Satellite Executive BRIEFING

Vol. 2 No. 15 December 1-15, 2009

SATELLITE Markets & Research

Industry Trends, News Analysis, Market Intelligence and Opportunities

Maritime Communications
Is it all "at Sea"?

by Martin Jarrold
Director, International Programs, GVF

My previous column for this publication focused on the oil and gas exploration and production sector, with particular reference to the increasing attention of the energy industry on deepwater and ultra-deepwater hydrocarbon reserves which now appear to be much more abundant than was thought ten years ago. A result of this is that the applications solutions and broadband communications solutions imperatives of the energy market, whilst they represent, in relative terms, a small fraction of energy companies' total CAPEX and OPEX, well managed ICT networks can play a disproportionately great role in reducing expenditures in exploration, drilling, and production.

In the broader maritime environment the use of broadband, satellite-based, communications solutions has a similar imperative, and the GVF, through its vertical market-focused series of communications conferences and other events, has already broadened the satcoms end-user industry dialogue to include the commercial Broadband Maritime arena. In addition, the Association, in partnership with UK-EMP, has plans to extend this to other facets of the maritime communications end-user space.

(Continued on page 8)

Video Over IP: What it Means for Satellite Service Providers

by Dr. Andrea Franz
and Dr. Gerhand Franz

With the introduction of digital TV a new way of video transport and delivery has emerged, using the Internet Protocol (IP). Video over IP is a general term to describe the use of IP in any or all stages of video transport to the subscriber (or end-customer). This has to be distinguished from the term IPTV, which means specifically the delivery of video as an IP stream to the subscriber set-top box or TV set. All digital video today that is broadcast, transported over satellite or distributed in cable systems is using the MPEG transport stream (TS) communications protocol. This worldwide standard describes the way a digital TV signal (audio, video and data) is encapsulated in a specific container format. It also includes metadata such as electronic program guides (EPG).

An MPEG TS can be transmitted using a variety of technologies depending on the transmission media. In a cable TV system several radio-frequency channels (6MHz or 8MHz wide) are used and the MPEG stream is modulated onto an RF carrier using a QAM (quadrature amplitude modulation) modulation scheme. In a satellite transmission a similar method is used and standardized as DVB-S or DVB-S2 (exceptions are the DSS technology used by DirecTV and DigiCipher 2 used by many digital cable networks in North America).

If the MPEG TS is encapsulated into IP packets then the digital TV signals can be treated like data and the vast IP-based digital networks can be utilized for video distribution. This is what is generally referred to as video over IP. Without going into technical details it should be noted that

(Continued on page 4)

Contents

ND SatCom
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// Government communication services via satellite //

// 25 years of Engineering Excellence //

/ Government & Administration Solutions
/ Defence Network Solutions
/ Broadcast & Media Solutions
/ Telecom & Enterprise Network Solutions

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From the Editor

The Other 3 Billion

Amidst the worst economic downturn in 50 years, it's easy to overlook the great majority of people who live in developing countries who have no or limited access to broadband services, whether by satellite or terrestrial. This underserved group is now commonly referred to as the "Other 3 Billion" and has become a catchphrase in the industry.

One story I was keenly following this year is the bold entry into the market of a company who has made it their mission to reach out to the underserved population of the planet. O3B Networks (O3B stands for "Other 3 Billion) made a big splash at the start of the year during the PTC conference in Hawaii, which was met by both caution and skepticism given the state of the global economy at that time. O3b is building the world's first ultra-low latency, fiber speed satellite network to serve as a global internet backbone and next generation backhaul infrastructure for people and businesses in emerging markets. In the course of the year, O3B has been steadily booking contracts in the hundreds of millions from mostly companies based in developing countries. But the clincher that will probably ensure at least a successful launch of the system was a $75 million investment announced last month from the second largest satellite operator, SES.

View a video of my interview with O3B Networks' CEO Greg Wyler at: www.satellitemarkets.com/media/video.php?id=26

"O3b's positioning perfectly meets our vision of bringing people closer together through the power of satellites", said Romain Bausch, President and CEO of SES. "Through its innovative satellite technology, O3b will be able to provide emerging markets with fast, competitively priced internet connectivity that is currently only available to the developed world. As we look to celebrate our 25thanniversary next year, and reflect on how far we have come since we were a young start up company, we are excited to embrace and support this next generation infrastructure initiative, and to help O3b make their vision – and ours – a reality."

It's nice to see a start-up company with a noble mission to make it in this challenging economic times. So we will continue to follow this story and wish them more success.

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***Satellite Executive Briefing* is published biweekly by Synthesis Publications LLC and is available for free at www.satellitemarkets.com**

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Advertisers' Index

Video Over IP...from page 1

the quality of service (QoS) is as important for streaming video as it is for voice communication over IP.

How does this impact the various stages of the transmission of video from its origins in a studio to the consumer? And more specifically what does this mean for any satellite operator whose business depends on transmission of TV signals?

For the programmers video over IP offers the potential to package content at the origin into an IP stream, have it encrypted and sent to the end-customers as a complete service offering. This model using satellite distribution has been deployed in North America by Avail Media and the recently discontinued IP Prime service from SES. These services should be particularly attractive for telecom carriers who wish to provide video services. Since their existing infrastructure is data centric (fiber-optic backbone and twisted pair subscriber lines, or even FTTH – fiber-to-the-home) conversion of video streams into modulated RF channels is not required.

On the subscriber side the benefits of an IP-centric video delivery are obvious. IP set-top boxes (STBs) or IP enabled TV sets do not require relatively expensive RF tuners that are used for connection to traditional HFC (hybrid fiber-cable) networks deployed by the cable companies. The IP STB does not have a tuner and acts like a DSL modem. Thus these consumer-end devices would be considerably cheaper than today's products.

While this scenario may be implemented within the next few years another video over IP deployment is already widely used: service providers are taking their bouquet of linear channels and video on demand streams and transport them to the edge of their networks over IP networks and then deploying EdgeQAM modulators at the local node to feed the video streams into their local HFC loops. In addition to established cable and Telco companies independent operators can utilize this technology profitably to provide services to remote locations like vacation homes and developments, private communities, etc. In either scenario, video over IP allows the physical separation of the headend from the local loop. For large operators (MSOs) it leads to the creation of two or three super headends serving a vast geographically dispersed customer base potentially threatening the traditional video distribution business of satellite operators. The satellite operators that are not directly selling to the end-user, have to be agnostic to the end use of the video signals, and have to provide a cost-efficient and competitive means for the large and distributed customer base of telcos, MSOs and independent operators.

Digital TV and digital video streams can be easily transmitted over IP networks (Video over IP). The heritage technology of multiplexing and packaging programs into 6 MHz or 8 MHz wide modulated frequency bands is no longer required as long as a wired connection exists to the subscriber. Even in the case of existing HFC networks data protocols can be used to maintain the video over IP stream. It appears likely that over time all video delivery over wires will be as video over IP. For satellite operators this transition may not be all that disruptive as long as they can add value as a low-cost distributor of data over a large footprint. Existing DVB-S/S2 technologies can be utilized for IP-encapsulated video as easily as basic MPEG streams. Terrestrial distribution through fiber-optic networks will continue to be the main competition to satellite operators.

Dr. Andrea Franz, Principal at A.G. Franz Associates, LLC, has over 25 years of engineering and program management experience in the telecommunications, aerospace, and broadband media industries. She has worked on programs ranging from spacecraft design, integration and test to satellite operations and services. She was product development manager for the IPTV project IP PRIME™ at SES Americom and is now a consultant to the satellite industry. Dr. Franz received her PhD in Electrical Engineering from the Technical University of Vienna, Austria. She is a member of the Institute of Electrical and Electronics Engineers (IEEE) and the Society of Women Engineers (SWE). Dr. Franz is the author of several technical papers. She can be reached at andrea@agfanz.com

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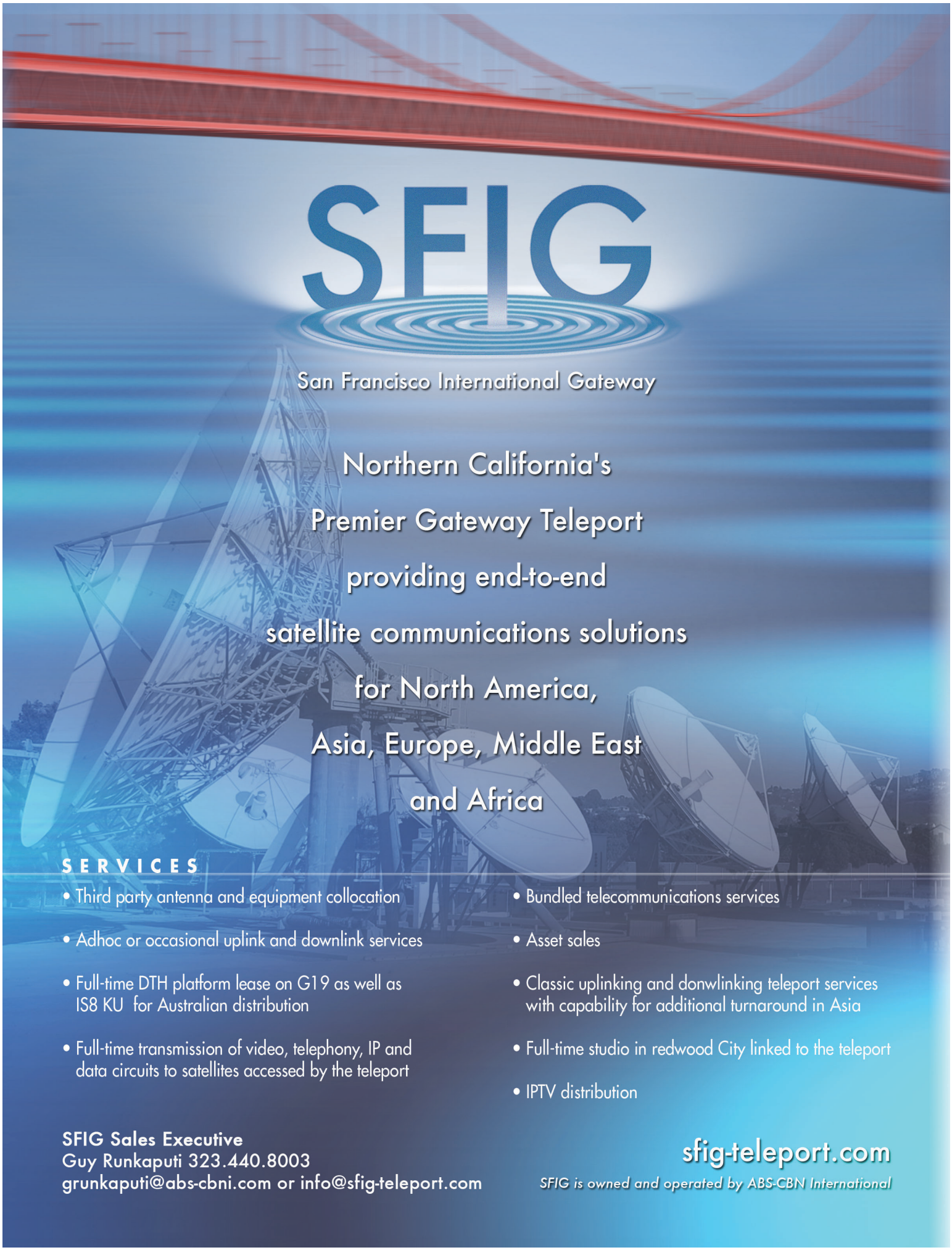
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Maritime Communications...from page 1

The GVF broadband maritime satcoms agenda sets out to examine the widespread deployment of advanced communications technologies and services that are constantly accessible anywhere at sea, with a particular focus on a number of key subject areas.

The first of these is new service provisioning, delivering 'always on' broadband applications with Quality of Service guarantees that go beyond basic 'pay-by-the-minute' service types and which facilitate greater predictability in mission critical delivery, as well as accuracy in the calculation of the cost of communications and, therefore, improved corporate overheads budgeting.

Another is access to applications and networks to meet today's imperative for constant, seamless and cost-effective connectivity to ensure optimised exploitation of physical maritime assets, maximised passenger satisfaction, maximised crew welfare, and optimised navigational safety.

A third is key hardware technology developments in the design and deployment of state-of-the-art stabilised satellite antennas which enable effective satellite tracking and maintenance of signal integrity as vessels pitch and roll.

Moreover, the GVF agenda looks to the fact that whilst there has already been much recent improvement in the availability of advanced communications at sea, it is only now that the maritime satcoms environment is progressing fully, from a mainly narrowband communications arena, and into the broadband age, exploiting the increased synergies of advances in satellite equipment technologies and the availability and accessibility of new bandwidth across, and linking, all the world's oceans.

More specifically, in the commercial maritime arena, this evolution into the satellite broadband space means opportunities to optimise of the effectiveness of fleet management applications whilst on the high-seas, including networking for cargo management, and communications links for crew welfare/ retention aboard bulk carriers, container ships, and tankers, and providing an enhanced passenger experience on cruise liners and ferries.

This also extends to the maximised exploitation of the maritime Automatic Identification System (AIS), the Global Maritime Distress Safety System (GMDSS), and the Safety of Life at Sea (SOLAS) system, as well as navigation and weather data applications and systems, through a partnering with satellite networking.

As indicated above, the GVF Broadband Maritime conference agenda will also be considering the maritime satcoms terminal equipment arena, which is undergoing significant supply-side challenges & developments. This includes an increasing range of technologies in an expanding vendor market, remote spectrum switching between C-band and Ku-band, linear polarisation & circular polarisation, the latest technology gains of DVB-S2, ACM, etc., and such design parameters in antenna technology as self-pointing/ self-stabilising systems built to ruggedized standards for survival in hostile environmental conditions.

In the military space, even in times of international peace, the operations of naval and naval auxiliary forces potentially span multiple geographic theatres. Whether it is fisheries and oil/ gas installation protection, or narcotics trade interdiction in home waters, or sea lanes security, or food aid distribution in far-off regions, or a multitude of related tasks for which military maritime resources are particularly suited, the fundamentally mission critical role of satellite-based communications – as characterised by some of its most crucial features of flexibility, rapidity of deployment, footprint ubiquity, and cost-effectiveness – becomes overwhelmingly evident.

This is particularly true of situations in which international and inter-agency

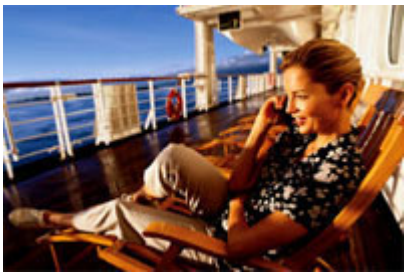

photo: SpeedCast

communications at sea – encompassing the networking technologies and capabilities of various national naval forces, air-sea rescue, border protection

patrols, coast guard, human trafficking interdiction, police, civilian rescue organisations, the commercial maritime sector, and authorities governing marine navigational safety and vessel identification through coastal and international sea lanes – are an essential support to joint operations to address natural or man-made disasters, etc.

To cover many of these issues, the GVF **2nd Annual Broadband Maritime South East Asia: New Communications Networking Offshore & the High Seas** conference, takes place 23rd to 24th February 2010 in Singapore, and to facilitate the dialogue, free-of-charge admission to the conference will be provided for shipping and ship management companies, and ship owners/operators across the container vessel, cruise line, and ferry operator segments, and to port authorities. For more information, follow the link from the GVF homepage at www.gvf.org.

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Satellite-based Earth Observation Market Entering Phase of Impressive Growth

EO Satellite Manufacturing, Commercial Data and Value Added Services to Generate $6.2 Billion in 2018

According to NSR's new report, Global Satellite-Based Earth Observation (EO), the EO industry is in the midst of a significant growth phase slated to generate revenues for many segments of the satellite industry. With an expected increase in the total number of players (government and commercial), advancements in technology, both in sensors and image processing, and a greater political will by governments to embrace EO, the future holds much promise for this market.

NSR estimates that more than 180 new EO satellites will be launched by both government and commercial operators in the next decade. The commercial EO data market is expected to grow more than twice from its current level to reach US$2.2 billion in 2018, while EO Value Added Services (VAS) are projected to reach US$2.3 billion in 2018. NSR expects the high resolution optical imagery market will remain strong, but lower cost mid-resolution imagery will grow at a faster rate.

"EO players today are concentrating mostly on scarce government contracts with high resolution data and timely delivery," said Christopher Baugh President of NSR. "But the expected increase in the number of commercial operators and service providers will augment the array of available applications and will lead to reduction in costs for customers as more of them start using EO data. To counterbalance free or low cost government data solutions, commercial operators must adapt and change their business model by maintaining a balanced portfolio and expanding their service offerings by providing complete geo-information solutions to meet new and unmet demand," he added.

EO programs and applications have attracted wide attention through homeland and food security, environmental and climate change programs, as well as through the emergence of free web portals featuring powerful satellite imagery. The largest EO data clients are still governments, which represent more than 50% of total sales of satellite operators, but there are prime industrial users in the energy and agricultural sectors. Looking into the future, NSR expects the most promising applications to be in the areas of environmental monitoring, land management, natural disaster response, insurance and real estate, and tourism.

The associated expected increase in the number of satellites in-orbit will boost satellite manufacturing revenues, which are forecast to reach $1.7 billion in 2018, buoyed by the rising tide of demand from developing countries like Vietnam, Malaysia, Kazakhstan, and South Africa. However, NSR expects spacecraft to become somewhat commoditized as lower cost mini- and small- EO satellites are launched.

About the Report

Global Satellite-Based Earth Observation is a multi-client report now available from NSR. The report provides updated data to evaluate the EO market around the world while giving proper attention to drivers, restraints and trends to all regional and vertical markets. All potential market segments in the supply and the demand side of the EO business have been sized while giving attention to the emerging trends. For additional information on this report, including a full table of contents, list of exhibits and executive summary, please visit www.nsr.com or call NSR at +1-616-576-5771.

Americans to Double Consumption of TV, Movies Online

According to a new study from **Parks Associates,** the number of US broadband households watching online content doubled in the last year. The study, entitled Broadband Communications, and Entertainment Bundles, says that over 25 million U.S. households regularly watch full-length TV shows online.

Helping to drive this growth is strong consumer interest in using broadband connections as a sort of virtual digital video server, the availability of full-length HD movies and TV shows from Netflix, Amazon and others, and the availability of affordable set-top boxes that connect to the Internet and remove the personal computer from the equation entirely.

There is a high degree of urgency on the part of IPTV and cable operators to move forward in delivering HD — even at some point 1080p HD shows and movies — via broadband, says Parks Associate research analyst Jayant Dasari. "This is setting the stage for value-added services," he says. "Operators see this as a way to increase ARPU [average revenue per user]."

For several years, cable TV and IPTV providers have sought to win subscribers over and increase ARPU by bundling voice, video, wireless and broadband. However, because both cable and IPTV operators have rounded out their bundles, the only thing left to compete on is price, he says. The concept of making video — even HD video — ubiquitous via broadband gives operators an opportunity to reinvigorate the business model with new offerings, he adds.

According to a research by **NPD**, Americans are now spending around $115 per month per household on subscription media services. That's up 7% from a year ago.NPD said that the print media usage continued its decline from last year, while television, DVRs, satellite radio, subscription music, mobile phone data, internet access, online gaming continues to grow.

WTA Top Operators Report Shows Diversification a Key Component to Success

The World Teleport Association (WTA) has published its annual Inside the Top Operators research report. The eagerly awaited report draws from data submitted to WTA by teleport operating companies around the world for the association's 2008 Top Operator rankings (see Vital Sattistics section on page 15 of this issue for complete rankings).

The 2008 Top Operators, told a story of strong growth and diversification. While membership in the Top Operators changes from year to year, over 20 companies have submitted data consistently for the past three years, providing a clear "snapshot" of the teleport sector as represented by the Top Operators. With $8.5 billion in revenue, these companies racked up combined revenue growth of 42% from 2006 to 2008.

A Changing Revenue Mix

From 2005 to 2008, many leading teleport operators spoke about diversifying their businesses out of satellite to fiber transmission. More than one large operator stopped using the word "teleport" in marketing materials in favor of "access points" or "nodes" – the language of fiber rather than satellite carriers. According to WTA, what was actually happening was a continued diversification out of being just a "pipe" for the transmission of video, data and voice into services that employ resources within the walls of the teleport to generate revenue. The Top Operators increased the average percentage of revenue coming from teleport and value-added services, and reduced the revenue earned from transmission. Fiber and microwave revenues fell much more sharply than did satellite.

According to the 2008 survey results, 33% of the Top Operators earn at least 50% of revenue from the broadcast, cable and DTH sector, but twice that number earn at least 25% from enterprise networking. Interestingly, mobile applications, excluding mobile backhaul, have risen from effectively zero a few years ago to be the dominant revenue source for 7% of the Top Operators.

During the last four years, teleport owners have been largely successful in gradually increasing the prices of the teleport and value-added services they offer. The tightening satellite capacity market, however, has resulted in sharply higher prices at the wholesale and resale levels over the same period.

What the Future Holds

In 2008, the average respondent expected the percent of business from teleport, value-added and other services would remain dominant at three-quarters of total revenue. But they forecast that satellite capacity sales would increase from 21% to 32% of the total, a 50% growth in their revenue mix, while fiber and microwave revenues would fall by a corresponding amount.

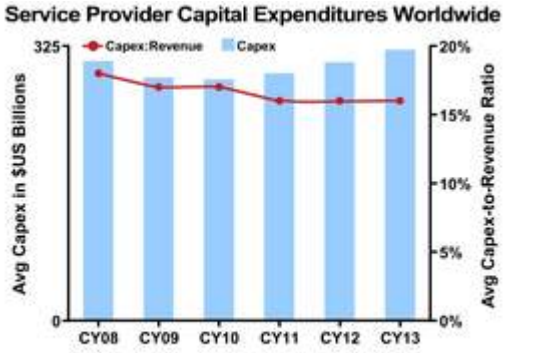
Diversity has been and will remain a key component of the industry's success. Once providers of basic uplinking and downlinking services, teleports have evolved into providers of complex solutions ranging from TV program production and post-production to content hosting and distribution, systems integration to network management. Given the continued demand for complex communications solutions, teleport operators will continue to search for and expand niche markets.

Inside the Top Operators of 2008 is available free to WTA members from the World Teleport Association Web site at www.worldteleport.org.

Global Telecom Equipment Capex to Fall 6% In 2009

Market research firm Infonetics Research (www.twitter.com/infonetics) released the second edition of its 2009 Service Provider Capex, Opex, ARPU, and Subscribers report, which features analysis on how current economic conditions are impacting telecom markets by region and equipment segment.

"Global telecom service provider capital expenditures hit a plateau in 2008, marking the end of a 5-year investment cycle and the beginning of a 3-year disinvestment cycle, albeit a less dramatic one than what followed the great telecom crash of 2000. Capex will bottom down in 2010 and a new investment cycle will start in 2011, driven by 3G rollouts in India and Central and Latin America, the start of 3G rollouts in Africa, and a ramp-up in LTE deployments in Australia, Brazil, Western Europe, Japan, and North America," predicts Stéphane Téral, principal analyst for mobile and FMC infrastructure at Infonetics Research.



© Infonetics Research, *Service Provider Capex, Opex, ARPU, and Subscribers Long-Term Forecast Worldwide*, November 2009

Highlights of the report include:

- Worldwide, service providers spent US$305 billion in 2008 on capital expenditure projects, such as network infrastructure upgrades;
- Global capex is forecast to decline at most 6% in 2009, mainly due to a significant capex shakeout in the Middle East and Africa, a weakening US dollar, expected declines in the Brazilian real and Mexican peso, and delays in US broadband stimulus funding;
- Infonetics anticipates a year-end bump up in capex, which could bring the overall capex decline in 2009 to less than 6%;
- Optical network hardware is a bright spot in today's tightened capex environment, with decent single-digit percent spending growth expected in 2009, despite currency devaluations
- Mainly due to currency effects, worldwide service provider revenue is forecast to decline only very slightly in 2009, to $1.67 trillion, driven by mobile communication services, as consumers continue to hold on to their mobile services during tough economic times;
- Mobile infrastructure will continue to dominate total global telecom and datacom spending, followed by voice equipment;
- The world's 10 largest service providers (ranked in order by 2008 revenue) are AT&T, NTT, Verizon, Deutsche Telekom, France Télécom, Vodafone, China Mobile, Telefónica, BT, and Sprint.

Infonetics' capex report tracks revenue, capex, capex-to-revenue ratios, opex, ARPU, subscribers, and access lines of 171 public and semi-private/government-owned service providers on a monthly and biannual basis. The report includes past, current, and forecast capex and revenue data through 2013 and equipment forecasts through 2009, market drivers, analysis, service provider demographics, and customizable pivot tables to analyze data by service provider, service provider type, and equipment category.

The report includes a Fundamental Telecom/Datacom Market Drivers report with analysis of overall market conditions for service providers, enterprises, subscribers, and the global economy. Regions covered in the report include North America, EMEA (Europe, Middle East, Africa), Asia Pacific, CALA (Central and Latin America), and worldwide.

Asia-Pacific Region Leading Pay TV Growth –CASBAA

CASBAA Convention 2009
Hong Kong, November 3-6, 2009

by Tom van der Heyden

The multi-channel TV industry is more competitive than ever, with a major focus on growing business while navigating the new world of online media and digital content. This was the consensus during the CASBAA Convetion held in Hong Kong this month.

The CASBAA Convention 2009, the annual industry meeting organized by the Cable & Satellite Broadcasting Association of Asia (CASBAA) in Hong Kong on November 3rd - 6th, drew more than 700 delegates, speakers and media from around the world.

The mantra that pay-TV is largely recession-proof has been put to the test this year, said Jack Wakshlag, Chief Research Officer of Turner Broadcasting in the US. "Cable networks are ex-periencing less negative impact than print and the traditional broadcast networks despite the current challenging environment. People are buying bigger TVs and High Definition (HD) only increases the audience's interest in TV."

The convention was kicked off with a keynote address from John Tsang, Financial Secretary of the Hong Kong SAR Government at the Grand Hyatt Hotel, Hong Kong. Tsang called Hong Kong the media hub of Asia and underlined that the government continued strong support of the mediaiIndustry. Tsang took time to underline the free trade relationship that had been set up between Hong Kong and China, which any foreign company doing business in Hong Kong could avail of. The "Closer Economic Partnership Agreement" (CEPA) between Hong Kong and China covers 42 service areas including TV and film production. Of the top ten films in China last year, six were co-produced with Hong Kong companies.

Panel discussion on "Innovations in Media Consumption" (left to right): Jack Wakshlag, Chief Research Officer, Turner Broadcasting; Jonathan Spink, Chief Executive Officer, HBO Asia; Lee Bartlett, Managing Director, ITV Global Content; Jeff Cole, Director, Center for the Digital Future, USCAnnenberg School for Communication; Mark Patterson, Chief Executive Officer, Asia Pacific, GroupM and Michelle Guthrie, Senior Advisor, Providence Equity Asia.

Hong Kong has reached one million households with IPTV or about 50% of the population. Digital Television broadcast reaches 80% of the Hong Kong territory with11 channels (2 HD) and 900,000 viewers.

CASBAA Chairman Marcel Fenez started the conference stating that new channels continue to launch across Asia. Just this year 26 million new subscribers were added, bringing the number of pay-TV subscribers in Asia to 326 million. China and India have spearheaded much of the growth, accounting for 90% of all Asian pay-TV subscribers in 2009.

Mark Patterson, CEO, Asia Pacific of GroupM said: "TV is making a comeback. One third of respondents to a recent survey said they were staying in more and a quarter were watching more TV . . . Our belief is that Asians still have a significant love affair with TV."

A key to sustaining growth will be the ability of the pay-TV business to take advantage of the deployment of new digital distribution platforms. According to Todd Miller, EVP, Networks, Asia Pacific of Sony Pictures Television: "Our core business isn't changing in the foreseeable future and we have mobile extension, catch-up TV, online communities and tightening windows. All these go back to support our core business."

The three days of conference sessions, roundtables, networking breakfasts, lunches and cocktail parties reinforced the fact that the Indian market continues to be a tremendous growth story with an ever increasing channel choice and 105-million strong subscriber base.

And yet, by many measures the India market has yet to deliver on its full promise. Subhash Chandra, Chairman of Zee Entertainment Enterprises said broadcasters continue to contend with the problem of under-declaration and ever higher programming costs. Nevertheless Chandra said he expected a critical consolidation of the six DTH operators in India, which could transform the industry into profitability. A debate on video services in China also attracted attention. According to David Rubio, COO of Cisco China, there are 300 million plus internet users and more than 70 per cent are online video consumers, the majority of whom are not fully satisfied with the online video experience. Rubio said China represented a "huge opportunity" for the right delivery systems.

Anita Huang, VP of Community & Marketing of Tudou said the online video market, which for the time being, at least, is less regulated than traditional broadcast TV, offered the best opportunity for legitimate content deals. A major roadblock, she admitted, was piracy.

Huang added that although Tudou has undertaken anti-piracy initiatives, it is up to the content owners to be more proactive in terms of protecting their content online. "Work with us," she said, insisting that Tudou is open to revenue sharing deals on legitimate content.

Sports TV was also a hot topic covering the thorny issue of escalating sports rights for channels, platforms and consumers.

"Sports fans demand the best available content and that is what we deliver. We also favour the market and we are in favour of laissez faire on rights," said Russell Wolff, EVP & MD of ESPN International.

"While there is some competition for sports rights in China the reality is that only CCTV can afford the huge fees for major events such as the World Cup soccer and the Olympics," said Ma Guoli, CEO & MD of Infront Sports & Media.

During a special address, Makato Harada, Director-General, International Planning and Broadcasting Department of NHK said their network is aggressively moving into the digital age and will complete its digital transition by July 2011. "NHK now has 100% of production in HD and we are working on generating super HD. We don't know if the effort of digitalization and HD will lead directly to an increase in revenue. But if we do not make the effort to expand with new services, we could lose our leadership position, especially with younger viewers," added Harada.

Also addressing digital issues, Bernhard Glock, President of the World Federation of Advertisers, called for a concerted effort on the part of advertisers and agencies to evolve the development of advertising for the digital space.

Glock claimed that the basic principles behind effective advertising – solid consumer insight, and engaging content had not changed. The '30-second spot' will continue to be an important part of every advertiser's messaging. However, he added that "the way people experience it will be different".

On the negative side, piracy continues to grow in Asia, but at a slower pace this last year due to the digitalization of television and stepped up regulatory efforts. CASBAA's annual pay-TV piracy survey of 15 Asia Pacific markets conducted in association with Standard Chartered Bank reflects the regional growth but also generating an updated estimate of US$1.94 billion in annual revenue losses to the industry.

All told, the CASBAA convention affirmed the continued growth in Asia-Pacific market and the many opportunities for the satellite industry in the region.

Tom van der Heyden is a Hong Kong based satellite communications industry pioneer and Recruiting Consultant with **MRI China**. He can be reached at phone +852 3656-5694 or e-mail : thomas.vanderheyden@mrihk.com

Embracing the Cloud: Enabling Connectivity and Innovation

PTC'10

17 – 20 January 2010
Hilton Hawaiian Village® Beach Resort & Spa
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www.ptc.org/ptc10

A fundamental shift is occurring in the telecommunications and ICT industries. Ever more applications and services are moving from dedicated networks and end-user devices to servers on the Internet. No facet of either the telecom or ICT industries will remain untouched by this transformation.

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PETER COFFEE, Director of Platform Research, Salesforce.com, *USA*

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WTA Top Teleports Rankings 2009

The World Teleport Association released its Top Teleport rankings for 2009. The WTA ranks teleports in three categories: the global top 20; the independent top 20 (for companies not affiliated with a satellite operator) and the fast 20 for the fastest growing companies based on on a single year growth. The rankings are compiled by surveying teleport operators around the world on their facilities, services and business results.

The Global Top Twenty

1. SES (Luxembourg)
2. Intelsat (Bermuda)
3. Eutelsat (France)
4. Telesat (Canada)
5. Stratos Global (USA)
6. GlobeCast (France)
7. Echostar Satellite Services Corp. (USA)
8. Arqiva Satellite & Media (UK)
9. Telespazio (Italy)
10. CapRock Communications (USA)
11. Thaicom (Thailand)
12. Hispasat (Spain)
13. Globecomm Systems (USA)
14. Telenor Satellite Broadcasting (Norway)
15. Asiasat (Hong Kong)
16. Telecommunications Systems (Government Services Unit) (USA)
17. Singapore Telecom (Satellite Business Unit) (Singapore)
18. Spacenet (USA)
19. RRsat Global Communications (Israel)
20. Gazprom Space Systems (Russia)

The Independent Top Twenty

1. Stratos Global (USA)
2. GlobeCast (France)
3. Arqiva Satellite & Media (UK)
4. Telespazio (Italy)
5. CapRock Communications (USA)
6. Globecomm Systems (USA)
7. Telecommunications Systems (Govt Svcs) (USA)
8. Spacenet (USA)
9. RRsat Global Communications (Israel)
10. Satlynx (Luxembourg)
11. Emerging Market Communications (USA)
12. du (UAE)
13. Essel Shyam Communciations (India)
14. Telepuerto Internacional Buenos Aires (Argentina)
15. Satlink Communications (Israel)
16. CET Teleport (Germany)
17. Central European Telecom Services (Germany)
18. M-Three Satcom (Italy)
19. Jordan Media City (Jordan)
20. ATCi (USA)

The Fast Twenty

1. Europe Media Port (Cyprus)
2. Telecommunications Systems (Government Services) (USA)
3. Central European Telecom Services (Germany)
4. Telesat (Canada)
5. Satlink Communications (Israel)
6. Jordan Media City (Jordan)
7. CET Teleport (Germany)
8. Essel Shyam Communciations (India)
9. M-Three Satcom (Italy)
10. Globecomm Systems (USA)
11. Emerging Market Communications (USA)
12. RRsat Global Communications (Israel)
13. CapRock Communications (USA)
14. Singapore Telecom (Satellite Business Unit) (Singapore)
15. Echostar Satellite Services Corp. (USA)
16. Gazprom Space Systems (Russia)
17. Teleport Internacional Buenos Aires (Argentina)
18. Telenor Satellite Broadcasting (Norway)
19. Arqiva Satellite & Media (UK)
20. San Francisco Int'l Gateway (USA)

The Satellite Markets 25 Index™

Company Name	Symbol	Price (Dec 01)	% Change from 2-Weeks Ago	52-wk Range	% change from 52-wk High
Satellite Operators					
AsiaSat	1135.HK	11.78	0.68%	4.61 - 12.60	6.51%
Eutelsat Communications	ETL.PA	22.00	0.36%	14.90 - 22.98	8.32%
Hughes Communications Inc.	HUGH	25.97	0.85%	7.77 - 31.52	17.61%
Inmarsat	ISAT.L	647.00	-2.71%	378.25 - 682.00	5.13%
SES	SES.F	14.20	-5.77%	12.76 - 16.38	11.75%
Satellite and Component Manufacturers					
Boeing	BA	53.30	1.56%	29.05 - 55.48	3.95%
COM DEV International Ltd.	CDV.TO	3.29	-6.00%	2.26 - 4.15	20.48%
Lockheed Martin Corp.	LMT	78.27	1.68%	57.41 - 87.06	10.11%
Loral Space and Communications	LORL	33.95	9.52%	6.02 - 34.83	2.53%
Orbital Sciences Corp.	ORB	12.55	-2.71%	11.60 - 19.77	36.57%
Ground Equipment Manufacturers					
C-COM Satellite Systems Inc.	CMI.V	0.3350	-1.47%	0.15 - 0.39	14.10%
Comtech Telecommunications Corp.	CMTL	28.99	-10.47%	19.56 - 50.26	42.30%
CPI International, Inc.	CPII	9.61	-0.93%	5.67 - 12.93	25.68%
EMS Technologies, Inc.	ELMG	12.82	-8.82%	12.26 - 28.53	55.06%
Viasat	VSAT	30.45	-1.04%	15.90 - 31.73	4.03%
Satellite Service Providers					
Gilat Satellite Networks Ltd.	GILT	4.30	-8.70%	2.17 - 4.99	13.83%
Globecomm Systems Inc.	GCOM	8.02	2.43%	4.29 - 8.57	6.42%
International Datacasting Corp.	IDC.TO	0.27	20.00%	0.16 - 0.43	37.21%
ORBCOMM Inc.	ORBC	2.36	-4.45%	1.16 - 3.23	26.93%
Skyterra Communications	SKYT.OB	4.87	-0.61%	0.80 - 5.00	44.97%
Consumer Satellite Services					
British Sky Broadcasting Group	BSY	35.96	-1.37%	22.15 - 38.54	6.69%
The DIRECTV Group	DTV	31.89	5.21%	18.81 - 32.30	1.33%
ECHOSTAR Communications	DISH	20.89	-3.78%	8.79 - 22.18	5.82%
Globalstar, Inc.	GSAT	0.80	5.26%	0.15 - 2.00	60.00%
Sirius XM Radio Inc.	SIRI	0.63	-4.01%	0.05 - 0.78	19.54%

The Satellite Markets 25 Index™ is a composite of 25 publicly-traded satellite companies worldwide with five companies representing each major market segment of the industry: satellite operators; satellite and component manufacturers; ground equipment manufacturers; satellite service providers and consumer satellite services. The base data for the Satellite Market Index is January 2, 2008--the first day of operation for Satellite Market and Research. The Index equals 1,000. The Satellite Market Index™ provides an investment benchmark to gauge the overall health of the satellite industry.

Comparison of Indices	Index value (Nov. 2 '09)	Percentage Change 2-Weeks Ago	Jan. 2 '08
Satellite Markets 25 Index™	975.53	2.05%	2.47%
S & P 500	1108.66	1.40%	23.11%