



Satellite Services Demand – The Future in High Def

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PREFACE

For the last ten years, Futron has developed and annually updated its forecast model of the worldwide demand for satellite services. This year, as in every year before, we have reviewed the current status of the telecommunications marketplace, as well as the satellite industry, and incorporated the new emerging trends and market structures into our models, to ensure that they do not just reflect past demand, but accurately predict future patterns.

The past decade has seen dramatic shifts in the telecommunications industry overall, including the satellite industry. Fueling the complexity of the current market is the role of financial investors, once again excited by the prospects of telecommunications and satellite companies. These investors understand that the history of a market is not the primary determinant of future business, and Futron's forecasting approach helps these and other clients assess key elements of their business plans, such as:

- Projecting the gaps between supply and demand by region and application to improve satellite operators' decisions for capital investment, strategic planning and sales tactics;
- Understanding the demand for additional new satellite capabilities to help satellite manufacturers focus their design and sales activities to anticipate potential customer needs;
- Knowing which services are likely to take off fastest, and where, to help ground equipment vendors decide where to focus sales efforts and staff, or establish local manufacturing joint ventures; and
- Providing focus on the trends in new services and service providers to help governments plan their acquisition and regulatory strategies.

Comprehensive, rigorous market analysis can significantly reduce the risk inherent in all segments of the commercial satellite business. This is the reason Futron has invested so much time and energy developing its forecasting capability. There are several aspects to this capability that should be noted:

- Futron's forecast model is internally funded – it is completely independent of all current or proposed satellite systems or organizations.
- It is based on the *demand* for satellite services working up from the *demand* for telecommunications services – this is a more rigorous and comprehensive approach than a supply-based forecast for a ten-year period.
- It is a global forecast, evaluating over 200 countries and territories individually to capture the local, regional, and global demand for satellite capacity.
- It is a *capability*, not a product. Futron does not sell its forecast in an off-the-shelf publication. Rather, we develop the forecast model so that we have the capability and understanding to perform a wide range of business-related consulting projects for our customers. While top-level, generic forecasts can be useful in some situations, we at Futron like to solve our customers' hardest problems, which are not as effectively addressed by a mass-marketed report.

After reading this White Paper, if you or your organization require further definition or understanding of any satellite market, please contact Andrea Maléter at 301-347-3450 or amaleter@futron.com.

EXECUTIVE SUMMARY

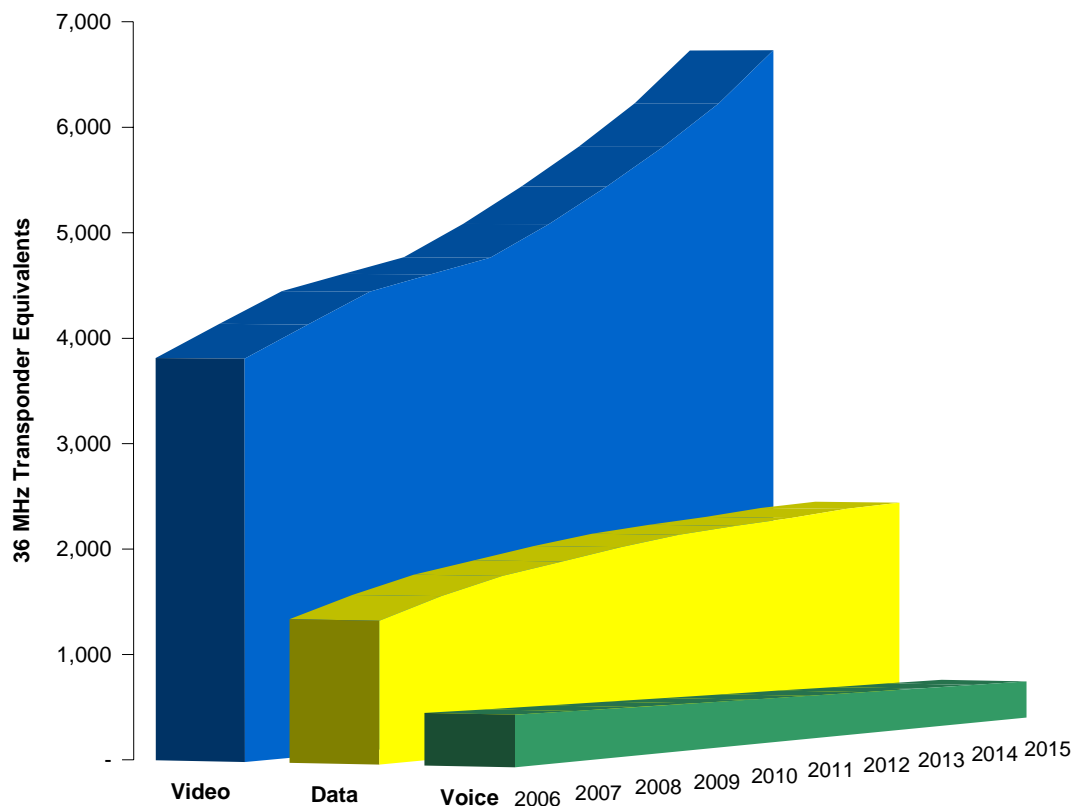
The satellite industry, like telecommunications overall, has gone from boom to bust to reconciliation. It is now in the midst of an unusually complex period, in which large operators are consolidating while new, innovative operators are starting up – or restarting – with plans to create hybrid networks and services. The SES Global/NSS and Intelsat/PanAmSat mergers reflect the same market forces as the mergers of Sprint/Nextel and AT&T/SBC.

While ten or fifteen years ago there were concerns that the satellite industry would die out as fiber-optic and terrestrial wireless technologies spread around the globe, the industry has continued to find new technologies that add value to customers and expand their demand for satellite capacity. The emergence of DARS and satellite radio as a viable business provides one example. More agile and more compact equipment operating on the move with Ku-Band capacity for military and other applications is another. And the implementation of hybrid solutions that combine satellite and terrestrial capabilities, often in partnership with the telecom companies, is one more.

Putting these and other trends in motion, Futron’s latest ten-year forecast shows that the demand for commercial satellite services continues to be strong and growing:

- Overall demand for satellite capacity increases by more than five percent a year over the next ten years, as shown in Figure 1.

Figure 1: Global GEO Commercial Satellite Demand, 2006-2015

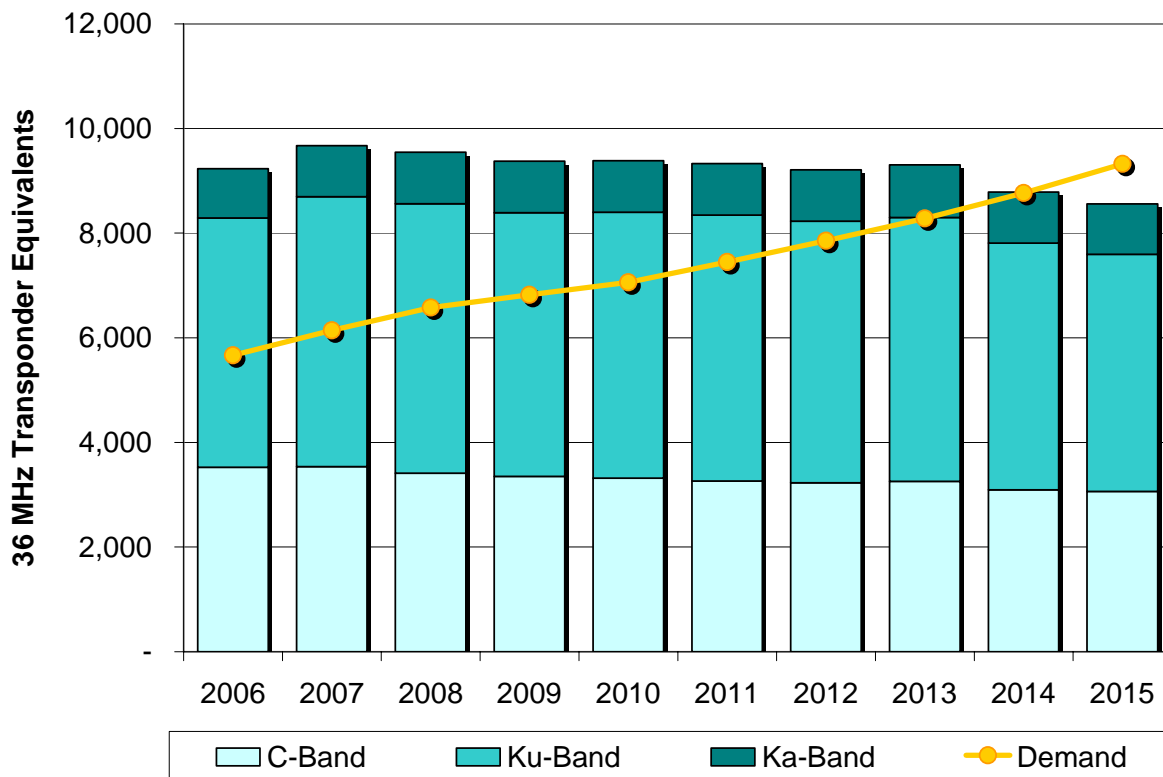


- Broadcasters will strengthen their role as the bread and butter of the satellite industry with robust growth, despite the drop-off of analog channels and the rapid improvements expected in compression technology.
- Data services demand continues steady growth, due largely to the expansion of private network services into new applications and customer bases, including a wide range of government markets.

While Futron’s forecast for satellite demand is separate from our forecasts of the supply of capacity coming on line, the interaction of supply and demand is a key element in understanding where and how some trends will play out. Using our database of satellites on-orbit, new orders and anticipated replacements, we find the following items important in assessing trends that will influence demand:

- The supply glut is receding, with global utilization exceeding 60 percent for the first time in several years. Futron projects that this figure will reach 84 percent in 2012, likely impacting pricing of satellite services and thus demand.
- Ka-band capacity has finally become a factor in North America, although there are no plans to launch similar, large-scale birds in other regions.

Figure 2: Global Supply and Demand, 2006-2015



FUTRON'S FORECASTING METHODOLOGY

Every year since 1996, Futron Corporation has undertaken a detailed review of the future demand for geostationary commercial satellites. From these detailed assessments we have historically been successful in predicting the numbers and types of future satellites.

This year, as in the past, we have analyzed over a dozen separate markets, evaluating the ten-year trends in user demand for each market in over 200 countries. Futron has refined its classifications of satellite services as the telecommunications and media industries have evolved, and this year's forecast matrix is shown in Figure 3, below.

Figure 3: Futron's Satellite Services Matrix

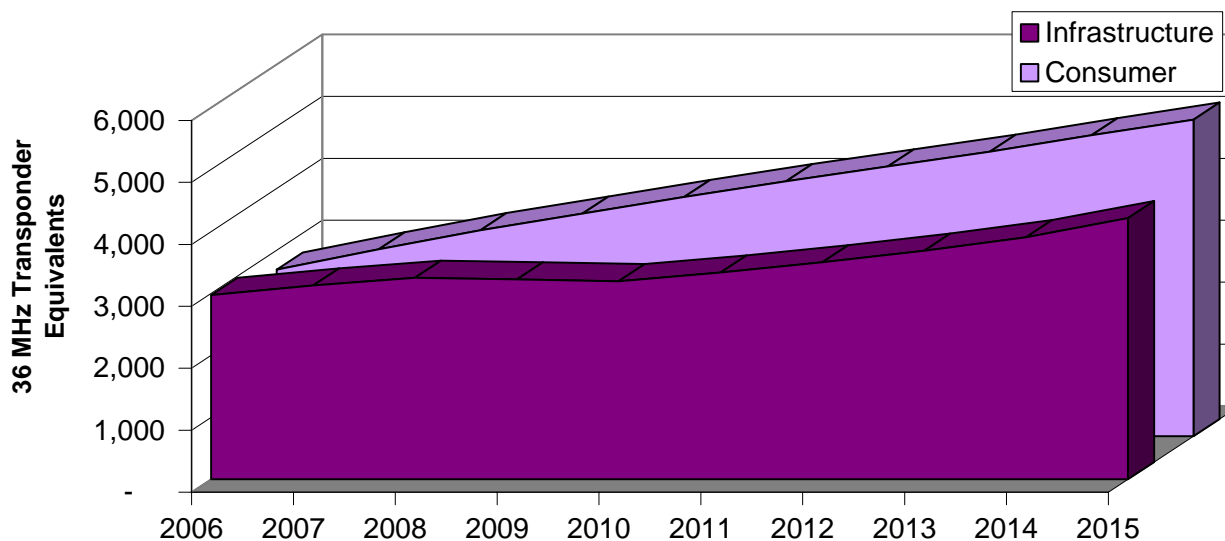
| | Infrastructure Services | Consumer Services |
|-------|---|---|
| Video | TV Relay | DTH Television Radio |
| Data | Internet Trunking | Last-Mile Broadband (Large Business, SME, SOHO, & residential) Private Networks In-flight Telecom |
| Voice | International Trunking Domestic Trunking | End-user Telephony |

Futron's methodology for forecasting demand is summarized below.

- Identify fundamental drivers of demand for telecom and broadcast services in each country/region
 - Demographics
 - Historical trends
 - Emerging applications
- Apply constraints on satellite demand looking at key environmental factors in each market
 - Terrestrial competition – build-out, uptake, and pricing
 - Regulatory environment
 - Price and affordability
 - Customer equipment distribution and uptake
- Translate into demand for transponders reflecting satellite industry trends
 - Technology (e.g., data compression, frequency reuse)
 - Price competition
- Normalize for current usage of commercial geostationary satellites
 - Analyze transponder-level usage via Futron's Supply Database

One of the most interesting aspects of this year’s forecast is the strengthening role of TV relay demand, as HDTV becomes a global staple. Largely as a result of this, we see that while demand for capacity for infrastructure services grows at only half the rate as demand for the more exciting and overall innovative consumer services, as shown in Figure 4 below, infrastructure services do continue to grow over time.

Figure 4: Demand for Consumer and Infrastructure Services, 2006-2015



Key drivers of future demand for the Video, Data, and Voice markets are discussed in the following sections.

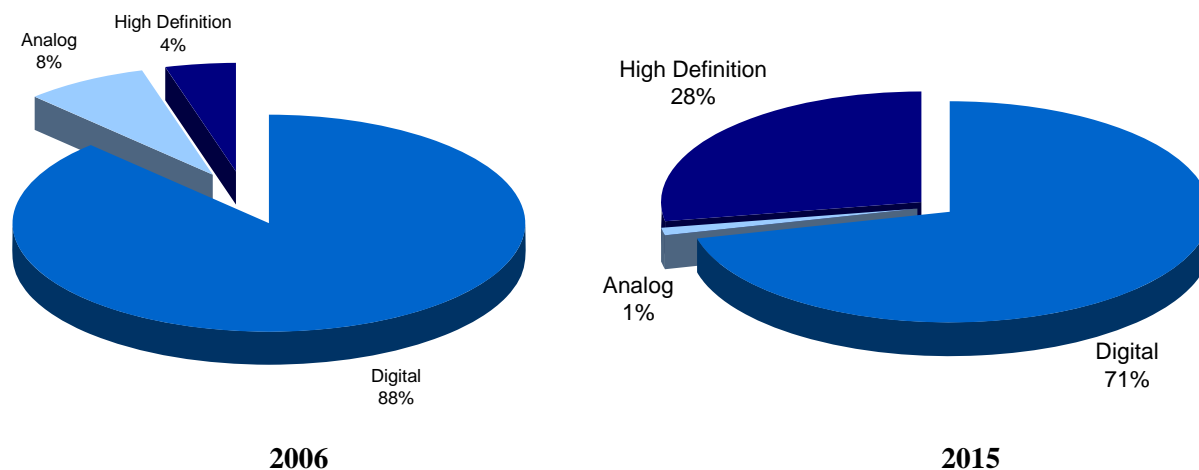
VIDEO CONTROLS THE AIRWAVES

Recent video growth has been dramatic with exceptionally strong growth in development of HD content and associated growth in demand for capacity to carry that content. Looking forward, these trends are expected to continue as new video technologies and changing video regulations around the world will help drive demand for satellite capacity for video services to almost double over the next 10 years, as shown in the following summaries.

TV-RELAY – CHANNELS COME IN DIFFERENT SIZES

There is good news and bad news for satellite providers: The reduction in analog channels and the unremitting improvements in compression technology are expected to dampen the demand for video services in the near term, while the proportion of video services demand increases toward the end of the forecast period. The carriage of analog channels, which require up to ten times more bandwidth than their digital counterparts, will decline rapidly from 8 to 1 percent of all channels carried over satellite globally between 2006 and 2015, as shown in Figure 5. However, overall channel growth, enabled by the reduced cost of carriage, and the increased proportion of high definition channels (which require approximately four times more bandwidth than SD channels) drive demand for capacity.

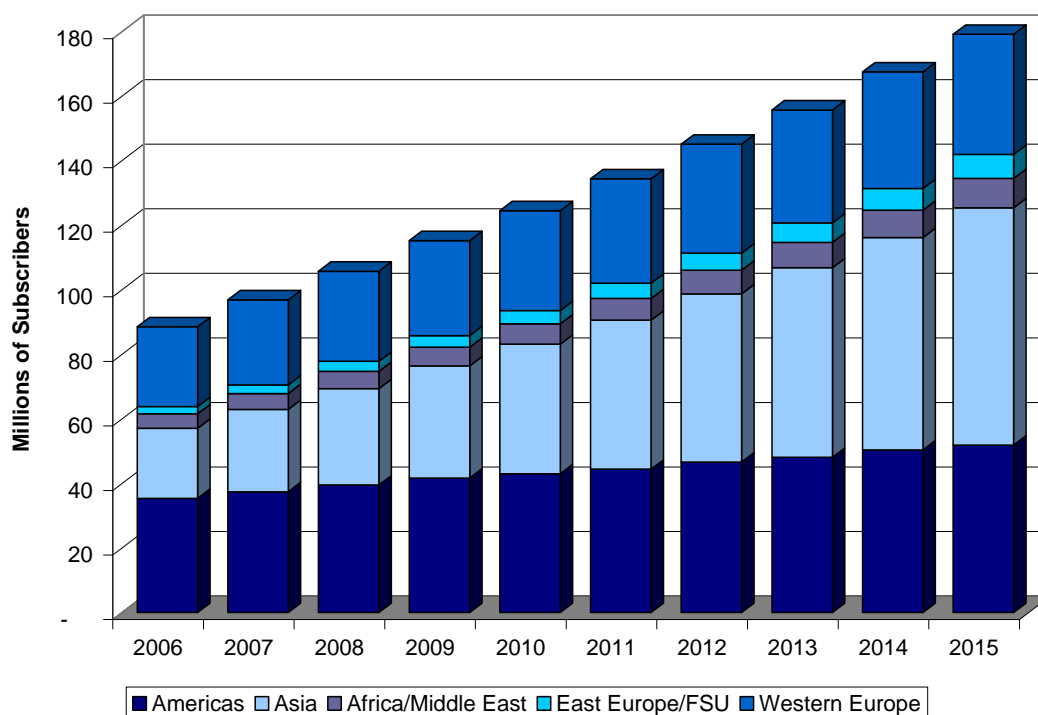
Figure 5: Global Analog, Digital, and HD Channels, 2006 and 2015



DTH – REGULATORS DRIVE DEMAND

While the capacity boom in the U.S. DTH market to carry local HD channels to all 220 video markets is well underway, the opening of Asian markets will drive demand further into the forecast period. The recent opening of the Indian DTH market has quickly attracted a handful of operators to begin service. Lifting restrictions in the Chinese market, where DTH service is currently illegal (with an active black market), would likely attract even more. Futron projects the subscriber growth in Asia to boom over the forecast period, in comparison to the more mature markets of North America and Western Europe, as shown in Figure 6. Regulation is a strong factor driving this demand, in particular in the U.S. where “must carry” legislation obligates DTH providers to offer a wide range of channels in each market, thus increasing the satellite capacity required.

Figure 6: DTH Subscribers, by Region



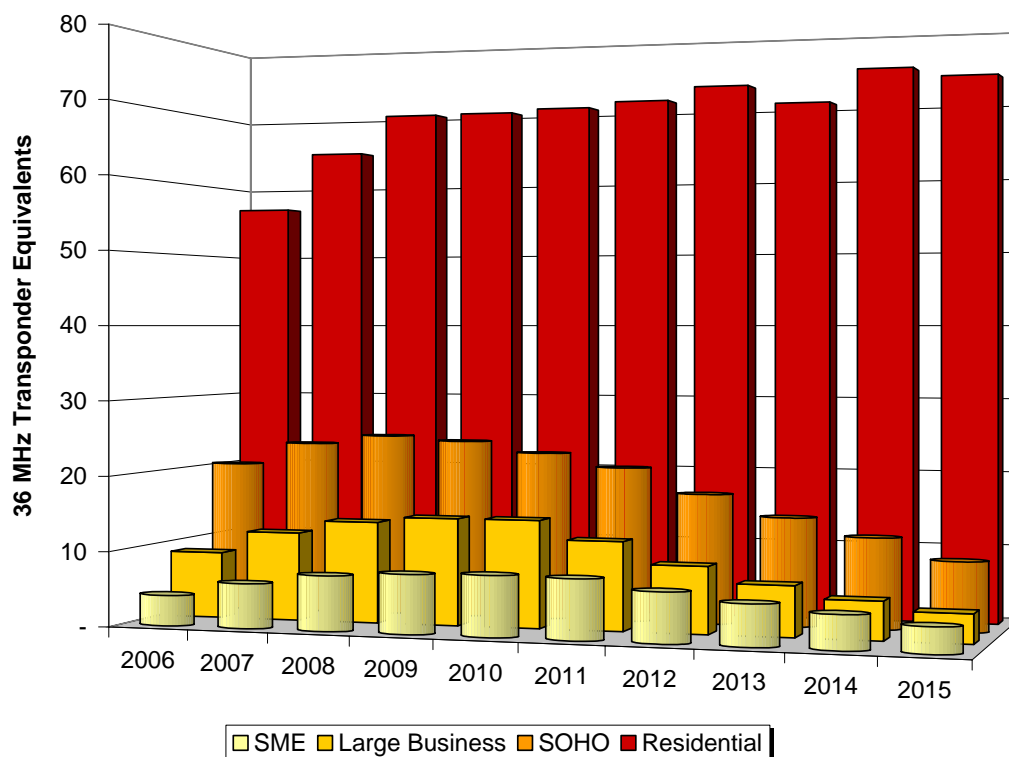
DATA ADDS NEW BITS AND MAINTAINS ITS BITE

The data markets are complex and evolving, as IP-based platforms are introduced for virtually all types of services from voice to video and everything in between. This evolution, which in some cases produces revolutionary change, modifies the structure of many data markets. The overlap of data and voice markets continues to grow, with VSAT networks increasingly being installed by cellular and other companies offering primarily telephony services. At the same time, some VSAT customers are migrating to low-cost IP-based terrestrial telephone networks that provide a full range of digital services.

These trends are unfolding differently in every geographic market, limiting the value of broad generalizations. One thing that is clear, however, is that the highest overall growth in demand for data services comes from across the Middle East, key parts of Africa, Asia and Latin America. But as noted above, there is a wide variety of patterns in different data markets. VSAT demand, for example, which includes the increasingly expansive government networking needs, doubles over the forecast period, with approximately a quarter of that demand coming from the U.S.

Last-mile broadband, on the other hand, has a more complex demand trend, varying by both geographic and customer sub-markets. As shown in Figure 7, within the Americas, residential broadband demand rises and falls over time, responding both to the introduction of satellite capacity and services in different countries at attractive prices and to the competing introduction of terrestrial alternatives at even more attractive prices. Over the same period, the much smaller demand for satellite capacity from last-mile enterprise customers rises in the early years but drops off over time as terrestrial competitors initiate service throughout major and minor markets.

Figure 7: Americas Last Mile Broadband Demand, by Customer Type

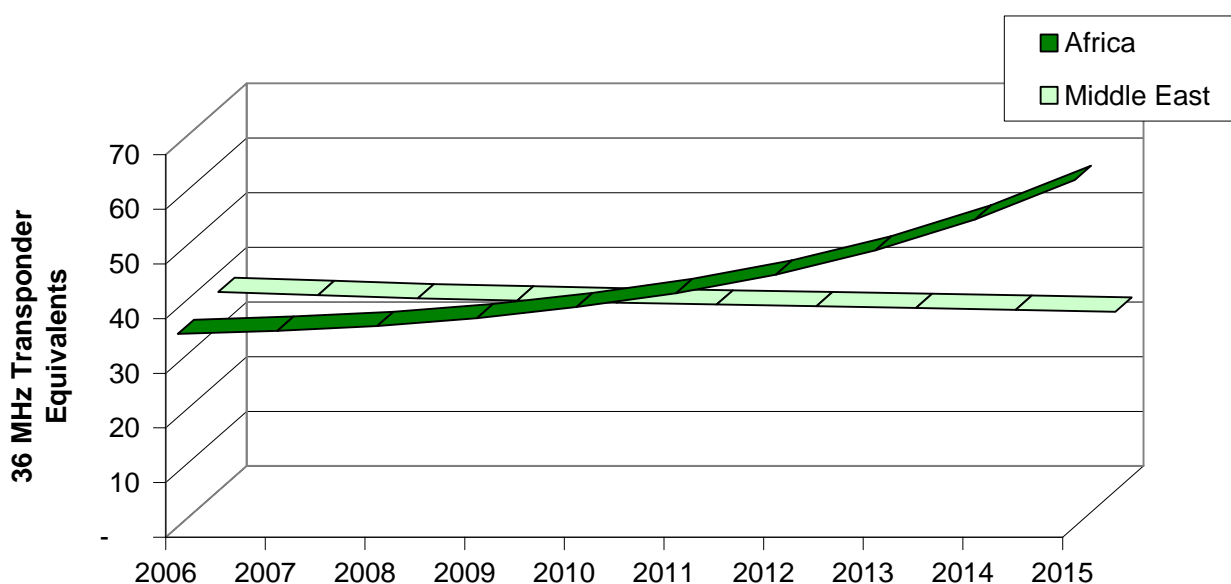


VOICE CARRIES ON

As noted in the discussion of data markets, the introduction of IP telephony is a key factor in reducing demand for bandwidth for voice services globally, as it enables more efficient carriage. At the same time, while demand for fixed telephony services such as village phone booths continues to grow strongly in most of the world, such rural networks are no longer being built for voice only services, and are frequently implemented using a VSAT network model.

The only regions with significant growth in demand for satellite capacity for telephony services are in sub-Saharan Africa outside of South Africa. As shown in Figure 8, the demand in Africa overall starts out at virtually the same level as that in the Middle East, but by the middle of the forecast period, the different market forces in these areas, including expansion of terrestrial facilities for domestic and international trunking, causes Middle Eastern demand to decline slightly, while demand in Africa continues to rise.

Figure 8: Demand for Voice Services in the Middle East and Africa, 2006-2015



CONCLUSION

As with all business endeavors, forecasting where change will come in the future requires an understanding of history, but even more, requires a willingness to unlock the code of new opportunities. For companies building, launching and operating satellites, as well as those creating the user equipment to work with them and the investors looking to finance their ventures, the opportunities in the satellite industry continue to be many and diverse.

As this report makes clear, video services will continue to be the largest market for satellite capacity throughout the next ten years, with data services also seeing growing demand across a range of services. The challenge lies in choosing how to commit resources in the most efficient way in order to take advantage of the specific opportunities within these markets. Understanding the “who, what, when, where, why and how” of those opportunities requires in-depth investigation. Futron uses this understanding, applied to individual company objectives, to put the forecast to work helping clients identify and pursue their best opportunities.