Satellite Executive BRIEFING

Vol. 5 No. 1 January 2012

SATELLITE Markets & Research

Industry Trends, News Analysis, Market Intelligence and Opportunities

The Telecom Market: What to Expect in 2012

After expanding at 7% in 2011, Pyramid Research expects the global telecom services market to grow at a more modest 4% in 2012 as a result of the rising volatility and uncertainty facing the global economy. Pyramid expects total service revenue to reach $1.7 trillion - 2.4% of global GDP - in 2012.

Mobile broadband, enabled by the proliferation of high-speed mobile computing devices including smartphones and tablets, will be one of the largest growth areas in 2012. Particularly as the price of these computing devices comes down, enabling further penetration in emerging markets.

Pyramid Research expects to see emerging market players continue to move up in the global rankings, with developed market players losing ground. America Móvil, currently number three on the list of top global service providers, will continue to close the gap with second-ranked player Vodafone.

Further, Pyramid expects operators such as Airtel and MTN to make additional gains, while operators such as Deutsche Telekom risk falling off the list in the wake of further entrenchment. In a demand-challenged environment, operators' exposure to high-growth markets continues to be a key strategic advantage.

Other trends include:

Mobile subscriptions will pass the six Billion mark in 2012.
(image: LG)

- Mobile subscriptions will pass the six Billion mark in February, with the three billion mark being passed in Asia-Pacific in January.
- India will surpass China to become the world's largest mobile market in terms of subscriptions.
- Wimax will see the beginning of its end in Asia. Operators will favor LTE instead.
- Broadband penetration of population will pass the 10% mark globally. This milestone creates opportunities to provide consumers with information, entertainment and value-added services.
- The M2M opportunity will take higher priority on operator agendas. Investment and innovation will follow.
- A cloud computing strategy, the high-growth of the IT service market and a clear value proposition for the enterprise market will become central to operators' growth profile.
- IPTV penetration of population will pass the 1% mark globally.
- The installed base of PCs will pass 2 billion.
- The mobile handset market will surpass the $200 billion mark.

For the full version of Pyramid Research's perspective on 2012 trends, visit http://www.pyr.com/

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From the Editor

Five and Going Strong

Synthesis Publications LLC, which publishes the Satellite Executive Briefing and the web portal www.satellitemarkets.com, is going on its fifth year in 2012. When we started in January 2008, the great recession was about to kick into high gear. The S&P 500 was 1,442 and went into a deep spiral that saw its value drop almost 30% at the depth of the recession.

On our first day of business, January 3, 2008, we started the Satellite Markets 25 Index™, a composite of 25 publicly-traded satellite companies from various representative sectors of the industry. The index was pegged at 1,000 on that first day. On the first day of this year, the Satellite Market 25 Index is valued at 1,042, or about 4.2 percent higher than it was at the beginning of 2008 (see page 16). In contrast, the S& P 500, while it has substantially recovered from its lowest point during the recession, is still down by about 10 percent since January 2008. This shows that the satellite industry is doing better than the general economy. In fact, since we tracked the satellite industry in January 2008, it has not fallen more than 10 percent of its base index even during the worse of the recession.

We at Synthesis Publications are very proud to have weathered the inevitable start-up challenges and the vagaries of the worldwide recession. We face our fifth year with optimism and readiness to face new challenges. We will continue to report on this exciting industry and continue to bring you new and innovative ways to give you actionable intelligence. We will be at all the major trade shows in every continent, including Cabsat in Dubai, Satellite 2012 in Washington, D.C., Satcom Africa in Johannesburg, CommunicAsia in Singapore, Broadcast and Cable in Sao Paolo, IBC in Amsterdam to name a few to report on all the major developments globally. We hope to see you at any of the shows. It's going to be a great year.

Virgil Labrador

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Developments in Satellite Ground Systems

by Dr. Gerhard Franz and Dr. Andrea Franz

The term "Satellite Earth Station" or "Ground Station" evokes the memory of the massive 30-meter antennas of the early 1970s. However the technology has advanced over the years to the point that today we find sophisticated electronic installations in a typical "large" ground station needing antennas from the very large (13-19 meters) to VSAT (Very Small Aperture Terminal) systems with 1-2 meter antennas. The goal is still to receive the weak signal from the satellite and then to provide sufficient uplink power for the satellite to receive a signal, many times supported by automatic uplink power control systems.

On the transmit side, the baseband (whether it is video, voice, or data) signal passes through a modulator. This modulated signal at intermediate frequency (IF) is then converted to the transmit frequency using an up-converter, it passes through an amplifier and is finally coupled to the antenna waveguide for transmission through the antenna to the satellite.

On the receive side, the satellite signal is coupled from the antenna receive waveguide to a low noise amplifier (LNA), translated to IF by a down-converter, and then de-modulated to the receive baseband signal.

Frequently, equipment is used that is capable of several, or even all, of the above processes. For example, a modem takes care of modulation on the uplink and de-modulation on the downlink. A block up-converter (BUC) does up-conversion as well as amplifies the signal sufficiently for transmission through the antenna. A transceiver takes care of modulation, up-conversion, down-conversion, and de-modulation.

Services

Services of a satellite ground station can be split into two groups – those that support the operation of the satellites (including launch support, early orbit and on-station or in-orbit control), and those that use the satellite for telecommunication purposes (including the transmission of video, voice and data for broadcasters, news gathering and direct-to-the-home television). Obviously the latter group represents the vast majority of services and is subject of ever more expansion. Many more teleports focus their business on these telecommunication services.

Technical Challenges

Over the last 10-15 years the teleport industry has seen significant consolidation, in part as a reaction to the consolidation of satellite operators into a small number of companies operating satellite fleets spanning the globe. Naturally this has led to a decrease in investment in new facilities and hence a slowing of technical innovation. Furthermore, RF technology which is at the heart of the teleport equipment has always been moving slowly because of the inherently small market as compared to digital technology.

Satellites continue to provide worldwide connectivity service for video, voice and data. Particularly video transmissions have seen a continuous growth in bandwidth demand with the ever expanding use of HD programming and now the emerging 3-D technology. As more countries switch over to digital TV services this trend will continue. While initially the introduction of digital TV lead to a reduction in bandwidth this has been more than compensated by the vastly higher data rates required for HD. A typical SD program encoded in MPEG2 will require between 3-5 Mbps depending on the content (fast moving

sports events versus static talking head newscasts). In comparison, an MPEG2 encoded HD video will need at least 15 Mbps.

The advent of more efficient encoding technologies, mainly MPEG4/H.264 AVC has helped by reducing the bandwidth needs for HD video by a factor of two. Besides the increased bandwidth that a teleport operator has to accommodate there is also the significant cost associated with the newer encoding equipment that typically amounts to 2-4 times as much as the MPEG2 equivalent. Teleport operators who want to maintain their business are augmenting their installations with new equipment to provide encoding/decoding services.

Another challenge for teleport operators is the continuing move to IP within the video processing industry. The dominant connectivity solution for MPEG-based video has been ASI for many years. This point-to-point protocol is working well for streaming video. However, it requires expensive drivers in each device and connecting multiple devices is difficult. An IP based signal distribution solves all these issues: interface circuits are ubiquitous and inexpensive, point-to-multipoint distribution is simple through the use of multicasting and powerful IP switches. The impact of this technological development on teleport equipment is significant. Over the next few years the percentage of IP connected teleport equipment will grow dramatically and it is safe to say that the ASI technology will slowly disappear through the next decade. Together with the upgrade to IP based systems there is also a move towards fiber optic installations since they are much more robust, space optimized and cost-effective than the conventional cables.

The use of IP is not limited to the transport of video streams. It is also pervasive in the management of the teleport itself. IP networks enable the use of SNMP (Simple Network Management Protocol) to manage devices connected to the network. This simplifies greatly the network management of the various pieces of equipment present in teleports. Most new equipment today has SNMP agents implemented allowing the network management system to monitor and configure each device on the network. Thus, the teleport now has two parallel IP-based networks installed: one for the routing of video and data (the transport network) and a second one for the management of the equipment (the control network). This creates another challenge for the operator: while it is theoretically possible to run both data (video) and control on the same network a careful design of the network architecture is required to avoid unintended traffic collisions, particularly for the real-time streaming video. This requires an in-depth knowledge of the IP protocol and technology that may not be available at a certain teleport operation. Thus, the technical challenge translates into a staffing challenge in a way familiar in other high-tech niches where long-time experienced personnel needs to be supported by a growing number of digital network engineers who in turn may not know much about satellite technology or the intricacies of RF design leading to potential priority conflicts in the day-to-day operation of the teleport.

Finally, teleport operators need to keep up with the increasing complexity and integration of the equipment they use in their facilities. Equipment vendors are integrating increasing functionality into their devices in order to gain higher packaging densities which allow the reduction of rack space for electronic equipment giving operators the room required to install more customer equipment or add more functionality. Examples are the integration of test loop translators into BUCs for monitoring of the transmission signals, integration of web-based control interfaces in lieu of front panel buttons and dials, or the integration of fiber-optic equipment for the inter-facility links. Together with the use of IP networking these developments are enabling a much higher concentration of functionality into a standard rack unit.

Summary and Outlook:

Teleport operators face a number of technical challenges in today's rapidly growing video transport environment. Consolidation has reduced the number of active teleports but at the same time has made their operation much more complex. The increasing use of HD video has led to a dramatic increase in bandwidth. This is partially being neutralized by the growing utilization of IP network technology for the interfacility transport of data and video streams. While IP networks offer tremendous benefits to the teleport operator the challenge of proper design and maintenance of these networks cannot be underestimated. Finally, ever increasing complexity and integration on the individual equipment level is an opportunity for operators to provide more services to their clients without costly expansion of their physical facilities.

Dr. Gerhard Franz, President of **A.G. Franz Associates, LLC** (www.agfranz.com), has over 25 years of global experience in the telecommunications, aerospace and electronics industries. He received his PhD in Electrical Engineering from the Technical University of Vienna, Austria, and his Executive MBA from Rutgers University. He is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) and a member of the Society of Cable Telecommunications Engineers (SCTE). Dr. Franz is the author of several technical papers and business articles and holds two patents. He can be reached at gerhard@agfranz.com

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(The authors like to thank **William McDonald**, president of WBMSAT for his expert advice for this article).

Minimizing Risks to Satellite Facilities

by John Shoemaker and Jack Coghlan

"…service interruptions and equipment breakdowns that result in periods of downtime are obviously detrimental to revenue and profit margins. It is generally accepted by commerce professionals that lightning activity is responsible for 5% (approximately 4-5 billion dollars) of all claims each year…"

Ground based satellite audio and video services operate 24 hours a day seven days a week. They are "on-air" all of the time. Therefore, service interruptions and equipment breakdowns that result in periods of downtime are obviously detrimental to revenue and profit margins. It is generally accepted by commerce professionals that lightning activity is a primary malefactor responsible for **5%** (approximately 4-5 billion dollars) of all claims each year. Lightning has proven to be a notorious root cause of extended periods of downtime as it damages or disrupts communication equipment in all industries.

Much of lightning's foreboding destructive potential can be mitigated with the proper application of a comprehensive lightning protection system. A three tiered approach; a "protection pyramid," calling for the implementation of a proper grounding system, the installation of quality surge protection devices (SPDs), and an appropriately appointed lightning protection system will significantly reduce the likelihood of satellite communication systems suffering lightning related damage or operational disruptions. Each of these actions symbolizes a method to protect facilities from damages caused by lightning induced current. Rather than treating them as independent protection stages, each tier is regarded to be an interlocking component of an overall lightning protection routine. When all three tiers are managed together as a total system, comprehensive communication equipment protection can be achieved.

The foundation tier of the protection pyramid establishes the design, installation, and maintenance of a code compliant and low impedance/low resistance grounding system that can be relied upon to protect both man and machine from catastrophic lightning activity. Upon this foundation, surge protection devices are staged to suppress the momentary bursts of energy that lightning induces on power and data lines to render them harmless to equipment loads. Crowning the pyramid is a well-designed lightning protection system that is established to protect structures against direct lightning strikes.

The primary goal of the grounding system is to maintain a low resistance level between the earth grounding electrode(s) to the surrounding soil. Higher levels of lightning immunity result as that resistance is reduced. While the National Electrical Code requires the resistance value between the earth and the grounding electrodes not to exceed 25 ohms to maintain the grounding system's safety integrity, lowering ground resistance values to levels as close to 0 ohms as possible will further inoculate the facility against lightning related damage. A cellular tower provider, for example, aims for less than 5 ohms of ground resistance.

There are numerous variables to take into consideration when designing and implementing a grounding system that have nothing to do with the grounding components. For example, the makeup and mineral consistency of the soil, its moisture and oxygen content, along with climatic temperature and seasonal weather variations that alter its resistivity, all have to be evaluated. If a growing facility, in another example, does not have a comprehensive grounding system blueprint in place when planning for expansion, then augmenting the grounding for the added growth may be inadequate, resulting with imposing increased risk factors to the entire facility and staff. A properly installed grounding system may ultimately consist of an elaborate array of grounding electrodes, soil enhancement materials, and complex installation and bonding techniques.

A compromised or corrupted grounding system or component not only poses a serious threat to human safety concerns, but also precludes any ground referencing SPD or Lightning Protection equipment from performing to its full capacity. Moreover, a compromised neutral/ground bond can create a dangerous temporary overvoltage (TOV) event between at least one phase conductor and the ground reference. Sensitive modern microprocessor based communication equipment is not as tolerant of transient events as were their predecessors. The reason being; as the number of active components incorporated within a "single-chip" microprocessor increases, the spacing between them decreases, and they are simultaneously called upon to dissipate more heat as they are called into service by greater numbers; making them increasingly vulnerable to transient overvoltage events.

State of the art surge suppressors, now more than ever, are required to protect sophisticated modern day electronic communications equipment.

SPD safety standards have been revised in recent years; calling for testing that stresses SPDs to failure, while ensuring they do so safely. The fact is, SPD failures were and still are typically caused by temporary over voltage (TOV) events,

rather than transient surge activity. While most surge suppressors have always easily withstood momentary voltage bursts, they could and would fail catastrophically when subjected to a sustained overvoltage high enough to drive them into continuous conduction. SPD safety testing, beginning in February 2007 when ANSI/UL 1449 2nd edition (and included in ANSI/UL 1449 3rd edition) was revised to include extended abnormal overcurrent test parameters. These parameters require SPDs to be subjected to a full gamut of abnormal fault current scenarios; necessitating them to conduct various amounts of fault current until they fail in a safe and orderly fashion. SPD products of yesteryear, without redesign or augmentation, do not meet the new enhanced safety requirements. A strong argument can be made that SPDs still in service and manufactured before February 2007 are not completely safe for use, thus posing another risk to a facilities operation.

The final layer, topping off the protection pyramid, regards protecting sites from direct lightning strikes. A well designed lightning protection system will meet NFPA 780 and UL 96A standards. The most common and best known lightning protection system is the traditional lightning rod, or Franklin Rod system. This approach applies a series of metal rods and cables that are designed to carry massive amounts of directly induced lightning energy safely to the ground, protecting structures from fire related hazards. While, in days past, the levels of protection delivered by the Franklin system were thought to be sufficient, they can no longer be relied upon to be the sole protection means for modern equipment loads. Charge Dissipation Systems, for example, can be utilized to counteract the charge differential that attracts a lightning strike to a structure. These devices are highly recommended for use on critical equipment sites to reduce the likelihood of being struck directly by lightning.

Lightning protection systems, based on the aforementioned protection pyramid, employing a combination of lightning mitigation technologies, grounding techniques, and quality surge protection devices come as close as is humanly possible to delivering absolute levels of lightning protection. Properly designed and installed lightning protection systems for satellite communication systems protect human beings, physical structures, and sophisticated electronic equipment.

John Shoemaker is the Technical Sales Director and **Jack Coghlan** is an Application Engineer for **Alltec Corporation**. John has over 20 years experience in the satellite industry. Jack has focused the past 20 years of his career in the surge suppression industry. John can be reached at jshoemaker@allteccorp.com and Jack can be reached at: engsupport@allteccorp.com

Cabsat 2012 To Put Spotlight on the Growing Middle East Market

CABSAT 2012
Dubai International Convention Center
Dubai, United Arab Emirates
February 28-March 1, 2012

The Middle East/North Africa (MENA) region presents a dynamic market for the satellite industry. 19 new satellites are due for launch by 2013 in the Middle East. Consumers in the MENA region prefer satellite, while pay television services in the MENA region grew by 15.3% in 2009, virtually all of this growth came from direct to home satellite services according to Euroconsult.

The satellite capacity leasing market in the MENA region has been growing at an annual rate of 4.2 percent globally with annual revenues for this segment to exceed US$ 650 million by 2018. The MENA region is predicted to see the largest FSS Ka-band demand in the world over the next two years, according to NSR.

The MENA satellite market will be the focus of the annual CABSAT exhibition to be held in Dubai, UAE from February 28-March 1, 2012 at the Dubai International International Convention Center. Over 10,000 participants from 100 countries are expected to attend to see over 300 exhibiting companies.

The GVF Satellite Summit at CABSAT will also feature a one-day forum on Satellite Interference. Participating in this high-level dialogue will be executives covering the full spectrum of the satellite industry. Representing key satellite industry associations will be GVF (the Global VSAT Forum), sIRG (the satellite Interference Reduction Group) and their members. Serving as the voice of the broadcasting sector will be WBU-ISOG (the World Broadcasting Unions-International Satellite Operations Group) and a relatively new group, the RFI-EUI (Radio Frequency Interference-End Users Initiative). Now established are three working groups with representation from all the above mentioned organizations. The goals of each group will develop plans designed to take quality assurance and satellite signal integrity to the next level.

Satellite Markets and Research will be exhibiting at CABSAT and participating in the second day of the GVF Satellite Summit Conference. The second day of the summit is entitled **'Market Drivers & Services Dynamics - Satellite Applications & Technologies in MENA'** and will comprise a blend of discussions that are topically-based and thematic in orientation together with an analysis of cutting-edge product and service solutions from the global satellite industry and positioned to meet the communications needs of the Middle East and North Africa marketplace.

Sessions will include:

- Understanding Today's & Forecasting Tomorrow's Regional Growth Drivers
- The Dynamics of Ka-band in the MENA Region
- Global & Regional Satellite Operators - Local Knowledge & Universal Dynamics
- Satellite Transponder Supply & Demand Dynamics
- Satellite-Wireless Access to Multimedia Solutions on the Move
- Mitigating Disaster, Promoting Development, Driving Sustainability; Energy, Maritime, and other Regional Verticals
- The Mission Criticality of the Communications Space
- New Regulatory Dynamics: MENA Administrations in a Global Context
- The DVB-S2 Technology Advantage
- Sustainable Development Solutions via 'SatCommunity' CSR Initiatives

If you are looking to expand in the growing MENA market, CABSAT is a must-attend event.

For more information on the GVF Satellite Summit at CABSAT go to www.gvf.org. For more information on CABSAT go to www.cabsat.com.

Industry*Briefs*

Major industry news and developments

MERGERS & ACQUISITIONS

Astrium Completes Acquisition of Vizada

Astrium, completed the acquisition of Vizada December 19 after receiving the necessary regulatory approvals. Vizada is a provider of global satellite communications services and will be integrated into Astrium Services. This acquisition represents a total consideration of € 673 million.

"We are happy to welcome Vizada into the EADS Group, which concludes a successful year for us in terms of acquisitions", said Marwan Lahoud, Head of EADS Corporate Strategy and Marketing Organisation. "In 2011, we have significantly strengthened our services portfolio, which is a key focus of our acquisition strategy."

Vizada comprises Vizada Americas, Vizada Networks, Vizada EMEA & Asia Pacific and Marlink. The company has more than 700 employees serving 200,000 end-customers across sectors such as maritime, aero, land, media, Nongovernmental Organisations and government/defense.

Moog Acquires Bradford for $13.1 Million

Motion control technology developer **Moog Inc.** has acquired Netherlands-based satellite equipment manufacturer **Bradford** in an all-cash deal worth $13.1 million, Moog confirmed Dec. 16.

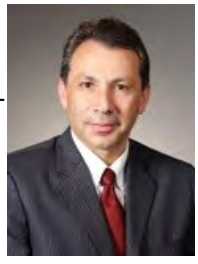
The acquisition is expected to add about $10.5 million to Moog's sales during the remainder of its fiscal year that runs through September 2012.

Bradford, which develops and builds satellite attitude and orbit control subsystems, as well as propulsion and thermal subsystems and components, will be merged with its now parent entity to complement the offerings of Moog's satellite component business.

EXECUTIVE MOVES

SES Revamps Management to Focus on Emerging Markets

SES has announced that it has increased its focus on emerging and growth markets and introduces four global sales regions with a dedicated management leading the strong SES teams in each region. The regions are: Americas, Europe, Africa, and Asia-Pacific/ India/ Middle East. They will be headed by **Elias Zaccack** (Americas), **Ferenc Szelényi** (Europe), **Ibrahima Guimba-Saidou** (Africa), and **Deepak Mathur** (Asia Pacific/ India/ Middle East). All four executives report to the Chie Commercial Officer, Ferdinand Kayser.



Elias Zaccack

Elias Zaccack has worked for SES for more than 12 years and held different positions in sales and business development in Asia as well as in the U.S. He was previously Vice President Regional Business Development Asia Pacific. He will be based in Washington and will work closely with Steve Bunke and Dolores Martos who continue to lead the sales forces in North and Latin America respectively.

Ibrahima Guimba-Saidou is joining SES from Intelsat where he was Senior Key Account Director and had different sales and marketing as well as systems operations roles over more than 15 years. His roles included the responsibility for the Intelsat representation in Africa. In his new role, he will be based in Johannesburg.

Deepak Mathur has successfully developed the activities of SES in Asia and Africa over the past ten years. He remains based in Singapore and will work closely with Glen Tindall who will continue to be responsible for the Asia-Pacific region for SES.

De Tommaso Appointed Skylogic CEO

Skylogic, the broadband affiliate of Eutelsat Communications announced the appointment of Dr. Achille De Tommaso as its new Chief Executive Officer. Current CEO, Arduino Patacchini, will become President of Skylogic.

Achille De Tommaso

Dr. De Tommaso, who most recently served as senior advisor to Skylogic's CEO and General Director, has 40 years experience in telecommunications having built and led companies such as Eurotech, Televas, Nortel Italy, Cable & Wireless Europe, Infostrada and COLT Italy. Dr. De Tommaso has also worked as a consultant for the European Union DG XIII for advanced telecommunications services. Currently also chairman of the Italian Research Center ANFoV, for the study of technologies, market and regulation of the telecommunications industry, Achille (known as Silvio) has a doctorate in Electronic Physics.

SeaChange International Leadership Transition

SeaChange International has announced the appointment of technology executive and SeaChange board member **Raghu Rau** as interim CEO, effective immediately. This follows the retirement of the Company founder, chairman, and CEO Bill Styslinger. Thomas Olson, former CEO of Katz Media Group and of National Cable Media and a former SeaChange lead director who currently serves on the Company's board of directors, has been named chairman of the board. SeaChange also announced the board

would immediately engage a search firm to identify a permanent CEO.

GlobeCast Americas Appoints Bart Palmer as CTO

GlobeCast Americas announced that **Bart Palmer** has been appointed as its chief technology officer, effective January 2, 2012. Reporting to GlobeCast Americas CEO Lisa Coelho, Palmer will play an integral role in the company's direction, with responsibility for establishing the company's technical vision and leadership. This includes managing, deploying, and developing GlobeCast's technical facilities as well as satellite and terrestrial infrastructure.

Palmer joins GlobeCast from Discovery Communications, where he was most recently senior vice president, Global Media Engineering. In more than 30 years in the industry, Palmer has served in senior management positions in a wide range of organizations including Liberty Sports, Fox Sports, and Media-Comm, and was part of the team that originated Home Sports Entertainment, the first truly regional sports channel.

Nevion Appoints Geir Bryn-Jensen CEO

Nevion chairman Per Otto Dyb has announced the appointment of technology and business development veteran **Geir Bryn-Jensen** as Nevion CEO. Bryn-Jensen, who previously served as executive vice president of sales and marketing, joined Nevion in 2010.

Bryn-Jensen brings nearly 20 years' experience in international sales and business development within the IT, telecom and broadcast industries.

Geir Bryn-Jensen

Before joining Nevion, he spent six years as director/country manager at CA Norway AS (Computer Associates). Prior to this, he was a manager at Accenture's Media & Entertainment practice, following six years in Telenor's media and broadcast business where he held various business development roles in Europe and Asia.

Worldwide Pay TV Revenues to Reach US$ 236 Biliion by end-2012

Singapore, December 20, 2011--The worldwide pay-TV market will continue to grow to generate service revenues of $236 billion by the end of next year. Cable TV operators continue to face increasing competition from IPTV and over-the-top (OTT) services. Increasing broadband penetration and the growing number of people using Internet-connected devices are supporting subscriber growth in IPTV and OTT services.

"Cable TV services will still dominate the overall pay-TV market, although this segment's market share is expected to slightly decrease from 2011. Cable TV service revenue will account for 48.6% of total pay TV revenue in 2012," says Jason Blackwell, practice director, digital home.

"In North America, where cable TV penetration is nearly saturated, cable companies are losing TV subscribers. However, the continuous growth of the cable TV market in other regions will drive global cable TV revenue to increase in the coming years. In the emerging markets, cable TV will be a better choice for consumers due to its relatively low pricing," says Khin Sandi Lynn, research analyst, broadband.

Pay-TV operators are finding different ways to improve customer growth. Multiscreen TV services, which allow consumers to receive TV content on Internet-connected devices such as iPhones and iPads, are one of the most recent innovations introduced in the pay-TV market. Pay-TV operators of different platforms have started to introduce multiscreen services, including French IPTV giant Orange, cable operator B.net in Belgium, and UK satellite TV operator BSkyB. The operators intend to build up better customer loyalty as well as raise average revenue per user (ARPU) by offering multiscreen TV services.

ABI Research has recently completed a quarterly update of its "**Pay-TV ARPU and Revenues Market Data** " which provides historical and forecast data for ARPU and service revenue forecasts for satellite, cable, and telco TV.

The study is a part of the company's TV and Video Research Service.

Global TV Advertising to Grow by US$ 60 Bil.

Middlesex, UK, December 21, 2011--Global TV advertising grew by 3.5% in 2011 to $154 billion, despite the Eurozone crisis (which hit Spain, Greece, Ireland and many Eastern European territories the hardest), natural disasters (Japan, Thailand, the Philippines and Turkey) and the Arab Spring revolts. In contrast, economic booms in Latin America and Asia Pacific led to significant growth, according to a new report from Digital TV Research.

Simon Murray, author of the **TV Advertising Forecasts** report said: "Although 2011 was positive for global ad spend, 12 territories experienced declines in TV advertising. Most of these countries were in Eastern Europe. However, it was not all bad news as 11 territories achieved double-digit growth."

Murray continued: "The global TV advertising scenario will be more positive in 2012, by increasing 5.4% to $163 billion. The much-touted quadrennial effect will take place [and also in 2016] whereby the advertising industry is boosted by the US Presidential elections, the summer Olympics in London and the Euro soccer championships in Poland and the Ukraine."

"However, only five countries will reach double-digit growth in 2012 - and five will experience declines. Eurozone uncertainty has clouded investment plans in Europe."

Global TV advertising expenditure will reach $214 billion in 2017, up 39% - or nearly $60 billion - from 2011. Television will increase its share of total advertising expenditure, reaching 44.1% in 2017 - up from 41.6% in 2011.

Although the countries featured in the top 10 will not change between 2011 and 2017, the order will. China will take second place from Japan in 2013. Brazil will overtake Germany and Russia will leapfrog France.

From the $60 billion to be added in TV advertising expenditure between 2011 and 2017, $21 billion will come from the US, followed by an extra $7 billion from China and $4 billion from Brazil. Argentina, India and the Ukraine will all record in excess of 70% growth over the same period, with five more territories exceeding 60%.

From the $60 billion to be added in TV advertising expenditure between 2011 and 2017, $21 billion will come from the US, followed by an extra $7 billion from China and $4 billion from Brazil. Argentina, India and the Ukraine will all record in excess of 70% growth over the same period, with five more territories exceeding 60%.

Events Calendar

January 15-18, **PTC 2012**, Hilton Hawaiian Village, Honolulu, Hawaii. Contact: e-mail: info@ptc.org web: http://www.ptc.org/ptc12/

January 24-26, 2012, **AFCEA/USNI WEST 2012**, San Diego Convention Center, San Diego, California. Contact: phone +1 (703) 631-6130, e-mail: events@afcea.org web: www.afcea.org/events/west/12/introduction.asp

January 25, 2012, **SIA's Naval and Maritime Commercial Satcom Users's Workshop**, San Diego Convention Center, San Diego, California. Contact: phone +1 (202) 503-1562 fax +1 (202) 503-1590 e-mail: info@sia.org web:www.navysatcomworkshop.com

February 28 –March 1, 2012, **CABSAT – The Middle East's Largest Digital Media & Satellite Expo**, Dubai International Convention and Exhibition Centre, Contact: CABSAT Team, Email: cabsat@dwtc.comTel: +971 4 306 4505.

March 12-15, **SATELLITE 2012**, Walter E. Washington Convention Center, Washington, D.C. Contact:: phone +1-301-354-2100 e-mail: register@SATELLITE2012.com web: www.satellite2012.com

2012 NAB Show® Conferences: April 14 – 19, 2012, Exhibits: April 16 – 19, 2012, Las Vegas Convention Center, Las Vegas, Nevada, USA, e-mail: info@nab.org, web: www.nabshow.com

May 8, 9, 10, 2012, **SPACECRAFT TECHNOLOGY EXPO 2012**, LA Convention Center, LA, California. US Toll Free: +1 877 842 6289, International Callers: +44 1306 871348, e-mail: info@spacetechexpo.com web: www.spacetechexpo.com/

May 21-24, 2012, **The 15th Annual SatCom Africa, Conference and Exhibition – co-located with The TV Show Africa, Telecoms World Africa and Submarine Networks World Africa** Johannesburg, South Africa. Tel: +27 (0)11 516 4030, E-mail: tarryn.volkwyn@terrapinn.co.za web: www.terrapinn.com/2012/satcom-africa/

June 19 – 22, 2012, **CommunicAsia2012**, Marina Bay Sands, Singapore, Tel: +65 6233 6638 E-mail: communicasia@sesallworld.com web: www.communicasia.com/

The Satellite Markets 25 Index™

Company Name	Symbol	Price (Jan. 03)	% Change from Last Month	52-wk Range	% change from 52-wk High
Satellite Operators					
ASIA SATELLITE	1135.HK	15.70	3.02%	13.10 - 19.50	↓ 19.49%
EUTELSAT COMM.	ETL.PA	30.06	5.25%	26.00 - 31.63	↓ 4.98%
APT SATELLITE	1045.HK	1.36	0.74%	0.95 - 3.19	↓ 61.25%
INMARSAT	ISAT.L	419.90	-3.63%	287.50 - 724.50	↓ 42.04%
SES GLOBAL FDR	SES.F	18.63	2.42%	15.70 - 19.46	↓ 4.27%
Satellite and Component Manufacturers					
Boeing Company (The) Common Stock	BA	74.71	10.22%	56.01 - 80.65	↓ 7.35%
COM DEV INTL	CDV.TO	1.99	-5.24%	1.55 - 2.88	↓ 30.90%
Lockheed Martin Corporation Com	LMT	82.72	5.60%	66.36 - 82.43	↑ 0.36%
Loral Space and Communications,	LORL	65.29	5.49%	45.65 - 82.49	↓ 20.85%
Orbital Sciences Corporation Co	ORB	14.83	1.70%	11.80 - 19.38	↓ 23.48%
Ground Equipment Manufacturers					
C-Com Satellite Systems Inc.	CMI.V	0.57	1.79%	0.29 - 0.68	↓ 16.18%
Comtech Telecommunications Corp	CMTL	29.19	-1.78%	23.51 - 35.65	↓ 18.12%
Harris Corporation Common Stock	HRS	36.90	4.09%	32.68 - 53.39	↓ 30.90%
Honeywell International Inc. Co	HON	55.82	3.90%	41.22 - 62.28	↓ 10.40%
ViaSat, Inc.	VSAT	47.36	0.11%	31.18 - 49.16	↓ 3.62%
Satellite Service Providers					
Gilat Satellite Networks Ltd.	GILT	4.03	17.94%	3.04 - 5.89	↓ 31.75%
Globecomm Systems Inc.	GCOM	14.50	4.30%	8.96 - 16.43	↓ 11.75%
INTL DATACASTING J	IDC.TO	0.30	13.21%	0.25 - 0.47	↓ 36.17%
ORBCOMM Inc.	ORBC	3.14	-6.27%	1.98 - 3.86	↓ 18.65%
RRSat Global Communications Net	RRST	3.76	-14.55%	3.77 - 8.03	↓ 52.05%
Consumer Satellite Services					
BRITISH SKY ADS	BSYBY.PK	46.38	-3.60%	38.92 - 56.30	N/A%
DIRECTV	DTV	43.46	-7.49%	39.82 - 53.40	↓ 18.58%
DISH Network Corporation	DISH	29.01	10.11%	19.51 - 32.56	↓ 10.87%
Globalstar, Inc.	GSAT	0.58	11.08%	0.35 - 1.55	↓ 62.81%
Sirius XM Radio Inc.	SIRI	1.87	2.75%	1.27 - 2.44	↓ 23.36%
S&P 500 INDEX,RTH	^GSPC	1,280.82	3.42%	1,074.77 - 1,370.58	↓ 6.57%

INDEX	Index Value (Jan. 03)	% Change from Last Month	% Change Jan. 03, 2011
Satellite Markets 25 Index™	1,042.06	0.43%	-17.12%
S & P 500	1,280.82	3.42%	0.70%

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 Markets Index™ is January 2, 2008--the first day of operation for Satellite Market and Research. The Index equals 1,000. The Satellite Markets Index™ provides a benchmark to gauge the overall health of the satellite industry.