



Isolated French village. Photo courtesy of www.freephotobank.org.

Tapping into the EMEA rural broadband market

In an age where great emphasis is placed on access to ICTs for all, delivery of broadband via satellite is coming into its own. Helen Jameson looks into the impact that satellite broadband is having on Europe, the Middle East and Africa.

The impact that broadband has had across the world is phenomenal and the market is seeing massive growth in Africa and the Middle East - some of the fastest growing regions. The value of broadband is being realised by residential customers, businesses and governments alike. Let's look at the recent tragic events that we have witnessed in both Burma and China. Telecom Sans Frontieres is on stand-by to send their workers into Burma to reinstate communications. They will be using broadband via satellite. In China, Inmarsat has already begun to deploy BGAN to enable connectivity in the areas stricken by the recent earthquake. Broadband delivered via satellite is precious and is vital to enable aid agencies to contact the outside world for help and to gain information from disaster zones. Broadband enables voice, data and video applications. It opens up a world of knowledge and can literally change people's lives. We are all too familiar with the incredible value that satellite brings with it in terms of disaster recovery, but what about in the everyday lives of

those in areas known as 'broadband blackspots' such as regions in Africa and parts of the Middle East – even in Europe?

Why broadband satellite?

Whether we like or not, broadband is becoming an essential ingredient in enabling a nation to become competitive. Businesses must be online nowadays to be competitive and to offer their services 24 hours a day, 7 days a week and it is acknowledged now that those who do not have access to broadband services are placed at a social and economic disadvantage. After all, businesses, no matter where they are, in the most remote, or most isolated areas, bring prosperity to the place where they are located. However, in order to be successful they must have good communication links with the outside world to enable them to expand and sell their goods further afield. Voice and data is a must, as is the ability to be able to send and receive large files, to purchase goods, to keep inventories etc. Breakthroughs are



constantly being made in satellite technology in terms of Quality of Service meaning that it surely is the best, most economical means of expanding a business' potential and to give access to ICTs to those who previously had none. Satellite does not require infrastructure. There is no build out of networks necessary. It is the obvious solution for rural broadband demand.

The advantages of using broadband via satellite are numerous, especially for those users in remote areas of the EMEA region. Satellite broadband can be used anywhere, even in the most hostile areas. As long as an earth station can be placed in the area where it is needed, and has a clear line of sight to the satellite, it can be used. The price of the hardware required to establish a satellite broadband connection has fallen and the technology has now matured which mean that the cost of the service has come down in comparison with the prices that were previously being charged. In fact, the market in Africa is becoming much more competitive due to deregulation and the review of frameworks governing satellite-based communications. Satellite broadband also offers fast two-way connection speeds and an 'always-on' connection. Broadband via satellite is also, very importantly, reliable. Satellites can claim a 99.9 percent reliability – a very impressive statistic.

Two-way Internet service

A two-way satellite Internet service sends data from remote sites via satellite to a hub, which then sends the data to the Internet. The satellite dish at each location must be precisely positioned to avoid interference with other satellites. Also, each location must use power management to adjust the amount of transmit power to compensate for conditions such as rain fade. There are several types of two way satellite Internet services, including time division multiple access or TDMA and single channel per carrier or SCPC. Two-way systems can be simple VSAT terminals with a 60-100cm dish and output power of only a few watts intended for consumers and small business or larger systems which provide more bandwidth.

ITU strives to connect Africa

Africa is the one of the continents of the world that strongly highlights the Digital Divide and the problems associated with it. However, in recent years, initiatives such as kiosks and cybercafes have sprung up all over Africa, the use of VSAT technology to deliver broadband has greatly increased and the regional organisations and governments are putting programmes in place to address the issues that prevent information technology reaching those in underserved areas, of which there are too many in Africa. Access to ICTs and therefore broadband, is inextricably linked to prosperity and economic development.

The importance of ICTs and access to telecommunications has been the thrust of the International Telecommunication Union's campaigns and projects for many years. The emphasis at the Connect Africa Summit, held in Cairo in May 2008, was to provide broadband connectivity. Last October, key partners from industry and government met in Kigali to discuss investments that will help meet connectivity targets in Africa. The Connect Africa Summit involved over one thousand participants from 54 countries representing governments, industry, development banks and international organisations in order to take forward the objective of expanding access to ICT infrastructure across the continent. It was announced that US\$55 million was to be invested in the expansion of connectivity to the entire continent by 2015 and to interconnect cities to broadband by 2012.

"Seven years before the 2015 target for achieving the United Nations Millennium Development Goals, we need to be bold. We need to devise the strategies that will enable us to achieve these goals. Information and communication technologies have a crucial role to play in achieving these goals, for example, through e-education e-agriculture and e-health." Dr Touré added that African countries need modern, reliable broadband infrastructure in order to cre-

ate jobs for economic growth. "Investment, not charity, is the solution for Africa's development," Dr Touré said.

Mr Jeremy Rose, Chairman, International Development Initiatives, Global VSAT Forum (GVF), announced that the global satellite communications sector plans to double the number of earth station terminals operating in the region by 2012 to cater to more than one billion Africans located in under-served rural and urban areas throughout the continent. To support this growth, more than 20 satellites will be brought into service to connect Africa during the next five years. He added that to facilitate the industry's offering, complimentary capacity building will be delivered to governments in Africa by the GVF, the non-profit association of the international satellite industry.

Gateway Communications launch IPJetDirect

Gateway Communications launched their new product, IPJetDirect at Satcom Africa 2008 in Johannesburg. IPJetDirect is an accelerated Internet access product that delivers data direct to small antenna on client premises. IPJetDirect provides direct, high speed, low latency connections to the global internet backbone - and other selected networks - to improve quality issues often associated with both mobile and African content. The service enables African operators who need to connect their mobile or fixed network to the World Wide Web to do so while guaranteeing high availability and a high quality connection through Gateway's world-class Service Level Agreement.

Speaking at the event, Peter Gbedemah, CEO of Gateway Communications commented: "We have developed IPJetDirect in response to a clearly identified market need. The service allows our customers to profitably increase revenue and minimise churn in the highly competitive market for African mobile data access. We deliver this world-class capability in a highly secure, scalable and cost-effective package with a robust SLA and the strongest support and coverage map available in Africa. Features such as enhanced techniques for caching and web acceleration make it ideal for delivery via satellite and for mobile network operators."

State-of-the-art traffic shapers and monitoring systems ensure that IPJetDirect delivers the highest quality service. The service is supported by Gateway's regionally based technical experts, whose IP and engineering skills assure a responsive and timely service delivery. Gateway Communications remains the largest independent provider of satellite capacity in Africa, with more than 37 equivalent transponders deployed over Africa, this ensures the scalability of access to meet the rapid on-the-ground growth in mobile data services across the continent.

"IPJetDirect is designed for reception by 3.7m antenna based on the customer's premises. This is a relatively small installation, especially when one considers the scale of the service it delivers. Add to this our proven reputation; the world-class SLA, low TCO and how IPJetDirect enhances our customers' ability to deliver services to their client base and we see this as a compelling new product entry to our portfolio," concludes Gbedemah.

Middle East

The Middle East broadband market is on the up. According to Buddecom's 2007 Telecoms, Mobile, and Broadband in the Middle East report, Internet penetration is highest in Israel, UAE and in the smaller countries of the Gulf region and is lowest in Iraq, Syria and the Yemen. This lack of penetration is largely due to a lack of infrastructure, government policy, poverty and illiteracy.

Broadband services in the region are largely accessible via DSL. Satellite technology is available to access broadband services but, as yet, do not have as high a take up rate. However, satellite is becoming much more important for the delivery of broadband in the region as it requires no infrastructure and is easily scalable and cost effective.

GulfSat Communications Company purchased an HN System Network Operations Center (NOC) at the end of 2007 for the provi-



Broadband has been developing fast and there are more subscribers in Europe than any other economic region. Photo courtesy of www.freeimgaeslive.com.

sion of broadband communications. The NOC was installed at the Globecomm Systems teleport in Hauppauge, New York where it is used to provide a new broadband residential Internet access service, "Shownet Two-Way Service," that Gulfsat launched in the Gulf region in the 4th quarter of 2007.

Mustafa Murad, Chief Operating Officer at Gulfsat, said: "We are very pleased to be using the Hughes broadband satellite platform to provide our new, two-way residential Internet service and to have the first DVB-S2 NOC serving the residential market in the Gulf region." Mr. Murad added, "One of the key factors in selecting Hughes was their proven experience with over 170,000 DVB-S2/ACM capable terminals shipped worldwide as of February 2007. The Hughes implementation of DVB-S2 allows us to provide a very efficient and cost-effective service to our customers with improved satellite Internet browsing and download performance at a level that traditional landline service cannot match."

The HN platform employs the most efficient implementation of the DVB-S2 industry standard including Adaptive Coding and Modulation (ACM), and is fully compliant with IPoS (IP over Satellite), the first global satellite industry standard approved by TIA in North America, and ETSI and ITU in Europe

"We are proud to have been selected by Gulfsat to deliver our HN system solution. They are a valued customer of Hughes and have

been providing excellent broadband satellite services to their customers in the Middle East and North Africa. It is very exciting to see them expand their suite of services to address new markets such as residential broadband," said Soheil Mehrabanzad, Assistant Vice President and Regional Manager, MEA, for Hughes.

By utilising the Eutelsat Atlantic Bird 2, one of the most powerful satellites covering the Arabian Gulf, together with the advanced Hughes NOC operating at GSI's carrier-class facility in New York, Gulfsat's Shownet Two-Way Service will represent the latest generation of high-speed Internet access for customers in the Middle East. For the first time in the region, Shownet Two-Way will be introducing consumption-based packages with speeds up to 2Mbps, enabled by integrated acceleration and spoofing techniques on the Hughes platform along with a new billing system.

Satlynx forms partnership with Lunasat

Satlynx announced in March 2008 that they have introduced a range of broadband services for the Middle East and African markets through its partner in the region, Lunasat. The services are based on the Satlynx Direct platform and will be offered by Lunasat built on VSAT hub and modem technologies from iDirect and the Satlynx teleport facilities in Leuk, Switzerland. The Leuk teleport hosts the VSAT hub and has direct terrestrial connectivity to London and New



York, thereby giving end users in the Middle East and Africa direct access to the US and European Internet backbones.

Services from Lunasat are targeted at governmental institutions and corporate enterprises as well as larger SMEs. The coverage area provided by the Satlynx Direct platform includes Africa and the Middle East as defined by the footprints of NSS-10 and BADR-4 satellites.

This extensive coverage will allow Lunasat to expand its customer base and better serve new and existing customers in rural communities to allow them to connect to the rest of the world for Internet, voice and data applications. The foundation for these services will be instrumental in delivering high service level performance for the end user. State-of-the-art operations, global terrestrial connectivity and very large ground station antennas based in Leuk make up the robust Satlynx Direct platform which already serves customers in these regions.

Europe

"Broadband has been developing fast and there are more subscribers in Europe than any other economic region... But the migration to a high speed Internet is not yet taking off in Europe. The United States is experiencing a similar slow evolution as Europe. But, countries like Japan and Korea are leaping ahead," said Viviane Reding, Member of the European Commission responsible for Information.

We don't tend to think of Europe as being a continent that is suffering from a lack of connectivity. Europe is generally considered to be flying ahead of the United States in terms of broadband penetration with the number of users hitting 250 million. However, there is still a large number of EU citizens who are not online and the EU Commission is intent on ensuring that those in underserved areas have access to broadband connectivity. The EU Telecoms Commissioner has expressed concern in a report on the implementation of the Telecommunications Regulatory Package that broadband penetration is still not high enough in Europe and has called for a penetration rate of 30 percent by 2010.

The European commission do realise the benefits of satellite and consider it to be an important ingredient in bridging the European digital divide. "Satellite communications have already brought many benefits to society and citizens in Europe and worldwide" commented Viviane Reding in a speech given in February 2006.

Eutelsat reaches rural users in Switzerland

Eutelsat Communications is a European satellite operator leading the way in two-way broadband communications. They have announced a major contract for the new Tooway satellite broadband Ka-Band service with Swisscom, Switzerland's leading telecommunications company.

According to the agreement with Swisscom, Eutelsat's Tooway service is the satellite component of a far-reaching universal broadband programme for all Swiss homes. Swisscom won a tender from the Swiss Ministry for Telecommunications to make broadband connectivity available as from January 2008 to all residential Swiss customers irrespective of their location.

Eutelsat's satellite-based consumer broadband service was chosen by Swisscom following an exhaustive assessment of multiple wireless broadband access solutions able to address homes beyond range of terrestrial broadband networks. Swisscom selected Tooway in particular for its high performance and scalability. Launched in Europe in late 2007, Tooway unites the skills of Eutelsat and ViaSat. Using Ka-Band capacity on Eutelsat's HOT BIRD 6 satellite for both forward and return links, Tooway is based on the SurfBeam DOCSIS broadband satellite system developed by ViaSat and already widely deployed in North America.

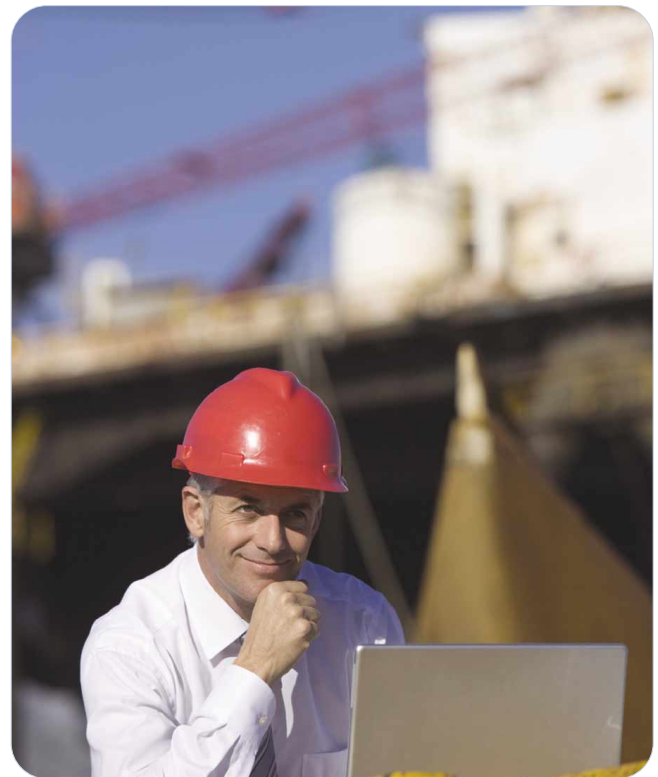
ViaSat's SurfBeam DOCSIS terminals are already used by over 325,000 subscriber homes in North America to deliver ADSL-like services, with a peak of almost 90,000 units shipped over the last three months. From its position in orbit at 13 degrees East HOT BIRD

6 provides Swisscom with full coverage of Swiss territory. The service will be supplied to households via Bluewin, Swisscom's Internet Service Provider. From its Zurich facilities, Bluewin will be connected by fibre to the Tooway Network Operation Centre managed by Eutelsat's broadband affiliate Skylogix in Turin.

Broadband to bridge the 'Digital Divide'

Broadband is here to stay. There's no doubt about that. The question is how to bring equality in access to the service that remains. The EMEA region is a vast one and, although the urban areas are mostly well-served by terrestrial connectivity, they make up a very small percentage of area the gross population. It is not the large towns and cities that need attention - it is the small rural communities that can be separated by hundreds, even thousands of miles of mountains or desert. It is vitally important that the importance of the provision of knowledge-based services is recognised. The number of Universal Service Obligations is rising where administrations must ensure that certain areas are connected, regardless of where they are located within a country. Giving isolated communities access to a broadband connection will give them access to health, education, governmental and financial services. It will help them to enter into commerce, to make money, to expand their horizons and join the global marketplace.

It will also encourage the younger population to remain in their village of birth instead of migrating to the larger towns and cities to 'seek their fortune'. Broadband is an enabler and the only means of delivery to these isolated parts of EMEA is most definitely by satellite. With improved QoS and falling hardware and service prices broadband connectivity is becoming a reality for some in underserved areas. However, there is a long way to go but the satellite community continues to innovate and to provide the most cost-effective and efficient means of deployment for those who need it most. There is no longer any room for the 'haves' and 'have-nots'.



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