has been that fiber is the future and that there is no alternative to that.

I am glad to see, that media and recently published studies are finally picking up on the next-generation competition between cable, VDSL and FttH.

When looking at the numbers, more people realize that immediate FttH deployment will result in a substantial price increase. Are consumers willing to pay 60% more? Would you pay more than 100 Swiss Francs a month for a connection and on top perhaps another 100 Swiss Francs for service?

As a study from Avenir Suisse clearly states, the mid-term bandwidth demand is covered by cable, VDSL and FttH. We have to keep our customers in mind before blindly investing in infrastructure: What do they want and at what price?

We believe that infrastructure competition is the best guarantor for long-term competition and the challenge of performance and price. Companies willing to invest in infrastructure should be able to do so: However competition must not be distorted. Only competitive equality assures that money is spent wisely.

Hence, Cablecom expects public discussions around economic efficiency to intensify in the near future.

We will remain in a challenger position in future discussions – by living proof of our technology. Nevertheless, in the highly dynamic telecom industry there are infinite challenges to fully satisfy our customers every day.

First, Cablecom has always been great fond of infrastructure competition. Only competition creates the pressure needed to push innovations onto the market and benefitting both customers and Swiss telecom-infrastructure in general.

Second, no provider should benefit from an investment profile that no private investor could match. Everybody should be able to invest, but on fair terms. A road is a road and a broadband network in a liberalized market is something substantially different. If communities decide to invest in telecommunications infrastructure they need to treat it like that and not like a road.

Last but not least, we are prepared to offer our services across Switzerland so to include many lower-density areas in the digital age as well.

We as Cablecom know that our technology is ready to roll-out these next-generation services nationwide at reasonable costs.

And what was our approach to achieve this?

It was our constant investment of over one billion Swiss Francs in the recent years that has resulted in great bandwidths for the customers.

The recent launch of Fiber Power 100 has demonstrated this and nationwide rollout will be completed by 2011.

With our focus on people we are committed to deliver better services to all our customers.

We have recently launched a program called “Changing for You”. The initiatives are based upon three pillars. The focal areas within the months and years ahead can be summarized as follows:

Customer service - compelling offers - innovation.

We will drive our success story further – for our customers, with our customers. We are ready to live up to our promises and to exceed the expectations from both consumer and business customers.

Why am I so confident that we will be able to deliver quality and expected bandwidth on time? We already are doing so today, even if reputational perception lags reality!

By focusing on our core competencies of high-speed transport on wired networks, we are ready to tackle the challenging future.

As I conclude my presentation, I want to resound the motto of the 13th Euroforum: “Back to Basics – the Future is Now!”

We as Cablecom have always stuck with basics and through our evolutionary approach we can state that the future is now, indeed!

I am looking forward to discussing and starting the future with you today – thank you very much for your attention.