At the crossroads of chaos

by Nathan Hegedus, page 10

▶ Spotify is trying to create a sustainable music business model built on ultra-fast streaming. The aim is for users to be able to listen to and share music on any device and any network, anytime, anywhere. The company was founded in Sweden in 2006 and has created massive buzz in the select European countries where it is available. Currently Spotify has about 10 million users in seven countries, including about 750,000 paying subscribers.

The anticipation in huge markets like the US and China is great but the company has not made any money yet – in fact, it has lost millions. As a legal streaming service, Spotify faces tough challenges in a world dominated by piracy, record labels out for a big cut, and the Googles and Apples of the world.

Spotify competes against Apple's iTunes and many other internet-based music services – Rhapsody, YouTube, MOG and Rdio, to name a few. "But in reality, what our users say is that over two-thirds of them have stopped using pirate services," Faisal Galaria says. "So the alternative to piracy is Spotify." Galaria points out three differentiators for Spotify compared to pirate services. The first is speed. The second is ease of use and the third is its social component. "Spotify is Facebook music," he says.

There is one category of players in the music industry that, in general, has failed spectacularly: mobile operators. To Faisal Galaria, who joined Spotify in 2009, this is no surprise. Most telecoms have sold music for years, he says, "in an undifferentiated way," with no service innovations and no price innovations.

"Spotify can help with churn reduction, customer acquisition, differentiation and marketing," Galaria says. We want to focus on building the world's best music service and have little desire to take Spotify and build out churn management or billing capability."

"So we see huge demand in China, and throughout Asia. But as I said, entering a new market, especially big territories, requires a lot of planning. We're going to do the US first."

Enter the new video – no longer the medium you once knew

by Marc Leclerc, page 20

▶ Video provides opportunities for network operators to use new revenue streams to offset decreasing pricing for voice and text services, and it is a path towards monetizing the increased network bandwidth provided by LTE. On the other hand, it presents major challenges to current network capacity in terms of both transmission and backhaul. In addition, as a paid service, video calls and broadcast-to-mobile video have not exactly been raging commercial successes.

The development of music into a mass-market medium went hand-in-hand with the evolution of the transistor radio into the MP3 player, iPod and iTunes.

We are now seeing this process repeat itself in the context of video-based visual communication. As with mobile audio devices, the ability to view, share or record video whenever the mood or need strikes is significantly changing the contexts in which video is utilized. Video has now become a key communications tool for individuals and businesses alike. So why are so few telecommunication network providers successfully generating revenue from video-based services?

One problem is access to compatible devices. High costs also prevent the acceptance of video-based services, and another inhibiting factor is the rise of free internet-based video services.

However, the situation for video has once again begun to evolve radically, thanks to the introduction of certain key technologies and phenomena: social networking, mobile broadband and smartphones.

Mobile phones are increasingly involved in not only the consumption, but also the production of video, and people have an intimate relationship with their mobile phones. This places the network operator in a privileged position, being the most accessible "point of sale" in the digital media economy.

Visual communication goes mass market: why operators should care

by Michael Axelsson, page 26

▶ Technologies from three previously separate market segments – high-end telepresence, video conferencing and collaboration and unified communications – are rapidly coinciding to form a new visual-communication market.

Environmental concerns and the need for businesses to manage costs are driving demand. A third factor originates from an unexpected event: the ash cloud that grounded air traffic across much of Europe and North America in April 2010, showing the vulnerability of the global transport system.

The development of the mass market for visual communication will involve three distinct overlapping phases. The process has already begun at the multinational company level with the connection of rooms for business users or C-suite users. The second phase is the connection of companies and employees through laptops and desktops. Operators have one key advantage over their competitors: they are already involved in putting the enablers into place for a wider take-up of visual-communication services.

The current separation between connectivity and service providers can give rise to problems when networks are not appropriately dimensioned. Video-service providers will not take responsibility for the networks, and this creates a window of opportunity for operators– for example, corporate users can be offered high-quality visual communication by operators as an add-on service.

Quality and price must be properly balanced and interoperability will be a key consideration.

Phase three is about creating a mass market, meaning that visual communication usage becomes ubiquitous. An ever-increasing range of connectivity devices will facilitate the process of visually connecting offices, desktops, laptops, mobiles and houses.

The highest barriers to mass-market adoption may be user attitudes. Negative earlier experiences, such as poor picture quality, may lead to a certain level of resistance.

Receiving a mobile video call can also be perceived as intrusive. Stationary visual communication avoids some of these problems by allowing the user to schedule the call and to use a fixed camera, which provides better focus. New solutions will have to steer a middle course and combine the best of both worlds.

Video in the bigger picture

by Urban Nyblom, page 32

▶ Today, not only do consumers have a wider palette of communication services to choose from, but they also use them for different purposes.

In a 2008 10-country survey of advanced internet users that focused on media and communication use, Ericsson ConsumerLab found that on nearly all devices, music was the most common media type. However, we also found that most devices were also used as phones. In 2008, the internet was still mainly a PC-based affair but between 2008 and 2009 there was a blurring of borders between instant messaging and social networking.

Simultaneously, voice calls are being made on an ever greater number of devices, and

in 2010, the iPhone/Android smartphone explosion started to have a real impact.

As the borders between communication and media blur, people are finding it increasingly natural to express themselves using language previously only common to celebrities and journalists. They also see that video communication engenders feelings of intimacy and emotion similar to that of face-to-face interaction. As a result, more than 30 billion pieces of content are shared via Facebook each month.

As the internet evolves from an information-based medium to a communication-centric one, communication channels have started to blur. It is increasingly difficult to determine what constitutes a voice call as consumers mix traditional telephony with IP telephony, voice and video chats and web calls. Similarly, the lines between e-mail and webmail, SMS and online chat, online chat and social networks are becoming less distinct. In addition, consumers are increasingly integrating media into their communication when using services such as social networks. This is only natural as media have always been used as a conversation starter, but one result of all this convergence is that video will play an increasingly large role in communication.

Collaboration tools have a radical impact on efficiency – and emissions

by Matilda Gennvi Gustavsson, page 36

▶ The Smart 2020 report estimated that about 0.7 percent (340 megatonnes) of emissions could be reduced globally by 2020 through the use of teleworking and video conference systems.

Operator TeliaSonera wanted to reduce business travel by air and car and to reduce office space as well as showcase emissions reductions from ICT services. The CO_2e reductions from smart work added up to about 40 percent per employee (2.8 tonnes) CO_2e per employee, per year. In absolute terms, the emissions per employee (including infrastructure), was about 6.8 tonnes CO_2e in 2001, and by 2007 it was down to 4 tonnes.

An Ericsson study compared the CO_2 burden resulting from the manufacture, transport and usage of two video conference rooms – one in Sweden and the other in the US – with the impact from reduced personal air travel during a one-year span. The reduction factor, defined as the relation between the use of two video-conference systems and air travel, was approximately 1:70.

In another case study Ericsson calculated the potential CO_2 reductions through the internal use of its collection of network-based operator applications targeted to the corporate segment. The reduction ratio over a 20-year period could be 1:95, depending on whether infrastructure is included. The CO_2 reduction potential of bringing work to the employee and replacing in-person meetings with remote interactions also yielded huge potential reduction factors ranging from 1:95 to 1:170.

The many faces of 4G

by Martin Ljungberg, Robert Jansen and Lars Bergendahl, page 41

▶ Mobile broadband connectivity has the potential to be either the performance bottleneck or the differentiator – and operators must be positioned accordingly. Today LTE launches are about perception and providing the fastest and best network. And gaining that market position is very much linked to network performance.

An LTE launch must also be forward-looking in terms of devices. 4G smartphones and tablets could come to some markets as early as this spring. The service will take off only when devices beyond dongles and modems appear on the market, because users care more about their equipment than about the technology behind it.

In most telecom markets, three players are guaranteed significant market share – the first, the biggest and the most aggressive. So it is good to be first.

If you are not first, then you need to be loud. This is evident in Sweden in the marketing by Tele2 and Telenor, which recently launched a shared network to compete with Telia's LTE network.

The aggressiveness of Tele2 and Telenor comes at the risk of undermining their existing services. In December Tele2 featured a "3G Outlet Sale" on its website, implying that 3G is out of season, worthy only of heavy discounting.

In the US especially, the competitive situation has also led to the widespread use of the term "4G" for a variety of upgraded networks – including HSPA+, WiMAX and LTE – none of which technically met the ITU's definition of 4G until recently.

The most successful players are using the inherent strengths of LTE, along with their specific market positions, setting themselves up to be the winners in the coming years as LTE deployments – and mobile data usage – skyrocket.

Dialog on leadership: control is not enough

by Adam Eisen, page 44

▶ Georgi Ganev, Telenor Sweden's CMO and previously CEO of Telenor's fixed-broadband operator, Bredbandsbolaget, talks about the challenge of leadership and what is different today:

"Speed. Things are changing more rapidly – both in terms of technology and user behavior – as the internet and mobile services merge. It's difficult to meet these challenges using only process and control as a basis. What we need are creative minds that see opportunities and can react in accordance with these changes."

Would another leadership style have been better?

"What I mean is that the industry is going through a major transformation. This transformation must be piloted by leaders. These leaders must accept that a major share of their work is to be leaders for their organization. If we have expert managers whose focus is on follow-up and control, then there is a risk this transformation will fail.

"The main challenge for leadership is twofold: first, going from being introverted to being extroverted. This means moving away from locating the starting point in technological challenges and instead focusing on and locating the starting point in customer needs. Second, it means going from being reactive to being proactive."

Is it a question of mindset?

"Yes, it is definitely a matter of mindset. By traditionally focusing on technology and innovation, we tend to forget the requirement of good leadership that will allow our organization to create the best experience for our customers."

In search of the sweet spot

by Greger Blennerud, page 47

▶ Broadband traffic growth – steady or dramatic – should be celebrated, not seen as a problem. Yet most discussions about business models tend to focus on how to cut costs by limiting usage or how to move traffic from the cellular networks to, for instance, WiFi networks.

We cannot use average cost per GB to figure out if an individual subscriber is profitable or not. Instead we need to look at the marginal cost to find our way forward.

Based on this, you can conclude that basically any normal paying subscriber in virtually any mobile broadband network today is a profitable subscriber.

Another conclusion is that with such a low cost for handling the traffic load by, for example, adding another car-

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rier at a site, there is no reason whatsoever to move an operator's most valuable asset (the subscriber) out of its second-most-valuable asset (the spectrum) through something like a WiFi offload.

Studies indicate that end users want two basic things from their data service: that it works for the entire month and that the cost is predictable.

Application stores play an important part in filling the pipe in a way that also adds value. Value-based business models can also include partnerships with media, content and other players, including over-the-top service providers.

Looking at a single operator from one of the top five markets we can see more clearly how its packages are positioned for different segments.

This operator uses two different methods related to segmentation and user "identification." Speed is the key differentiating parameter, but for the low end and mainstream packages clearly communicated bucket sizes are also used.

Exploring the real value of high-speed connections

by Kate Cornick and Adam Lodders, page 52

▶ In Australia, the federal government has committed AUD 43 billion (USD 42.84 billion) to build a national broadband network that will deliver fiber-to-the-premises infrastructure to 93 percent of homes and businesses, and next-generation wireless and satellite services to the remainder of the population.

The impact of broadband reaches far beyond teleconsultation. For example, there is real potential for the use of broadband applications in disease prevention. Broadband technologies can assist with this problem by providing timely feedback to patients, encouraging behavior modification and lifestyle changes, and thereby preventing deterioration and hospitalization.

In the Connecting Learners project, researchers at the Institute for a Broadband-Enabled Society (IBES), based at the University of Melbourne, Australia, are investigating the use of social media and video meetings to connect learners in rural areas with their peers in metropolitan areas, as well as with schools in other countries.

IBES researchers are also focusing on 3D technology in training the next generation of medical students.

Broadband can also transform other sectors. For example, sensor networks in the energy sector have the potential to reduce carbon emissions and assist in the management of other resources, such as water. Social media can help address increasing rates of poor mental health among young people by enabling them to connect with their peers. Broadband technologies can also help encourage social interaction and the rebuilding of communities in both the real and virtual worlds.

Growing opportunities for telecom banking

by David Callahan, page 55

▶ Too poor to generate a profit for the banks, large segments of the population in emerging markets are turning instead to their mobile-phone operators for consumer financial services.

A recent survey of 147 countries found that nearly 45 million people without traditional bank accounts use mobile money services. That number is expected to grow as high as 360 million by 2012, if early adoption rates hold, resulting in an additional USD 8 billion annually in revenues.

Mobile money services typically enable customers to deposit funds by delivering cash to agents who credit the accounts using a special text-messaging system (a process called "cash-in"). Subscribers can use text messaging to make payments from their accounts to retailers or other users. They can also withdraw cash from any agent in the system (cash-out), and loans and other services are also offered.

Success stories such as GCash, which is offered by Globe, underscore the importance of combining assets and capabilities from two distinct areas: telecom and banking.

Case studies show that it is important to determine each partner's roles and responsibilities. Insiders in the mobile money business say that an operator will more easily find banks ready to help if it envisions mobile money as a value-added service to increase its subscriber base and margins. However, banks might feel threatened if they perceive that the operator is becoming too deeply involved in financial services.

Why Chinese 4G matters to the rest of the world

by Kevin Li, page 58

▶ TD-LTE represents China's bid to take a global leadership role in 4G, driven by China Mobile with support from a powerful ecosystem.

An increasing number of operators worldwide are showing interest in TD-LTE, which is usually seen as a competitor to other time-division duplex technologies. However, to an increasing extent, TD-LTE is showing advantages compared to WiMAX. To most operators, WiMAX offers a shorter time to market, while LTE is a more backwards-compatible network technology.

Spectrum politics could lead to a fragmented market but TD-LTE has a promising future for three important reasons. The first factor is frequency availability – given the scarcity of existing paired bands, many unpaired spectrums have been allocated for TDD radio technology. Second, with a unified standard, TD-LTE and LTE FDD could share most of their technology structure, making things easier for equipment suppliers. Third, TD-LTE offers business advantages. A TD-LTE network could inherit nearly all applications from 2G and 3G. This gives TD-LTE an advantage over other TDD wireless technologies such as WiMAX.

Opinion: ICT companies must provide political leadership – not just innovation,

by Gary Cook, Greenpeace, page 60

▶ ICT companies must work harder to overcome the political opposition of the dirty-energy companies that seek to slow or block a clean-energy revolution.

In 2008, the Climate Group's SMART 2020 report quantified that ICT solutions have the potential to drive a reduction of at least 15 percent in global greenhouse gas emissions by the year 2020. This transformation will not happen without a fight – but I believe it is possible. In fact, the scale of deployment for the renewable energy and energy savings needed to stabilize emissions – an 80 percent reduction in greenhouse gas emissions by 2050 – cannot be achieved without the rapid deployment of ICT energy solutions.

Telecom services can help "green" the power grid by making it more energy efficient. However, Greenpeace is watching with growing concern the expansion of ICT's own energy footprint. If the total electricity consumption of the world's internet and telecommunications networks were compared with the total consumption of the countries of the world, these networks would be the fifth biggest consumer. Furthermore, their energy consumption is projected to triple by 2020.

ICT companies have been incredibly innovative, and Greenpeace is looking to Ericsson and others in the ICT sector to be a critical and long-term partner. These companies could provide both the technological innovation and the political leadership to drive the policy changes we need to protect our fragile climate.