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SATELLITE Markets & Research

Industry Trends, News Analysis, Market Intelligence and Opportunities

Satellite Continues to Play Vital Role in African Market

by Peter I. Galace, Contributing Editor

Over the last five years, Africa's total inventory of terrestrial transmission networks more than doubled brought about by the deployment of at least 16 undersea fiber-optic cables that now connect the continent to the rest of the world. All African countries with coastlines, except Eritrea and Western Sahara, now have cable landing on their shores, tripling the internet capacity in Africa over the past three years.

Recent predictions that demand for satellite services would drop sharply as the amount of operational fiber in Africa increase have, however, proved to the contrary. Overall usage for satellite capacity in Sub-Saharan Africa increased at an 11% compound annual growth rate (CAGR) over 2009–2014 despite the spread of terrestrial fiber networks and the decrease of international trunking. Research firm Euroconsult further anticipates an 11% CAGR for capacity leased over the next decade, for a total of close to 200 Gbps of traffic flowing over satellite.

And because fiber laying in Africa has mostly been restricted to big coastal cities facing North Atlantic, South Atlantic, and Indian Oceans, where World Bank data estimates that only 37% of Africa's 1.16 billion people actually live, satellite remains to be the most effective and viable way to reach rural areas, and thus the majority of the population. As demand for satellite connectivity continues to take-off, satellite equipment manufacturers and providers are racing to improve their technologies so that costs can come down.

Broadband access is one of the main drivers for satellite demand in Africa. Satellite remains to be the most effective and viable way to reach rural areas, where the the majority of the population reside.

The ongoing massive digitization of Africa, the second largest continent after Asia, is not totally surprising. Yogesh Gokool, head of international banking at AfrAsia Bank, predicts that a gradual strengthening of the world economy and improvements in political and social stability in African countries currently affected by conflicts, the continent will continue to develop its digital infrastructure as it is set to record a projected +5% economic growth in 2015.

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From the Editor

First Quarter Results Point to Challenges Ahead

At Satellite Markets and Research, we cover the major stories that provide insights into the current state of the industry, trends, opportunities and where the industry is going. These stories typically are financial results, mergers and acquisitions and digests of market studies as opposed to contract signings and product announcements (though we cover those too—the significant ones, not each and every one).

April and early May is usually when companies release their first quarter results. In the website, **www.satellitemarkets.com**, you'll find reports and analysis of the results released by the key satellite companies. To give you a brief overview, the major satellite operators ie. Intelsat, SES and Telesat are holding steady in first quarter posting modest increases in revenues. However, almost all of these companies portend some challenges ahead.

Cutbacks in military spending and intensifying competition in emerging markets are some of the key issues affecting satellite companies' bottom lines. In one of the largest markets for satellite services, the Asia-Pacific region, a capacity glut is developing which is depressing prices for satellite services. This is evident in the results announced by Asia-base operators such as Asiasat and APT Satellite.

On a positive note, the subject of our cover story this month-the African satellite market continues to grow and has weathered challenges from competition from fiber and no sign of a glut yet despite large investments from satellite operators in the region.

Virgil Labrador, Editor-in-Chief

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African Satellite Market ...From page 1

Mobile Phones, Apps Driving Satellite Growth

Satellite use in Africa is driven largely by mobile telephone service in need of international connectivity. Increasing use of smartphones that require Internet-based mobile applications is fuelling further growth. The success of mobile operators in Zimbabwe, Uganda, Rwanda and many other land-locked African countries are proof enough. These countries now operate their own international gateways using Earth stations for worldwide voice and data transmissions.

Today Africa has become the second most connected region, posting the fastest growth worldwide in mobile subscriptions. Because of rapid mobile use in Nigeria, Kenya, Egypt and South Africa, the continent is on track to hit one billion mobile subscriptions this 2015, according to Informa Telecoms & Media. Several countries, such as Seychelles, Tunisia, Morocco and Ghana, even have mobile subscription penetration rates over 100%.

There were 778 million mobile subscriptions in Africa at end-June 2013 and will reach 1.2 billion by end-2018, predicts Informa Telecoms. Frost & Sullivan has also predicted that mobile phone penetration in Sub-Saharan Africa is expected to increase by 79% by 2020. Mobile broadband connections are also expected to quadruple from its 2012 mark to reach over 160 million by 2016.

Satellite use in Africa is driven largely by mobile telephone service in need of international connectivity. There were 778 million mobile subscriptions in Africa in 2013 and is projected to reach 1.2 billion by end-2018, according to Informa Telecoms.

Mobile voice revenues in Africa are forecast to continue growing over the next few years, whereas voice revenues in many other major regions are either already declining or expected to decline before long.

Mobile data usage and revenues are growing strongly and at a significantly faster rate than voice revenues, albeit from a fairly low base. Annual mobile data revenues on the continent are expected to rise from US$8.53 billion in 2012 to US$23.16 billion in 2018, according to Informa forecasts. Data accounted for 14.3% of mobile service revenues in Africa in 2012 but will account for 26.8% in 2018.

With further increase in mobile penetration, along with universal access requirements, 3G and potentially 4G expansions are expected to create new satellite connectivity requirements.

Cables Up Demand for Satellite Connectivity

Hamilton Research reports that as of June 2014, the total inventory of submarine cable networks has increased to 958,901 route kilometers, compared to 465,659-km in 2009. Over the same period, Africa's international Internet bandwidth increased twenty-fold exceeding the 2 Tbps mark. As early as December 2013, Africa's total international Internet bandwidth reached 2.034 Tbps, a 38% increase compared to 2012, according to Hamilton's Africa Bandwidth Maps.

As a result, the number of internet users on the continent grew seven times the global average, clocking more than 3,600% growth between 2000 and 2014. Internet World Statistics says Africa had 308,260,678 Internet users at end-2014, a 26.6% penetration rate. Incredibly the use of satellites to provide Internet, TV and other telecom services are also rising steadily.

"The tripling of TV signals in the last five years, growth in cellular backhaul requirements and the addition of more than 15,000 VSATs for various vertical segments have all contributed to the emergence of new requirements," says Pacome Revillon, CEO of Euroconsult. "The significant addition of satellite capacity supply has resulted in a fill rate decrease and in greater competition and pricing pressure."

This growth in satellite use is observed to be market driven and the incumbent telecommunications operators and broadcasters are no longer in control of the situation. The demand for affordable broadcasting services, access to the internet, corporate data services and competition in the industry is forcing the situation.


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Satellite rendition courtesy of the Boeing Company

Eyal Copitt, senior VP fof sales for Africa and Asia of Spacecom, the operator of the Amos satellite fleet, says the effect of fiber to Africa is actually "great" and "awesome" for the satellite industry. "This is one of the biggest boost to our business because the growth in capacity in the African markets means only more business for us in the last mile." Traditionally, satellite companies like Spacecom, he said, used to compete for the international trunking. But the market has since changed. "We don't really focus on international trunking anymore. We're now focused on the last mile."

Copitt says satellite is the fastest and the cheapest way to establish last mile. "If we look at Africa today, Internet is mainly used for e-mail browsing; not yet for e-commerce, for e-government, e-medicine or e-learning. But they're coming. When those applications come, there are ready consumers waiting. And the consumers need the last mile. Therefore, I believe in the next few years satellite services in Africa will continue to grow at a very rapid pace."

Copitt notes that Africa is building mostly new telecoms infrastructure in the whole continent. He observes that everything being built is "state-of-the art, the best infrastructure one can find in worldwide." He adds this can only be good for the satellite industry as well.

First-time travelers in Nairobi, Dar es Salaam, Kampala, Kigali, Lagos, Cairo and many more also observe the proliferation of VSAT antennas on the skylines as well as Direct-to-Home (DTH) dishes on homes, proving the growing importance of satellite communications in Africa.

Shortages in C-band down-link capacity into Africa is dropping and Ku-band coverage, which used to be restricted only to sub-Saharan Africa, South Africa, and now West Africa will be a thing of the past with recent satellite launches.

Surging DTH

While economies around the world struggle with the remnants of a recession, a shrinking audience and a saturated market, African nations are moving ahead and have become the trailblazers in digital TV. New markets open up every day, bringing new opportunities for platform operators and broadcasters from all over the world.

Digital TV growth is still only in its early phase and the transition process to digital terrestrial television has just begun. In parallel, satellite pay-TV, despite the signing of close to 10 million subscribers in the last ten years, is only beginning to penetrate the market.

SES has observed that Africa's evolving middle class is demanding better TV and are desperate for content. This demand for digital media content delivered directly to homes across Africa has prompted Africans to turn towards satellite, which has vast coverage and a reach that's undaunted by mountain, desert, jungle. With about 10 satellites over Africa, SES is taking advantage of new markets opening up, partnering with top broadcasters to deliver thousands of hours of the latest TV content every day. SES says its satellites have the ability to reach over 300 million Africans who live many kilometers from the nearest fiber.

Intelsat also claims to reach the largest number of viewers than any other DTH platform. Pay-TV giant MultiChoice offers an amazing channel selection on IS-20 where free-to-air programming is also available across Sub-Saharan Africa. Intelsat 20 at 68.5° E has approximately 460 SD and HD channel and hosts Africa's largest DTH platform, MultiChoice's DStv, and several other pay and free-to-air DTH platforms. It has about 5 million pay-TV subscribers and millions free-to-air subscribers in Ku-band. Intelsat 28 at 33°E also provides Angolan DTH video neighborhood and has approximately 25 channels in Ku-band.

DStv, based in South Africa, is currently one of Africa's largest satellite television provider. The company provides over 100 video and over 78 audio channels, and in 2008 introduced its first HD video channel. Since then an additional five HD channels have been introduced — namely M-Net HD, SuperSport HD, Discovery HD, SuperSport HD 2, M-Net Movies 1 HD and SuperSport HD 3.

Kenya is predicted to continue considerable digital TV growth, but it may be showing signs of overheating. Kenya now boasts two pay DTT platforms, a cable network and four satellite TV operators, although many observe this is too many for a country with only 2.87 million TV households.

Pay-TV Revenues Soaring

Pay-TV revenues in Sub-Saharan Africa will reach US$ 6.22 billion in 2020, up from US$ 3.54 billion in 2014 and US$ 1.92 billion in 2010, according to the latest report from Digital TV Research. Excluding South Africa, pay-TV revenues will climb from US$ 830 million in 2010 to US$ 1.73 billion in 2014 and US$ 4.12 billion by 2020.

Digital TV Research forecasts that South Africa and Nigeria will contribute more than half of the region's pay-TV revenues by 2020 for the 34 countries covered. Second-placed Nigeria will more than double its revenues from US$ 449 million in 2014 to US$1.15 Billion in 2020.

Satellite TV accounted for 92% of the 2014 pay-TV revenues, although pay DTT will make inroads (contributing $802 million in 2020 – quadruple the 2014 total). Competition and take-up of the cheaper DTT packages will force ARPU down in most countries.

Of the 12.92 million pay-TV subscribers at end-2014, 9.65 million were pay satellite TV and 2.81 million pay DTT. The pay total will more than double to 27.95 million by 2020, with satellite TV contributing 16.21 million and pay DTT another 9.44 million.

Simon Murray, principal analyst at Digital TV, said "Three companies [Multichoice (DStv and GOtv), Canal Plus and StarTimes] accounted for more than 90% of pay-TV subscribers in Sub-Saharan Africa by end-2014. He also outlined plans for at least 30 major platform launches in 2015, at least twice as many as in 2014.

Other Drivers of Satellite Growth

In addition to pay-TV, there are other growth drivers for satellite connectivity. Euroconsult says a variety of segments, such as oil & gas, banking, mining, and government networks will require more connectivity as operations either diversify or expand geographically.

A number of new enterprise hot spot markets are evolving particularly in East and West Africa in addition to the historically strong VSAT markets like South Africa, Nigeria, Angola, Kenya and Tanzania. This should contribute to overall market growth across Sub-Saharan Africa

Broadband access for consumers and enterprises offers new opportunities on the back of new high-throughput satellite (HTS) capacities and services. Also, the usage of HTS capacity for trunking should increase for landlocked countries like DR Congo and South Sudan at least in the short to medium term as fiber availability remains limited and unreliable

Euroconsult, however, advises operators to create new differentiators will be key in a context of large capacity supply, which includes the development of video neighborhoods, selected service platforms and the co-development of projects with local service providers and end-users. For service and equipment providers, the roll-out of more sophisticated and hybrid solutions offered through domestic hubs and a potential consolidation of service providers should contribute to market growth, says Euroconsult. The emergence of new free-to-air and pay-TV platforms should also shape the future African TV market.

"...If we look at Africa today, Internet is mainly used for e-mail browsing; not yet for e-commerce, e-government, e-medicine or e-learning. But they're coming. When those applications come, there are ready consumers waiting. And the consumers need the last mile. Therefore, I believe in the next few years satellite services in Africa will continue to grow a very rapid pace..."

-Eyal Copitt, Senior VP-Amos Spacecom

Recent Launches Add to Africa Satellite Capacity

SES Astra 2G. Entering commercial service in June this year is SES Astra 2G satellite, which was launched on December 28 last year on board an ILS Proton Breeze M booster. Astra 2G, deployed at the 28.2°/28.5°, was built for SES by Airbus Defense and Space. Based on the Eurostar E3000 platform, the spacecraft carries 62 Ku-band transponders as well as 4 Ka-band transponders. It will enable the delivery of next generation broadcast and broadband services in Europe, the Middle East and Africa. Astra 2G, which had a launch mass of 6 tons, will feature a wingspan of 40 meters once its solar arrays are deployed in orbit, generating 13 kW of spacecraft power at the end of its 15-year design lifetime.

Martin Halliwell, chief technology officer of SES, says the spacecraft includes the capability to connect West Africa to Europe via Ka-band. It will operate in combination with Astra 2E and Astra 2F which were launched in September 2012 and 2013, respectively.

O3b Networks. Following the successful launch from the Space Center in French Guiana of its four more satellites in December 18 last year, O3b Networks Limited has become one of the more important satellite players in Africa. The launch increased O3b's satellite constellation to 12 adding capacity and performance in providing connectivity to customers around the world.

In March this year, a Chad ISP and pay-TV operator became the first customer to utilize the O3b network in the Sahel countries of Africa. Under the agreement, Presta Bist will use O3b as their backhaul provider from Chad to the internet.

Presta Bist is the first customer from the Sahel countries (Chad, Niger, Burkina Faso, Mali, Central African Republic) to sign up with O3b's service, and the 10th contracted client in Africa since its launch in 2014.

O3b says its product line delivers comparable latencies to long haul fiber, with round-trip times under 150 milliseconds and throughput up to 1.6 Gbps. The result is high quality voice and video that cannot be achieved by traditional geostationary (GEO) satellite providers. Utilizing the O3b network will allow Presta Bist to provide a triple play solution of VOIP, Internet and TV (VOD) over broadband wireless network to its consumer subscribers, while also better addressing corporate customer needs.

Moussa Radjab, CEO of Presta Bist, said the deal is a great step forward for internet access in Chad. "The broadband services we will now be able to offer are far superior to anything possible using current fiber connections or GEO satellites," he said.

Also in March, Hormuud Telecommunication signed a multi-year agreement to deploy O3b's satellite network connectivity in the capital Mogadishu, as well as central and southern Somalia. The Somali Mobile Network Operator will be deploying O3b's trunking solution, O3bTrunk, in the capital city, as well as O3bCell for mobile backhaul in other areas of central and southern

Somalia.

The deployment of O3b connectivity is part of a broader roll out that will cover most of the big towns in the Southern and Central regions of Somalia using the new O3b satellite services. O3b Networks will land 700km wide satellite beams in Central and Southern Somalia to provide Hormuud with reliable connectivity across these regions.

In another significant contract in Africa in March, O3b signed a multi-year agreement with Golis Telecom to bring high-speed connectivity in the Puntland region of Somalia. Golis will deploy O3b's trunking solution as well as O3b's mobile backhaul product.

With more deals in the pipeline, O3b is rapidly emerging as one of the leading providers of satellite connectivity in the continent.

<u>Spacecom's Amos satellites.</u> Spacecom is set to launch Amos 6 at 4°W orbital position in the fourth quarter this year. It will feature 3 Ku-Band beams covering Middle East, Central East Europe and Pan-Europe; and 36 HTS Ka-band spot beams over sub-Sahara Africa and Europe.

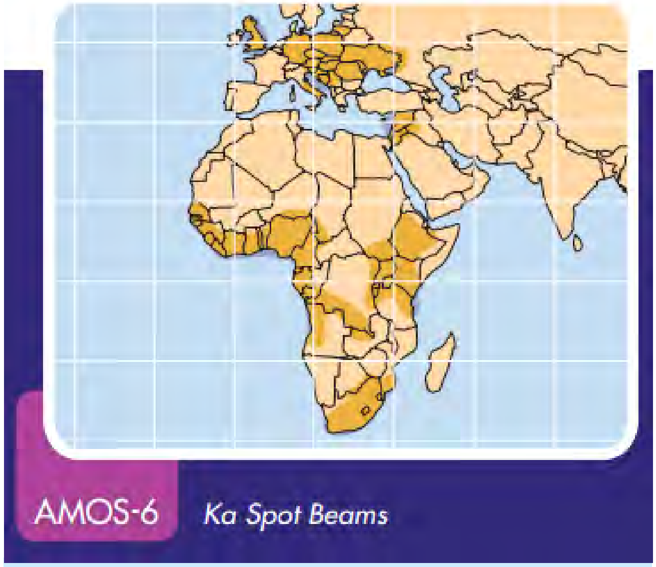
Spacecom says Amos-6 will offer existing and new customers a reliable growth-engine for their business. It will support a full range of services, including DTH, video distribution, VSAT communications and broadband Internet.

Spacecom started in Africa a few years ago with Amos 5 by offering coverage in C-band and regional coverage with 3 Ku-beams. Spacecom's Eyal Copitt said the service was a huge success and people wanted more. This prompted Spacecom to bring one of the beams of Amos 4 located in 65°East to serve the Horn of Africa. So Spacecom is now offering additional Ku in Africa. He adds that they now have three teleports serving 24 beams in Africa.

Copitt adds that Amos 6 was designed to offer one of the most competitive solutions in Africa at the most cost-effective price.

<u>Express AM7.</u> Express AM7 was launched on March 19 this year by the Russian Satellite Communications Company (RSCC).

The spacecraft is based on the Airbus Eurostar E3000 satellite platform and is located at 40° East longitude. Express-AM7 hosts 62 active transponders — 24 in C-band, 36 in Ku-band and two in L-band and with coverage of the United Kingdom, to South Africa, to India. The satellite will provide television and radio broadcasts, broadband access, multimedia, data, telephony and mobile communications services.



Scheduled for launch in Q4/2015 to the 4°W orbital position, Spacecom's AMOS-6 satellite includes 3 Ku-Band beams covering Middle East, Central East Europe (CEE) and Pan-Europe; and 36 HTS Ka-band spot beams over sub-Sahara Africa and Europe. The co-location of the AMOS satellites at the 4°W orbital location provides in-orbit satellite redundancy, enabling backup capabilities and high service reliability.

<u>ABS-3A.</u> ABS-3A, a 702SP satellite, was successfully launched aboard a SpaceX Falcon 9 rocket from Cape Canaveral, Florida on March 1 this year. Built by Boeing Space Systems, ABS-3A is equipped with 48 x 72 MHz C and Ku-band transponders and will offer expanded communications and broadcast capacity connecting the Americas, Europe, the Middle East and Africa at 3°W.

ABS-3A is known to be lighter and smaller than a conventional satellite due to the use of the all- electric propulsion system, making it more economical to launch. A conventional chemical satellite uses 50% of its weight during the ascent into orbit.

ABS-3A is the first of two satellites planned by ABS for launch in 2015. ABS-2A is due to be launched in the fourth quarter of 2015 and will represent the same technological innovation at the leading edge of the industry.

<u>Al Yah 3.</u> Yahsat, the UAE-based satellite operator, a wholly owned company of the Mubadala Development Co. and Orbital Sciences Corp., is on track to launch the Al Yah 3 spacecraft and payload. Al Yah 3, which is based on Orbital's GEOStar-3 platform, is an all Ka high throughput satellite. It is set to be launched by Arianespace in the fourth quarter of 2016 using an Ariane 5 ECA rocket from the Guiana Space Center.

Marcus Vilaça, acting chief technical officer, said in January this year the Preliminary Design Review of Al Yah 3 satellite has been completed. "We are on track to launch as scheduled for Q4 2016. While progress is underway with developing our third satellite, we are actively engaging with potential partners in Africa and Brazil enabling us to deploy much needed connectivity to underserved markets," he said.

Once operational, Al Yah 3 will enable the delivery of affordable broadband, to over 600 million users, specifically covering more than 95% of the population in Brazil and 60% of the population in Africa.

<u>Intelsat's 33e Satellite.</u> Also launching in 2016 is Intelsat 33e that will provide coverage of Africa, Europe and Asia. The Intelsat EpicNG high-

throughput satellite is a high performance satellite platform based on an open architecture, designed to deliver carrier-grade, dedicated high throughput capacity providing three to five times more capacity per satellite than Intelsat's traditional fleet. The expected throughput of the satellites will vary according to application and satellite but is expected to be in the range of 25–60 Gbps, typically 10 times more than our traditional fleet. Intelsat EpicNG is also designed for carrier-grade, fixed data rate services, versus consumer-grade, highly contended best effort-broadband applications.

Intelsat's 33e is part of four Epic satellites bought from Boeing. Intelsat has described Epic as applying technologies normally associated with Ka-band consumer broadband high-throughput satellites to the C- and Ku-bands.

Another satellite for Africa being readied is Azerspace-2/Intelsat 38 scheduled for launch in 2017. In February 17 this year, Intelsat and Azercosmos OJSCo., the national satellite operator of Azerbaijan, signed a strategic agreement to closely collaborate on the design of the Azerspace-2/Intelsat 38 satellite at 45 degrees East orbital position.

The new satellite will provide continuity of service for the Intelsat 12 satellite currently stationed at 45° East, an orbital location which hosts DTH platforms and provides connectivity for corporate network services in Africa. The new satellite will also provide services across Central and Eastern Europe, Asia and Africa.

For Azercosmos, the new satellite offers enhanced capacity, coverage and service offerings to support the growing demands in the region for DTH, government and network services currently supported by Azerspace-1.

Challenge to the Satellite Industry

The advent of HTS services slowly but surely entering the African landscape and satellite access servicing to the end-user is nearing the 10Mbps, 15GB at $50/month service points. Dr. Dawie de Wet, CEO of Q-KON, distributor of satellite products in Africa, says understanding the satellite supply value chain is critical in the success of satellite deployment in Africa.

He notes that at these price and performance points, there should have been an upsurge in subscriber growth, and Africa should be mirroring North American levels of one million subscriber terminals. He says the vast geographical landscapes of Africa, linked to the lack of extensive ADSL networks and the limitations of 3G services, create the perfect opportunity for large-scale satellite deployments.

But he doubts the remainder of the value channel will be able to fulfill its obligation. He says there are many challenges within the greater value chain and there are many requirements to ensure large-scale deployments of satellite services.

The first, and probably most significant, challenge, he says, is that satellite service is, and always will be, a niche service.

Often considered more of a necessary evil than a strategic differentiator, satellite services do not form part of the mainstream focus of leading telcos, and in fact, satellite revenue is less than 10% of telco revenues. De Wet says this represents both an opportunity and a challenge. The opportunity is for niche and focused service providers to drive the delivery of satellite services and to do so in a way that compliments the services from the major telcos.

"However, being niche service providers, the capital and investment required to drive large-scale satellite deployments is often not available. What will be needed is the development of medium tier service providers which can drive the next phase of HTS deployments; these will be niche providers which can indeed amass the resources required for HTS services, while being small enough to appreciate the returns offered."

De Wet adds large-scale satellite service deployments require very different capabilities, the cost of warehousing, logistics, field trucks and field engineering costs are becoming the dominant element in the cost equation.

Related to the logistical problems cited by De Wet is actually connecting African homes to the grid. The problem of Africa now lies not in capacity but in connectivity. Once docked at the coast, the fiber connections need to make it to homes and businesses. While most African countries are now connected to the fiber-optic grid, the lines have not reached the "last mile," that is the actual physical connection to homes or businesses.

The biggest challenge has been the last mile connections, especially outside urban areas where there are significant difficulties in accessing broadband internet.

A lot of the people living within 25kms of a fiber-optic cable think Internet is now possible because the cable passes by their villages headed to the next town. But internet service providers do not find it viable to make significant investments laying cables to each home. In the smaller cities, towns and rural areas, wireless broadband and satellites are still the only practical options.

Satellite solutions, especially with the landlocked African countries, seem to be the obvious but various logistical, distribution and field services problems will continue to hound service providers.

Peter I. Galace is contributing editor for Satellite Markets and Research. He writes extensively on telecommunications and satellite developments in Asia and other regions for numerous publications and research firms. He can be reached at peter@satellitemarkets.com.

"Evolve or Lose Relevance"

by Elisabeth Tweedie, Associate Editor

As would be expected the main themes at this year's NAB convention were 4K, IP and clouds, frequently in combination. Nearly everywhere you turned, whether it was on the show floor or in the sessions, some aspect of these three was being shown or discussed.

Gordon Smith, President and CEO of NAB took as the theme for his opening address, "Evolve or lose relevance." Something we in the satellite world are acutely aware of in the age of IP, 4K and clouds; three of the major themes of this year's convention. Nevertheless, for the satellite industry NAB seems to have diminished in importance in recent years. There are fewer exhibitors from the industry and there is no longer a satellite stream in the conference sessions. Yet satellite continues to have a major role to play delivering video to broadcasters, cable operators and consumers, so it would seem very much to our advantage to continue to make our presence felt at the convention. SES, Intelsat, and Inmarsat took advantage of the show to highlight new initiatives.

One of the highlights of the NAB this year was the formal launch of the Sat>IP alliance. Founding members of the alliance include, in order of joining: SES, Hispasat, Nagra Kudelski, Maxlinear, Ali and Panasonic Germany. The alliance formalizes the coalition that was put together last year to develop compatible hardware for the Sat>IP technology.

Content Distribution Networks

SES was demonstrating a new end-to-end content delivery network (CDN) that can deliver both live and linear 4K TV to cable TV and broadband subscribers. Live content (sports for example) and linear content (TV shows for example) can be captured in 4K in real-time, compressed using HEVC to 20-25Mbps, converted to IP and transmitted to the teleport and playout center via satellite or fiber. At the playout center the content is encrypted with Digital Rights Management (DRM), and multiplexed and uplinked to satellite using DVB-S2X modulation, for multicast distribution to cable headends, where it is ingested to be multicast to cable and broadband subscribers. In the home the transmission is converted to unicast for distribution to Smart 4K TVs, where the chosen program is selected from an app on the screen. This concept was demonstrated using video captured just outside the south hall at the convention center in Las Vegas. It was then uplinked to SES-1, downlinked to a teleport in Woodbine, MD, uplinked to AMC-1 and delivered to the SES, Harmonic and Sony booths in the the convention center.

Intelsat, went one step further in its demonstration, showcasing delivery of content to any device anywhere at any time with its new service IntelsatOne® Prism. This is a fully automated, converged IP platform. This service allows content providers to use one platform to simultaneously transmit content to multiple devices. The service is compatible with legacy systems and includes transmission of linear video, files, VoIP, Internet access and data exchange. As Peter Ostapiuk, Head of Media Product Management at

Intelsat, explained, "In order to address the changes occurring in their business models, our media customers want services that support their needs today, but also are adaptable to future formats and standards that may be deployed in the future. IntelsatOne Prisim's IP technology supports services that provide media customers with the perfect evolution that will extend media IP networking to the sky, delivering reliable, high quality content contribution and distribution regardless of location or device. In addition the versatility of the Prism enabled services will allow our customers to adapt their workflows, simplify their operations and support both current and future media applications, optimizing their overall network costs."

Intelsat launched at the NAB itsw IntelsatOne® Prism service -a fully automated, converged IP platform. This service allows content providers to use one platform to simultaneously transmit

The demonstration at NAB, hinged on equipment and services provided by Newtec, Ericsson, PSSI and iStreamPlanet. 4K content from Discovery was processed through a UHD-HEVC encoder and the Newtec MDM satellite modem, and then uplinked to Galaxy 17 at 25Mbps in a DVB-S2X modulated stream. At the Intelsat booth at the Las Vegas Convention Center, a Newtec MDM satellite demodulator and an HEVC decoder delivered a 4:2:2, 10-bit 4K signal at 60fps. Simultaneously, but separately, an additional 5 Mbps video stream was also uplinked from the PSSI truck, to Galaxy 17, using Newtec's Mx-DMA ™ return channel technology and an Ericsson AVP3000 encoder. This stream was downlinked to a teleport in Atlanta, connected to a Newtec Dialog 41F hub, and then routed via the public Internet to iStreamPlanet's Aventus® service, for live encoding, packaging and publishing to a Content Delivery Network, (CDN) for delivery to iPads for live viewing.

The advantage of the Prism platform is that it can simultaneously coordinate several services and applications, using the same space segment, meaning that for content providers, it will not be necessary to utilize different delivery mechanisms for the multiple delivery formats that are now de rigeur for any broadcaster.

The other advantages of the system are that it can be controlled remotely using a web interface and a laptop and allows an easy upgrade path from legacy systems. The service is offered for both full-time and occasional use customers. Last year at NAB and IBC, Intelsat was also demonstrating delivery of a 4K video stream. The difference this year was that the video was transmitted as a single stream; last year it was broken into four separate streams.

The Cloud

As a reminder of how rapidly things are changing in the broadcast industry, one of the more surprising announcements at the convention came from Vince Roberts, Executive Vice President Global Operations, and Chief Technology Officer, Disney/ABC Television Group, who announced that Disney/ABC is going to transition its linear broadcast operations – global programming, playout, delivery and network operations to a unified IP cloud architecture. Effectively moving the Master Control Room to the cloud. Given that Disney/ABC is already using a cloud-based service for its "Watch ABC" App, maybe this shouldn't be quite so surprising, but Watch ABC is delivery to smartphones and tablets, a service that will obviously become increasingly important in years to come; linear TV is still the bread and butter service that garners most of the viewing hours. But as Vince explained it the adoption of cloud-based IP technologies will allow the networks to quickly launch new services without having to build large, expensive broadcast facilities.

SES also used NAB as an opportunity to talk about SES Platform Services, SES-PS, is a service that has been operating for 15 years in Europe, but is virtually unknown in the US, where SES is primarily only known as one of the "big four," i.e. a major satellite operator. However a look at the financial results for 2014, show that services account for $456M Euro or around 28% of revenue and grew 8% from the previous year. Services include SES-PS, HD+ and TechCom. TechCom, as its name suggests is provision of technical services and program management to SES customers. HD+ is part of SES-PS and is a back-end consumer business, providing a package of HD TV channels from 20 of the leading private broadcasters in Germany to around 3M households, of which just over half are paying subscribers. This service relies on Hybrid broadcast broadband TV (HbbTV). HbbTV is an initiative aimed at harmonizing broadband and broadcast delivery of content to consumers throught connected TVs and Set-top boxes. This is an initiative that has gained more traction in Europe than elsewhere.

"…As a reminder of how rapidly things are changing in the broadcast industry, one of the more surprising announcements at the convention came from Disney/ABC Television Group, who announced that they are going to transition its linear broadcast operations – global programming, playout, delivery and network operations to a unified IP cloud architecture…."

SES-PS headquartered in Munich, Germany, provides complete end-to-end video services, with a focus on value added services. It was started at the request of a customer who was looking for managed services and grew into a content neutral business with customers all over Europe, Africa and Asia. Current customers include: Fox, Sky, Discovery, TLC and the Walt Disney Company.

The service is technology agnostic. Contribution can come from in-house (co-location), satellite, fiber, or the Internet and be delivered as a linear channel or through the Internet. The media asset management is a cloud based service and can ingest analog as well as digital content. The former will be digitized for storage and transmission. Playout can be in SD or HD and include graphics support and the potential for local or regional differences. For example 80% of the playout of Fox and Turner channels in Africa is the same, but 20% varies by country. Encryption includes: Digital Rights Management (DRM), Conditional Access and Simulcrypt as well as secure streaming. Content – as a complete multi-channel TV platform or a single TV channel can be broadcast directly to households or to cable and terrestrial networks.

Given that SES operates one of the largest fleets of satellites in the world, it is hardly surprising that SES-PS would like to grow its services in North America.

The Sat>IP alliance

The Sat>IP alliance, took advantage of NAB, to have a launch event to introduce the founding partners of the alliance, and talk about its history and goals. Founding members of the alliance are, in order of joining: SES, Hispasat, Nagra Kudelski, Maxlinear, Ali and Panasonic Germany. The alliance formalizes the coalition that was put together last year to develop compatible hardware for the Sat>IP technology.

Sat>IP, which is a European standard, converts satellite signals into IP signals at the home (the technology could be located in the satellite dish, a Set-top box or in the TV) for onward distribution to all the different IP devices in the home, using pre-existing networks; WiFi or power line for example. The main aims of the alliance are: to promote Sat>IP until it becomes a worldwide standard; to provide a certification framework and to enhance the technology, particularly with regard to incorporating digital rights management (DRM). However according to Christopher Shouten from Nagra Kudelski the main objective is to answer the question, "how do we take satellite to the next generation of consumers?" Or perhaps more accurately: how does satellite continue to be relevant in the OTT world?

As yet, there are no content providers as part of the alliance; hopefully this will change, when the standard has been further developed to secure content through all devices, including those being used for a Sling type service.

There are also, as yet, only two satellite operators in the alliance. Nghia Pham, Manager Advanced Systems and Standardization, Multimedia Department, Eutelsat was asked about Eutelsat's participation, to which she replied, "we are not disinterested".

Since the inception of Sat>IP in 2004, around 40 manufacturers have developed products that are compatible with the standard.

That drones were at NAB was not surprising, what was surprising to me, was to see Inmarsat talking about them. Although really when you think about it, this is a very practical extension of its SNG service. Following six months of collaboration with Parrot, the Bebop drone has now been certified for use over the Inmarsat network. This is the first commercially available drone to stream live media over the BGAN and BGAN-HDR. Journalists will be able to use the 13oz drones, which have 14 mega-pixel cameras and image stabilization, for coverage up to 2KM away, enabling them to avoid potentially hazardous situations. Martin Turner, Director, Media Enterprises, Inmarsat summed up the advantages of incorporating the drone, when he said: "When paired with Inmarsat's BGAN and BGAN HDR services live broadcast of aerial footage can provide a unique perspective on, for example, reports on civil disturbances and natural disasters, footage which can prove extremely expensive to get any other way."

Inmarsat is clearly demonstrating that it has taken Gordon Smith's advice to heart.

Elisabeth Tweedie has over 20 years experience at the cutting edge of new communication and entertainment technologies. She is the founder and President of Definitive Direction a consultancy that focuses on researching and evaluating the long term potential for new ventures, initiating their development and identifying and developing appropriate alliances. During her 10 years at Hughes Electronics she worked on every acquisition and new business that the company considered during her time there. www.definitivedirection.com She can be reached at: et-

How Satellites Help Fill Up Your Car

When you start your car in the morning or cook your dinner at night, chances are a satellite is helping you do it. Sound unlikely? Here's how it works.

We depend on fossil fuels pulled from the Earth's crust for 82% of the energy we use. The world may not need more carbon dioxide in the air, but we still rely on fossil fuels to power our businesses, heat and cool our homes, cook our meals and move our vehicles. Investment in renewable energy has grown fivefold since 2000, but experts expect us to still be getting 75% of our energy from fossil fuels in 2035.

Image: BP

Why? In developed nations, demand is largely flat, except for transportation. But emerging economies are growing fast, lifting billions out of poverty, and the rise of their middle classes is powered by fossil fuels. So there is no end in sight in our quest for the Earth's hydrocarbon wealth.

There is a new quest, however, to recover those hydrocarbons in smarter, safer ways that have less impact on the environment. As companies search in ever more challenging places, they also need higher efficiency and lower costs so they can better handle the unpredictable rise and fall of prices. And that's where satellite and information technology are leading the way.

The Digital Oilfield

Oil and gas wells may depend on "roughnecks" to man the heavy equipment, but decisions about where to explore and how to produce are driven by Big Data. Energy companies use sensors to search, manage drilling and inspect for problems. "Digital oilfield" technology finds energy sources we could never find before. It estimates reserves and provides data that helps engineers figure out the best ways to get at them. It monitors equipment and detects failures and potential failures fast. Together, they are getting more out of known reserves and lowering the environmental and safety risks of doing it.

Stallion Oilfield Services is a customer of the satellite operator SES. It operates hundreds of drilling and production rigs across the United States. The company depends on satellite for voice communications and real-time monitoring of drilling. "Voice and data communications are the lifeline of any oil and drilling operation," says Pedro Buhigas, Director of Technology at Stallion. "We never know from one day to the next where we may be asked to go, and what type of communications we may need," he added.

Spreading the Intelligence

As Buhigas noted, today's energy companies need the talents of engineers, geologists and data analysts in more corners of the world than ever before. But that demand far outstrips the supply. Satellite links let experts work on multiple sites at the same time without ever leaving home. By spreading the talents of their best people around the globe, energy companies can run more of their operations at peak performance and reduce their risks.

SpeedCast is a service provider with operations across Asia and Africa. For a UK-based oilfield services company, it created a network that connected all of the client's offshore rigs to a single global service center. "They estimate," said a SpeedCast executive, "that centralizing their support for the rigs let them reduce overall costs by 30%."

When things go wrong in the energy business, it can have terrible impacts, from the burning oilfields of Kuwait in the first Gulf War to the Deepwater Horizon disaster. The same satellite and information technology that boosts performance can also help com-

comply better and faster with environmental and safety rules. By capturing and recording data in real-time, satellites show companies where their real risks lie and give regulators powerful tools to drive enforcement.

A Better Place to Work

Satellites and IT make the wellhead a better place to work. They bring in media and Internet connections that let crewmembers keep up with the world and connect with home. In Australia, NewSat and Amstar developed a network for Gorgon, one of the world's largest natural gas projects, which offers entertainment, Internet and telephone service to crewmembers living on the site. In boom times, the energy sector can have as many as one million job openings going unfilled, according to McKinsey, and a better workplace can help companies compete.

"Digital oilfield" technology finds energy sources we could never find before.

Satellite also makes possible remote medical care that improves the lives of crewmembers while saving their employers money. Transporting a sick crewmember just 50 miles by helicopter for medical care can cost up to $10,000. A boat ride from the Gulf of Thailand and emergency jet to Singapore can cost up to $150,000. Remote medical systems let medics at the wellhead collect health data and share it with faraway doctors, who can diagnose, prescribe care and make the decision to evacuate if needed. According to one firm, InPlace Medical, telemedicine lets teams resolve 80-85% of situations quickly without the need for transport, which delivers better care as well as saving money.

Safer Pipelines

The benefits do not end in the oil or gas field. The world's pipeline networks are key to getting the product to refineries and tanks. There are 2.9 million kilometers of pipeline in just the ten countries with the biggest networks. How can energy companies monitor such a vast web of pipe? They use satellites to gather sensor data on temperature, pressure, vibration and other critical factors. By 2022, there are expected to be 90,000 such sensors in pipelines and another 200,000 in electricity grids around the world.

For all of these reasons, the energy sector is expected to invest three times more in satellite in 2022 than it did in 2012. Today, it is spending about 25 cents per barrel of oil on satellite and IT, according to Oil and Gas Investor. That's a smart move, McKinsey reports, because energy companies can see a 10-25% reduction in operating costs as a result. That explains why nearly 60% of oil and gas executives told Lloyd's Register in 2014 that future breakthroughs in their business would be driven by "bits and bytes," not physical hardware.

You may not put a satellite in your fuel tank. You may not pop one in the oven. But satellites are helping to secure the high-energy lifestyle we lead while the world searches for more sustainable ways to power our future.

"How Satellite Make a Better World" is a project of the Society of Satellite Professionals International (SSPI) to raise awareness on the impact of satellite technology in modern life. The stories of satellite making a better world come from companies in our industry, academic researchers, nonprofit associations and the news media. Submit your own story by sending an email to: makingthecase@sspi.org.

Dish Network's Spectrum Play

by Elisabeth Tweedie, Associate Editor

Early this year Dish emerged as the clear winner in the FCC's latest spectrum auction. The company bid US$ 13.3 Billion to acquire 702 licenses. AT&T came second with 251 licenses, but these carried a price tag of US$ 18.2 Billion. Interestingly Dish accounted for 27% of all bids placed in the auction, more than the AT&T and Verizon combined. However not all licenses are created equal so a straight comparison is meaningless, but it is worth noting that AT&T paid US$ 2.8 Billion for one of the main licenses for the New York City area, whereas Dish paid US$ 3.4 Billion for three of the main licenses for that area. Some of the licenses that Dish acquired were for one-way uplink services, something that most of the other bidders were not interested in.

In the same way that a few years ago Charlie Ergen – Dish's founder, Chairman and soon to be CEO (again) – bought Lightsquared's debt through a third party, Dish's licenses were acquired through three separate entities, who at times were reported to be bidding against each other. Two of these three entities qualified for a small business discount, so the end price to Ergen will be US$ 10 Billion—a savings of US$ 3.3 Billion; unless the FCC decides that it was inappropriate to grant this discount given that Dish itself, hardly qualifies as a small business. Using multiple entities to bid, is perfectly legal and the FCC were aware of Dish's strategy. The other bidders, on the other hand were not aware of which entities were bidding against them.

We can only speculate what Dish is going to do with this spectrum, since Ergen is very tightlipped about any future plans. Spectrum is like land– there is only a finite amount and with the ever increasing demands for bandwidth it is becoming more and more valuable. According to the latest Visual Networking Index from Cisco, Mobile traffic in the USA will grow at a CAGR of 50% p.a. 2013-18. Whichever way you look at it, with those growth rates, Charlie is sitting on some very valuable real estate.

Conjecture as to what he might do with the airwaves is rife. The spectrum has to be brought into use in the next few years, so the chances of Dish creating its own mobile network are slim. However it could do so in a partnership with a mobile operator. These days the speculation centers on T-Mobile; this could be a strategic alliance or an outright purchase of Deutsche Telecom's 74% shareholding in the company. Two years ago, Ergen tried, and failed to acquire Sprint. Shortly after that, he was reported to have contacted Deutsche Telecom, expressing an interest in acquiring T-Mobile.

In the last month both T-Mobile's CEO and CFO have been dropping hints and saying some very nice things about Ergen. For example: from CEO John Legere: "It makes sense from the standpoint of integrating that spectrum and capability and deploying it at our network, Dish and we, that makes some sense." From Braxton Carter, the CFO: "he has done a masterful job of creating a very differentiated mid-band spectrum position," and "he's not interested in building his own network and we would be a very good partner for deploying his spectrum." Deutsche Telecom has tried to offload its US subsidiary in the past, it may still be interested in doing so.

With fortuitous timing for Ergen, given this recent purchase, Lightsquared filed a reorganization plan with the US Bankruptcy Court on March 17th. Ergen is the company's largest creditor and this plan would give him the US$ 1 Billion in cash that he has been asking for, rather than a settlement over five years that was the previous proposal.

The Federal Communications Commission (FCC) has been reviewing the results of the auction in the last few months and media reports are speculating that the FCC might rescind the substantial small business discounts that the companies that Dish used to obtain the spectrum licenses. Dish maintains that it followed all of the auction's rules. "We are confident that we fully complied with all legal requirements," said a Dish spokesperson.

EMC Acquires MTN Communications

Miami, FL – April 29, 2015–Emerging Markets Communications (EMC) has signed a definitive merger agreement to acquire MTN Communications (MTN), a provider of communications and content for remote locations around the world.

The combined entity will be one of the largest independent providers of satellite connectivity services for both land-based sites and maritime vessels, worldwide. The company will also be the largest provider of connectivity services, in some of the most strategic verticals within the satellite industry, backed by ABRY Partners, a private equity firm specializing in funding some of the most successful communications companies in North America, with more than US$ 42 billion of completed transactions.

EMC's global infrastructure features 52 field support centers, three wholly-owned teleports, and global satellite capacity available in C-Band, Ku-Band and Ka-Band, enabling fast installations and response times for customers worldwide. The company's value-added services leverage patented technology and have transformed the industry with products such as SpeedNet®, a cloud-based browser providing a faster internet experience over satellite.

MTN provides end-user solutions such as Internet connectivity, voice services, live global TV and mobile apps. Enterprise solutions include crew welfare tools, Web portals and video conferencing. MTN also delivers a

technical toolkit to customers for management of their own networks and optimization of their bandwidth.

The agreement is subject to regulatory review and other customary conditions, and is expected to close by second quarter of 2015.

Pico Digital Purchases Broadcast Products Business of IDC

San Diego, Calif., April 22, 2015--Pico Digital Inc., a provider of multimedia delivery solutions to customers in the broadcast, cable, satellite, and broadband markets, announced that it has entered into an agreement to acquire the broadcast products business from International Datacasting Corporation, a technology provider for broadcasters in radio, television, data and digital cinema.

The acquisition includes IDC's product portfolio, customers, and supplier relationships. Upon closing of the acquisition, the majority of IDC's employees are expected to join Pico Digital. Under the terms of the Agreement, IDC will sell its assets to Pico Digital for total cash consideration of US$ 4.1 million or approximately CAD $5.0 million at current exchange rates, subject to certain adjustments and holdbacks of up to US$1.35 million to satisfy certain performance conditions and any potential indemnity claims. The Purchase Price adjustments, if any, are linked to, among other things, net working capital at closing and company revenues and product sales during the post-closing period.

If IDC receives a bona fide superior offer to acquire all or substantially all of its assets, or at least 90% of IDC's outstanding common shares, Pico Digital will have the right, for a period of seven business days, to match the Superior Proposal. If Pico Digital does not match the Superior Proposal, IDC may pay Pico Digital a termination fee of US$200,000 to terminate the Agreement and accept the Superior Proposal.

The combined business will benefit from an expanded global footprint, including offices in the United States, Canada, Mexico, Argentina, Bolivia, Panama, Taiwan, Japan and the Netherlands as well as a worldwide base of more than 500 customers. Pico Digital and IDC have highly complementary product portfolios, and together will provide the industry's leading solutions for data broadcasting, audio distribution, and digital cinema, as well as enjoying significantly increased scope as a video solutions provider.

Boeing Names John Shannon Space Launch System VP

St. Louis, Mo., April 23, 2015–Boeing has named **John Shannon** to be vice president and program manager for the Space Launch System (SLS), which will provide NASA with heavy-lift capability to send people and cargo into deep space.

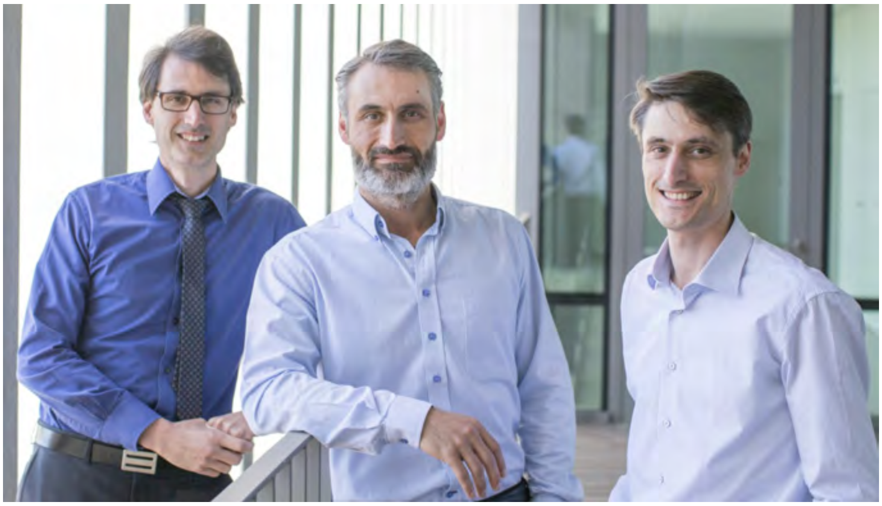
Boeing is designing, developing, testing and manufacturing the core stages and avionics for SLS. Shannon succeeds Virginia "Ginger" Barnes, who is retiring. He currently serves as the company's International Space Station (ISS) program manager, leading the Boeing team's key integration role for NASA's ISS Program.

John Shannon

Prior to joining Boeing, Shannon worked at NASA for 25 years, leaving the agency as deputy associate administrator for Exploration Planning in the Human Exploration and Operations Mission Directorate. He also served as program manager for the Space Shuttle, a role in which he managed the final fourteen shuttle missions and set the direction and policy for Space Shuttle development, including prelaunch and flight operations.

Skyline Communications Appoints Senior Executives

Izegem, Belgium, April 22, 2015–Skyline Communications, a provider of end-to-end multi-vendor network management and OSS software solutions for the broadcast, satellite, cable, telco and mobile industry, announces a reorganization of its leadership structure. Skyline's Board of Directors appointed **Ben Vandenberghe** as Chief Executive Officer, **Bert Vandenberghe** as Chief Technology Officer and **Frederik Vandenberghe** as Chief Financial Officer.



From left: Frederik, Ben and Bert Vandenberghe

Ben, Bert and Frederik Vandenberghe are brothers. Skyline Communications was founded by their father Leo Vandenberghe in 1985.

Ben Vandenberghe, primarily active in sales, marketing and product management at Skyline Communications for over 15 years, has reoriented and subsequently led the company to become one of the leding providers of end-to-end multi-vendor network management software technology.

Bert Vandenberghe, a software technology adept who has served as Software R&D Director at Skyline Communications for over 10 years, laid the foundations of the cutting-edge DataMiner software platform.

Frederik Vandenberghe joined Skyline Communications in 2010 as its Finance & Operations Director, and successfully managed to streamline HR, finance, training and operational activities, enabling the company to stay on its growth trajectory. Under the auspices of Frederik Vandenberghe, Skyline erected its new state-of-the-art headquarter facilities along the E403 highway in Izegem. In addition to that, Frederik Vandenberghe also established a permanent regional presence for the company in Moscow, London, New York, Miami and Bogota, providing professional services and consultancy to its growing customer base across more than 100 countries around the globe.

The senior executive team at Skyline is backed by a team of newly appointed directors, including: **Roger Bijos**–Sales Director Americas; **Glenn D'Haene**–Sales Director EMEA & APAC; **Steven Soenens** –Product Marketing Director; **Koen Vanwalleghe**--Finance & Administration Director; Koen Cools–System Engineering Director; **Leander Druwel–**System Solutions Director; **Simon Raine**–Quality Assurance Director; and **Jan Vanhove** –Software R&D Director.

Jonathan Kirchner Joins Globecomm Executive Team

Hauppauge, N.Y. – April 14, 2015 --**Globecomm** announced that **Jonathan Kirchner** has joined the executive team as Senior Vice President of Corporate Strategy & Product Management. He will be reporting to Keith Hall, Chief Executive Office and will lead the development of Globecomm's long-term, global corporate and product strategy.

Kirchner brings expertise in leading growth-focused global companies and creating corporate strategy, business operations and go-to-market strategies in a range of industries. Much of his technology focus has been satellite-enabled communication and earth ob-


Jon Kirchner

servation/remote sensing services; data, information and business intelligence services as well as Industrial Internet of Things (IoT).

Prior to joining Globecomm, Kirchner served as President and Chief Operating Officer of GeoOptics, Inc., an early-stage satellite-based environmental data services company. He previously served as Executive Vice President & General Manager for British-owned Arqiva Satellite & Media, managing its US operations out of Washington D.C. During his ten years at Loral Space & Communications, he started and managed the Loral/Alcatel joint venture business based in the UK and oversaw a global marketing, product management and business development team as Vice President, Global Marketing & Business Development for Loral Skynet.

Frank Biondi Joins ViaSat Board of Directors

Carlsbad, Calif., April 8, 2015–ViaSat Inc. has appointed **Frank J. Biondi Jr.** to its Board of Directors. Biondi will serve as a Class I Director effective immediately, with an initial term expiring at the Company's 2015 annual meeting of stockholders.

With the appointment of Biondi, the ViaSat Board now consists of eight members, seven of whom are independent directors.

Biondi is a senior managing director at WaterView Advisors LLC, a private equity fund specializing in media. Previously he held several positions in the television and entertainment industries, including top executive roles at Universal Studios, Viacom, the Entertainment Business Sector of the Coca-Cola Company, HBO, and the Children's Television Workshop.


Frank Biondi

Biondi currently serves on a number of other corporate boards, including Amgen, Inc., Cablevision Systems Corp., Hasbro, Inc. (expected to retire in May 2015), RealD Inc., and Seagate Technology PLC. Previous board positions include Yahoo! Inc. and Harrah's Entertainment. On the non-profit side, Mr. Biondi currently serves on the Board of Trustees for Keck Graduate Institute, which offers graduate degrees and educational programs in the life sciences field.

He holds a bachelor degree in psychology from Princeton University, and a master's degree in business administration from the Harvard Business School.

CASBAA Satellite Industry Forum to Highlight Asia-Pacific Market

CASBAA's annual Satellite Industry Forum is once again being held in Singapore at the beginning of June. The conference explores the latest developments and issues affecting the satellite industry in the Asia Pacific. Taking place on June 1st at the Grand Hyatt Singapore, the CASBAA Satellite Industry Forum 2015 is a one day event that brings together industry experts to examine a variety of hot topics and to exchange and discuss information critical to the development of the communications sector and related services across the Asia-Pacific.

The conference continues to grow from strength to strength with an impressive lineup of speakers each year and a good mix of Asian and global players in attendance. Last year around one hundred companies were represented with almost half of delegates coming from the US and Europe - with most of the balance coming from Asia.

"Satellite services account for a large portion of how television signals are delivered to consumers in the region and is an integral component of the multichannel TV business in the Asia Pacific." said Christopher Slaughter, CEO, CASBAA. "The CASBAA Satellite Industry Forum is an extremely important event in our yearly calendar and this is reflected in an active Satellite Industry Committee and a number of satellite related companies that are CASBAA members".

This year's opening Keynote will be delivered by Houlin Zhao, Secretary-General of the ITU. "Zhao only took office in January this year so for many this will be the first opportunity for people to see him in this capacity", said Kevin Jennings, Programme Director, CASBAA.

In addition, CASBAA announced that Stephen Spengler, Chief Executive Officer of Intelsat is delivering the Industry Keynote. Spengler is a satellite and telecommunications industry veteran with experience in the media, broadband, government and internet sectors and is a driving force behind Intelsat's next generation of satellite solutions.

The theme for 2015 asks "*Is The Satellite Game Changing?*" in acknowledgement of the ever-evolving industry landscape. The agenda for this year's forum will touch upon the challenges the industry is facing as the very definition of television changes to embrace new technologies, delivery methods and consumer habits.

As well as speaking with game changers and new kids on the block, the forum will discuss whether high throughput satellites the answer to reducing costs for customers. Another panel session is provocatively titled "Staring the Future of TV in the Face – A Watershed for the Satellite Industry?"

More information about CASBAA and the Satellite Industry Forum can be found at www.casbaa.com

Industry Views on the Challenges Broadcasters Face

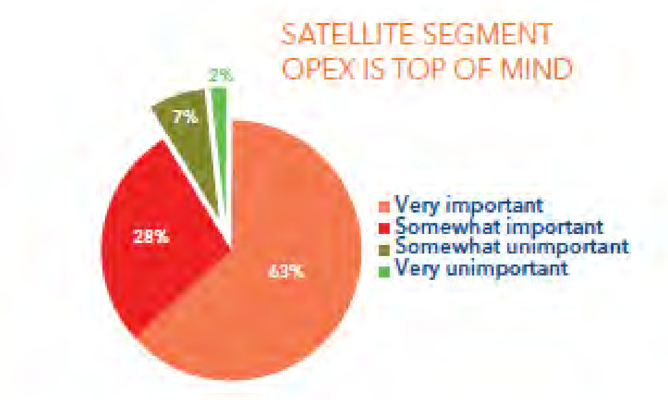
A survey by Newtec reveal industry executives' views on the key challenges broadcasters are facing today and in the near future.

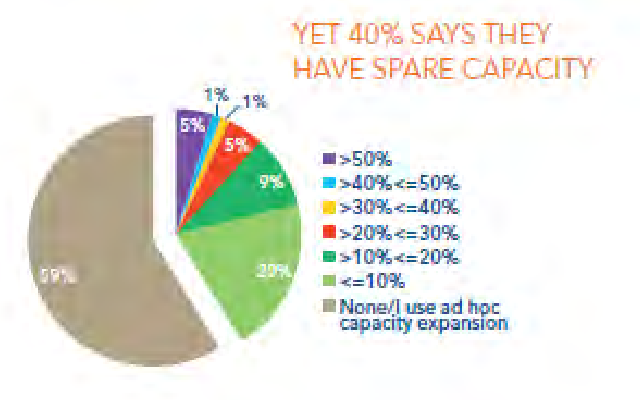
by Virgil Labrador, Editor-in-Chief

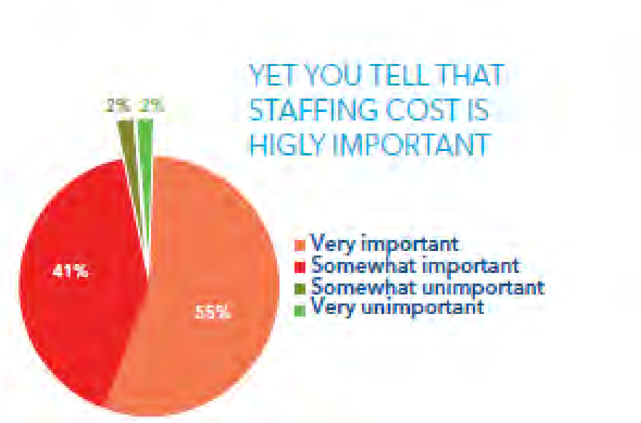
To get a overview of the perception in the industry of the challenges that broadcasters face now and in the near future, Newtec conducted a survey of 270 executives from all over the world last year. At the NAB 2015 in Las Vegas, Newtec provided Satellite Markets and Research an exclusive glimpse on the highlights of the survey on Next Generation Video Networks.

Among the key findings of the survey include:

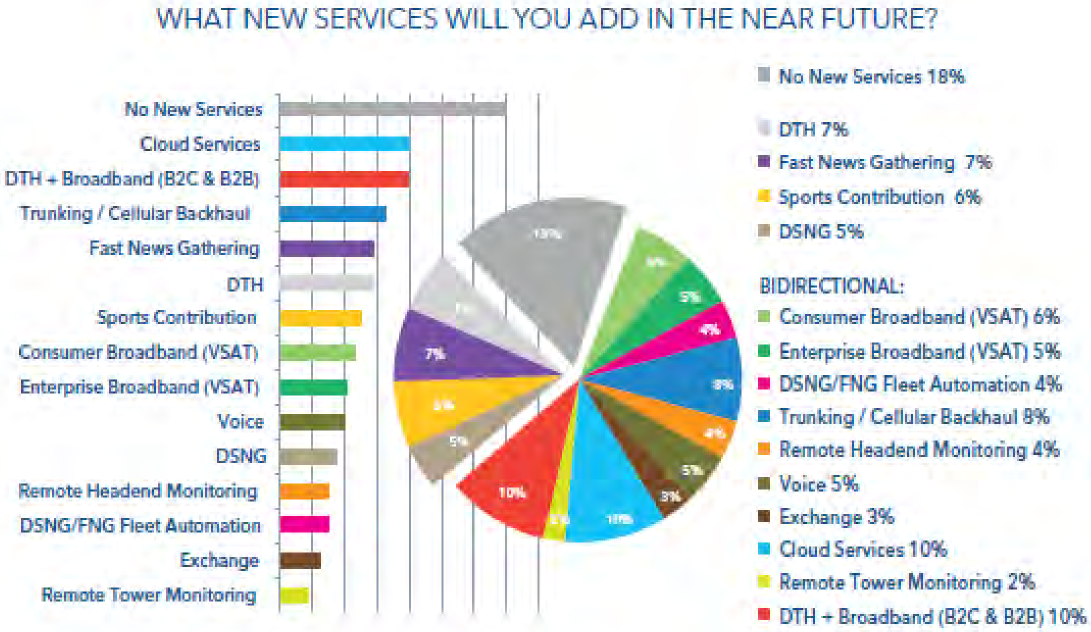
- Over 90 percent of the respondents considers the satellite segment operating expense (OPEX) as a very high expense , yet 40 percent say they have spare capacity.
- There are a substantial number of Occasional Use (OU) sessions in broadcast networks. These sessions often require a lot of manual operations, which considering staff cost is a major contributor to rising OPEX.
- The industry is constantly looking for new growth opportunities. More than 80 percent of broadcasters and broadcast service providers plan to launch additional services in the near future.
- Of the respondents using 100 percent satellite technology today, about half indicated that they intend to complement satellite networks with other technologies.







Source: Newtec Survey on Next Generation Video Networks, 2014.

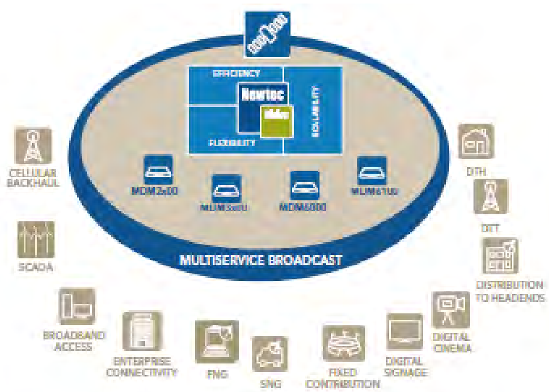


Source: Newtec Survey on Next Generation Video Networks, 2014.

- For operators using satellite transmission between 50-100 percent and 0-50 percent of OU sessions, some expect to grow the amount of satellite transmissions relative to terrestrial.

- Of the broadcasters that today have no OU services on satellite, almost 40 percent plan to start using satellite.

The key findings of the survey is quite clear: the industry is continuously searching for new business opportunities, while seeking ways to reduce OPEX and CAPEX. The industry is also definitely going towards multiservices for delivery in various platforms. To meet those challenges, an all-IP multiservice hybrid network is the best way to future-proof your service, leveraging best of breed technologies available.



A Multiservice Broadcast Network (source: Newtec)

From the responses of the executives, Newtec drew some key conclusions. Among them, balance between satellite and terrestrial transmissions will continue to exist. Thus, there wil be more hybrid networks in the future.

Newtec also found that a single platform shared between multiple services—ie. a "multiservice network" will help address rising costs while increasing network flexibility, enabling the business case for new network deployments.

A multiservice network is based on a single and future proof all-IP transport layer, independent of the underlying network layers. An all-IP multiservice network supports video, voice, data and broadband services on a single infrastructure and space segment. Different broadcast linear and non-linear workflows can run simultaneously on multiservice networks. They share the same infrastructure, operating staff and space segment, instantly reducing the level of CAPEX and OPEX while increasing business flexibility.

A unified NMS provides end-to-end visibility, monitoring and control of all network elements and accommodates scheduling and execution of broadcast workflows. A multiservice network is able to apply the optimal satellite transmission return technologies to reach the highest efficiency and quality of service (SCPC, MF-TDMA or Mx-DMA™). It is capable of hosting different applications, including cellular backhaul and enterprise connectivity.

"We believe the in the near future the industry will rely on a multi-layered network transmission protocol. Clear separation of protocol layers and applications are a prerequisite for interoperability," said Hans Massart, Market Director for Broadcast of Newtec.

The Newtec survey provided a good glimpse into the challenges that broadcasters are facing and will be facing in the near term. It's evident that in order to keep up with changing customer requirements and user demands, one must be able to provide a flexible and efficient multiservice broadcast network.

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The Satellite Markets 25 Index™

Company Name	Symbol	Price (May 01)	% Change from Last Month	52-wk Range			% change from 52-wk High
Satellite Operators							
Asia Satellite Telecommunications	1135.HK	27.40	-1.26%	25.60	33.00	↓	16.97%
Eutelsat Communications S.A.	ETL.PA	31.08	0.81%	23.33	32.71	↓	4.98%
APT Satellite Holdings Ltd.	1045.HK	12.16	32.46%	8.40	13.50	↓	9.93%
Inmarsat Plc	ISAT.L	1004.00	7.09%	653.00	1022.60	↓	1.82%
SES GLOBAL FDR	SES.F	30.975	-6.81%	25.405	34.90	↓	11.25%
Satellite and Component Manufacturers							
The Boeing Company	BA	144.67	-3.09%	116.32	158.83	↓	8.92%
COM DEV International Ltd.	CDV.TO	5.07	6.51%	3.45	5.20	↓	2.50%
Lockheed Martin Corporation	LMT	189.00	-4.89%	156.23	207.06	↓	8.72%
Loral Space & Communications, Inc.	LORL	69.05	0.85%	64.23	81.53	↓	15.31%
Orbital ATK, Inc.	OA	74.10	-2.41%	60.23	158.13	↓	53.14%
Ground Equipment Manufacturers							
C-Com Satellite Systems Inc.	CMI.V	1.12	-1.75%	1.01	1.63	↓	31.29%
Comtech Telecommunications Corp.	CMTL	29.45	-2.55%	26.30	40.69	↓	27.62%
Harris Corporation	HRS	80.45	2.22%	60.78	82.79	↓	2.83%
Honeywell International Inc.	HON	102.50	-0.98%	82.89	106.15	↓	3.44%
ViaSat Inc.	VSAT	60.29	0.50%	51.50	68.84	↓	12.42%
Satellite Service Providers							
Gilat Satellite Networks Ltd.	GILT	6.09	-6.09%	4.42	7.07	↓	13.86%
Globecomm Systems Inc.	GCOM	14.10	0.00%	-	-		-
International Datacasting Corporation	IDC.TO	0.03	-50.00%	0.03	0.14	↓	78.57%
ORBCOMM, Inc.	ORBC	6.19	5.27%	5.40	7.10	↓	12.82%
RRSat Global Communications Network Ltd	RRST	7.233	0.00%	-	-		-
Consumer Satellite Services							
British Sky Broadcasting Group plc	BSYBY	55.74	0.00%	-	-		-
DIRECTV	DTV	90.40	4.67%	77.50	91.79	↓	1.51%
Dish Network Corp.	DISH	68.52	-3.44%	56.17	80.75	↓	15.15%
Globalstar Inc.	GSAT	2.53	-23.33%	1.56	4.53	↓	44.15%
Sirius XM Holdings Inc.	SIRI	3.93	0.51%	3.09	4.04	↓	2.72%

INDEX	Index Value (May 01)	% Change from Last Month	% Change Jan. 02, 2015
Satellite Markets 25 Index™	2,116.08	2.56%	15.34%
S & P 500	2,108.29	2.00%	2.33%

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.

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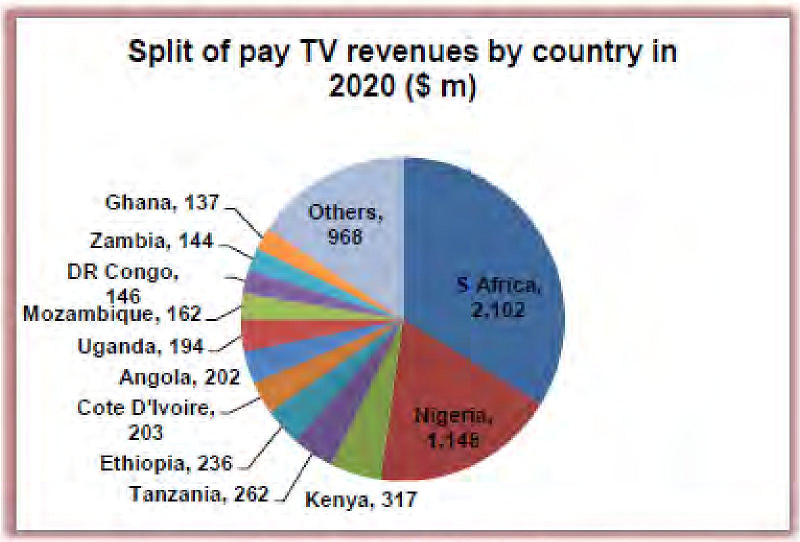
Vital Statistics

Sub-Saharan Africa Pay TV Revenues



Source: Digital TV Research

Pay TV revenues in Sub-Saharan Africa will reach US$ 6.22 billion in 2020, up from $3.54 billion in 2014 and US$ 1.92 billion in 2010, according to a new report from Digital TV Research. Excluding South Africa, pay TV revenues will climb from $0.83 billion in 2010 to US$ 1.73 billion in 2014 and US$ 4.12 billion by 2020.