



MARKET BRIEFS

**Executive summaries of market trends and opportunities
in key market segments and regions worldwide**

Africa Highlights



- Euroconsult anticipates an 11% CAGR for capacity leased over the next decade in Sub-Saharan Africa, for a total of close to 200 Gbps of traffic flowing over satellite.
- There were 778 million mobile subscriptions in Africa at end-June 2013 and will reach 1.2 billion by end-2018, predicts Informa Telecoms.
- Data accounted for 14.3% of mobile service revenues in Africa in 2012 but will account for 26.8% in 2018.

The African Satellite Market

by Virgil Labrador & Peter Galace

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.



Demand for satellite services in Africa is being driven by new applications in vertical markets such as oil and gas and maritime, as well as in traditional Pay TV, cellular backhaul and broadband access.

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.

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 sub-

scriptions. 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.

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

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

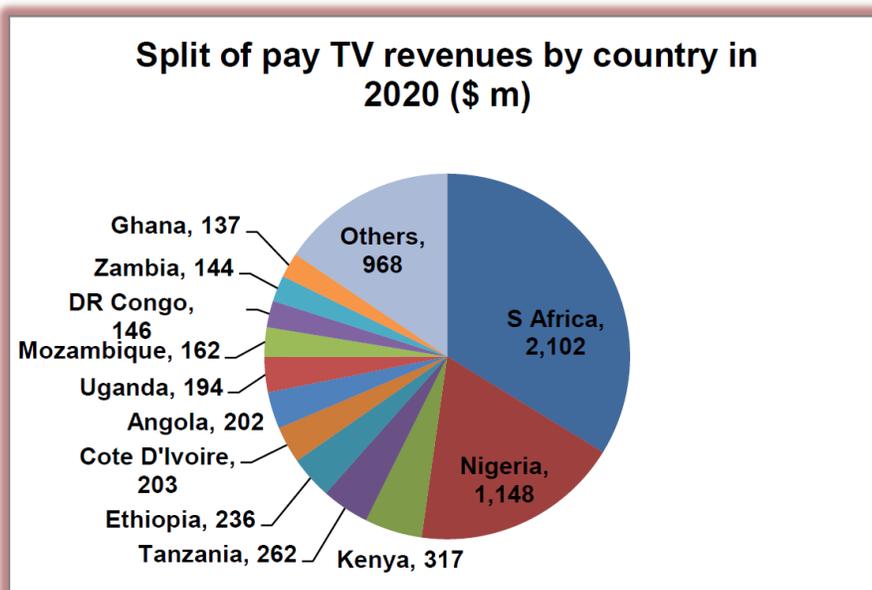
than 3,600% growth between 2000 and 2014. Internet World Statistics says Africa had 308,260,678 Internet users at end-2014, a 26.6% penetration rate. Incredibly the use of satellites to provide Internet, TV and other telecom services are also rising steadily.

"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.

Eyal Copitt, senior VP of sales for



Source: Digital TV Research

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

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 in the international trunking segment. 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.”

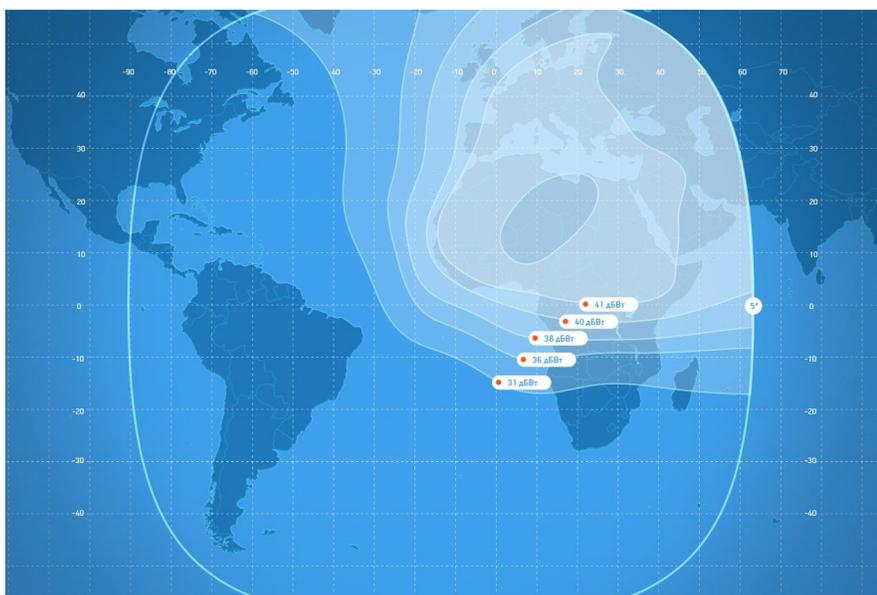
Copitt notes that Africa is building mostly new telecoms infrastructure in the whole continent. He observes that everything being built is “state-of-the-art, the best infrastructure one can find in worldwide.” He adds this can only be good for the satellite industry as well.

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



The Russian Satellite Communications Company (RSCC) has successfully launched Express-AM8 in September 2015 in the 14⁰W orbital position. The high-powered satellite will provide much needed C- and Ku-Band capacity for the African market. Pictured here is the footprint of its C-Band transponders over Africa. (image: RSCC)

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 broadcast-

ers 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

Africa's pay-TV market has grown by over 15% year-on-year in the 12 months to the end of March 2015, with satellite platforms getting the most market share, according to Dataxis.

A total of 1.97 million subscribers were added to Africa's pay-TV platforms, jumping from 13.14 million in the first quarter (Q1) of 2014 to 15.12 million in Q1 2015. Direct-to-home (DTH) satellite TV platforms contributed 1.48 million new subscribers, followed by some 378,656 additional digital terrestrial television (DTT) users and 26,200 more IPTV customers.

The Pay-TV market comprised 11.94 million DTH subscribers at the end of March 2015, compared with 10.45 million in the corresponding period a year earlier, with 2.18 million DTT customers – up from 1.8 million at the end of March 2014. The total number of IPTV subscribers in Africa had grown to 228,700 up from 202,500 in the same period, according to Dataxis.

Pan-African pay TV platforms are set to boom, according to a new report from Digital TV Research. According to the Eastern Europe Middle East & Africa Pay TV Operator Forecasts report, pay DTT platform GOtv will gain 5.84 million subs between 2014 and 2020 to reach 7.50 million – more than quadruple its 2014 total.

Rival StarTimes will experience similar growth to climb by 4.39 million.



Growing Demand for satellite services in Africa has resulted in fierce competition among satellite service providers.

GOtv's sister operator and satellite TV platform DStv will gain 4.32 million subs and satellite TV platform Canal Plus 1.34 million. The Pan-Arab satellite TV services will also add subs, with beIN Sports up by 768,000 and OSN by 630,000.

Pay TV revenues in Sub-Saharan Africa will reach \$6.22 billion in 2020, up from \$3.54 billion in 2014 and \$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 \$1.73 billion in 2014 and onto \$4.12 billion in 2020.

The fourth edition of the Digital TV Sub-Saharan Africa report 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 \$449 million in 2014 to \$1,148 million in 2020.

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.

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 op-

erators 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 rollout 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.

According to Euroconsult's newly released report, Prospects for Satellite Communications & Broadcasting in Africa, overall usage for satellite capacity in Sub-Saharan Africa increased at an 11% CAGR over 2009-2014 despite the spread of terrestrial fiber networks and the decrease of international trunking. 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.

"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," said Pacome Revillon, CEO of Euroconsult and editor of the report. "The significant addition of satellite capacity supply has resulted in a fill rate decrease and in greater competition and pricing pressure."

Multiple drivers support a strong future increase in the use of satellite communication services, including:

- Digital TV growth is still only in its early phase; 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
- Mobile penetration keeps increas-

"...Mobile penetration keeps increasing along with universal access requirements, while 3G and potentially 4G expansion will create new connectivity requirements..."

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- 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 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.

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

Challenge to the Satellite Industry

The advent of HTS services slowly but surely entering the African land-

scape 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 deploy-

Interview with Andrey Kirillovich, Director of Integration & Projects, Russian Satellite Communications Company (RSCC)

How do you see RSCC's position overall in the global satellite market?

RSCC celebrated its 48th anniversary on November 4, 2015. This means that we have been in the marketplace since the early days of satellite industry. Our current position is very strong, as we have got a well balanced portfolio of satellites, footprints, frequency bands, regions and customers. Our primary market remains Russia & CIS, where RSCC is satellite operator No. 1. But we are constantly increasing international sales revenue share, which is 35% today, with customers in more than 50 countries all over the world. Right now we operate 13 satellites in 11 orbital slots spread across the arc from 14W to 145E. This gives us access to many geographical markets and diversifies revenue streams. RSCC satellites cover Russia, Europe, Africa, Middle East, South Asia and Latin America. Our satellite fleet is also in a very good shape, as in 2014-2015 we carried out total renewal of our basic orbital assets by launching 6 satellites and another one is scheduled for the end of 2015. We also move down to the verticals by providing services to enterprise and maritime customers and run an HTS based network extending the penetration of satellite services to new customers and markets. And of course neither satellite operator is successful without solid broadcasting business. RSCC operates all primary DTH slots in Russia and currently develops video distribution neighborhoods in other regions including Africa. As a result our sales revenue in 2014 increased 30%. Such outstanding performance has been acknowledged by the industry - RSCC received an award as the best Regional Operator of the year at World Satellite Business Week held in Paris in mid-September 2015.



For the African market, what does RSCC offer in terms of coverage and services?

In 2015 RSCC has expanded the coverage of its orbital fleet by successful launch of 3 new satellites with coverage over Sub-Saharan Africa in C and Ku bands. Express-AM6 (53E), Express-AM7 (40E) and Express-AM8 (14W) provide a combination of wide regional and narrow high power spot beams over entire African continent, as well as over specific regions like West, East and Southern Africa. RSCC is currently developing a TV distribution platform in 53E and plans to provide managed service for enterprise customers in 2016. Besides that we have got special start-up hardware bundles and bandwidth policies for new service providers entering satellite business to bring their initial costs down.

What applications will your customers be using your capacity in the African market and how are your satellites suited to meet these requirements?

One of the most promising applications for Africa is broadcasting. There is a very good environment for development of media business in Africa right now, because so many countries, cultures and ethnic groups are located on one continent. Content production costs are decreasing, and there is a shift of content creation to Africa. Nolly/River/Zolly Wood are good examples as local content attracts the highest demand. Our satellites match the requirements of broadcasters perfectly as they can offer both wide geographical footprints for distribution of the content and narrow beams for DTH service in specific regions.

Africa has got a huge number of rural communities, so cellular backhaul is also one of the applications that we plan to develop on our satellites. Africa is entering the connected world by means of cellular phone and only then Internet. We have a special dedicated C-band spot beam on our Express-AM7 satellite specially designed to support cellular backhaul solutions in rural tropical regions.

Enterprise networks also remain one of the core applications for satellite in Africa. New RSCC satellites provide business customers with flexibility to leverage the benefits of various beams focused on certain regions, entire continent or delivering connection to major international traffic gateways in Europe.

How do you see RSCC in the next few years?

RSCC plans to continue developing business in new regions including Africa to increase its international revenue share. We will be moving into to new verticals on the domestic market and further develop HTS business by entering new market niches. In Africa we plan to support broadcasters, telcos and service providers in bringing new content and connectivity options to the continent. Including innovative solutions and new business models to meet customers' expectations and requirements.

Any other things you would like to add?

I believe Africa has got very bright future in terms of telecom infrastructure development with more communications highways linking up the continent. There is a strong demand for connectivity and there are still many places outside big cities in Africa where terrestrial connection is either impossible or does not provide acceptable quality. Satellite remains an integral part of African telecom and broadcasting infrastructure because of the size of the continent and huge number of rural communities. But a lot of connectivity bottlenecks remain in rural areas. New RSCC satellites are ready to address this challenge and to allow customers reduce cost per bit and provide a competitive service offering.

ments; 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.

Read and download this Market-Brief report and others like it on other markets segments at www.satellitemarkets.com



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