

Intelsat at



One of Satellite's Most Enduring Stories

Like any good story, there are heroes, one notable villain, moments of sheer joy as well as moments of heartbreak and loss. But this is not a new CBS drama I am talking about, this is the 50-year story of one of the satellite industry's most iconic companies: Intelsat. This year, the operator celebrates its 50-year anniversary and we look some of the key moments in the company's colorful history.

by MARK HOLMES

On August 20, 1964, the International Telecommunications Satellite Consortium (Intelsat) was established on the basis of agreements signed by governments and operating entities. By April 1965, eight months later, Intelsat already had its first spacecraft, the Early Bird satellite (Intelsat I), in synchronous orbit. This was the world's first commercial communications satellite.

Fast-forward 50 years, and Intelsat is a huge force within the satellite industry. It operates a global fleet of approximately 50 satellites and is present in all major markets around the world. However, back in the '60s, it had humble aims of bringing nations, and ultimately the world, together through communication and video. Robert Kinzie, who worked for COMSAT in the '60s on the treaties which created Intelsat, recalls how being part of a project was an "exciting work" for all those involved. Kinzie also later worked for Intelsat itself.

"We created a functioning organization that launched, designed and operated satellites and did what it was supposed to do," he says. "It was totally exciting. We were doing something new; there was almost no precedent, ... no experience in satellite communications except some people in the military. You were able to get bright people with a bag of tools but no experience — nobody had any experience of what we were doing. We got some of the best technical people. We were amazingly apolitical in the company's inception."

However, due to its global nature, having so many

countries as part of the system meant things could be difficult to organize. "I remember when I first went to Intelsat, we would have to arrange a lot of calls a day in advance to some countries. It took me eight days to arrange a call to Chile, for example," said Kinzie.

The company opened up new worlds to people through its satellites. It transmitted images of the moon landings in 1969, and then images from the World Cup in Argentina in 1978 to more than one billion people around the globe. "I remember when we first televised the World Cup around the world, it was a phenomenon. That was the first time that World Cup football was introduced to the United States," adds Kinzie.

For those who like their cold war dramas, The Direct Communications Link, or "Hot Line," was activated via the Intelsat system on Christmas Eve 1974, effectively connecting the White House and the Kremlin.

Truly International

One of the striking aspects of the Intelsat story is how it bought people around the world to one organization with a common goal in an almost utopian concept. Lakh Virdee, who worked for the company between 1981 and 2006 heavily involved on the network planning and implementation side, said that when he joined Intelsat "it looked like the United Nations." He had accepted a job with the company whilst in the Netherlands without even going to Washington, D.C. The cosmopolitan nature of Intelsat was a key factor.



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Three astronauts stepped out from the Endeavour Space Shuttle to repair the Intelsat 603 satellite in a historic moment for Intelsat and the whole satellite industry. Photo courtesy of Intelsat.

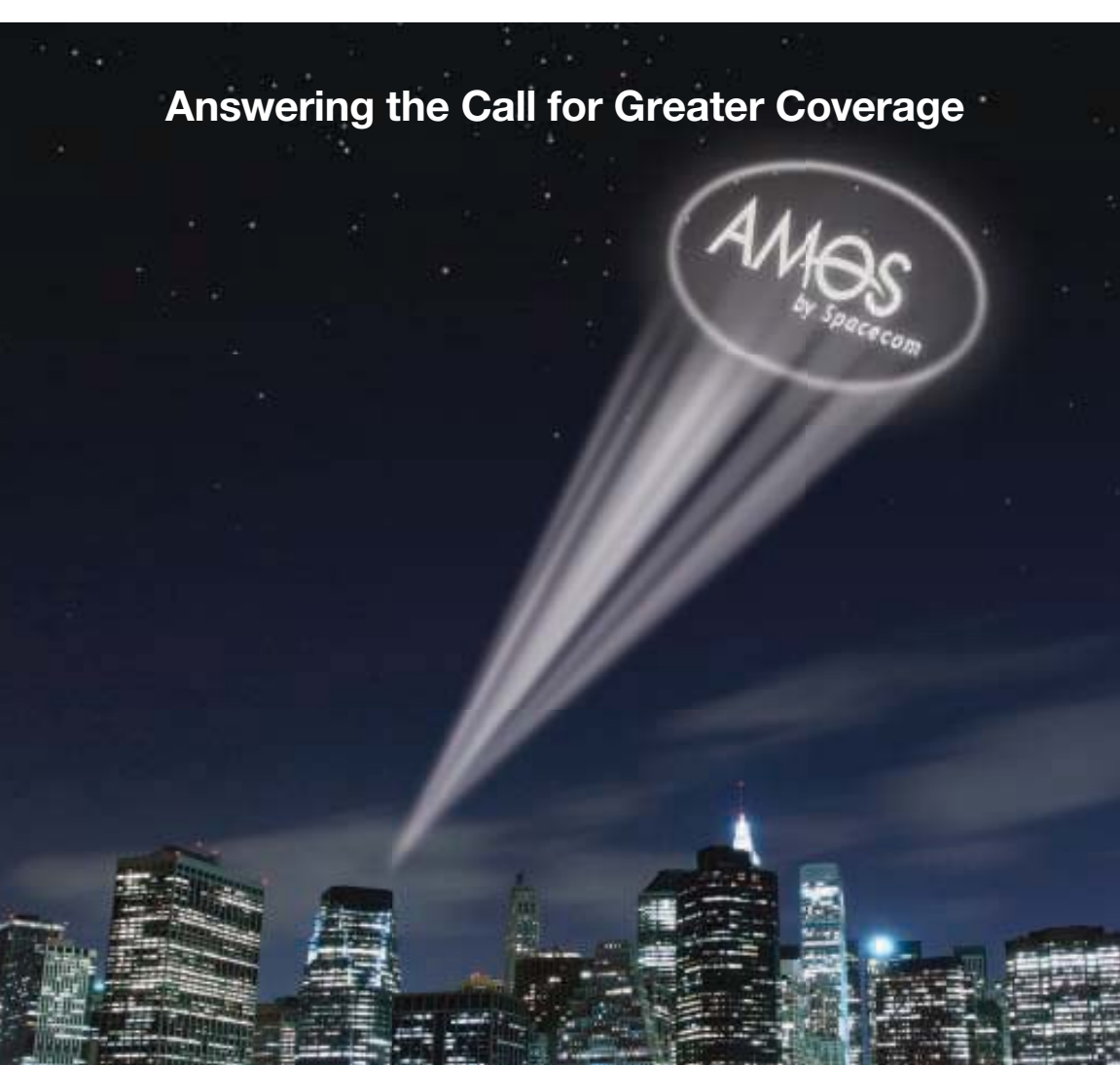
“At one time, I believe there were over 80 nationalities working at Intelsat. I am an Indian by background, the South Asian community at Intelsat held what we called a ‘Festival of Light’ day, commonly known as Diwali. Everybody in the company was invited to celebrate it, there was a big community spirit. This grew into ‘International Day’ where, once a year, communities from around the world would set up stalls with food, beer, wine, music and performances from their countries. That added to the international flavor of Intelsat,”

Virdee says it was an exciting time to be part of the company. “We were the pioneers looking for new technologies so that we could provide services all over the world on nondiscriminatory cost and quality basis. Whenever we had any investment to be made, all the member countries shared the costs based on their usage of the system. At the end of year, the net profit was pretty much zero as any profit we made was distributed back to the member nations. We were pioneers in technology and we helped connect the world,” he says.

David Leive, ex-general counsel at Intelsat, who joined the company in 1973, also points to this. “In the ‘70s, in this country and in Europe, there was a lot of faith in international organizations to do things in a way that does not exist anymore. At the same time, you have this huge technological growth,” he says. “Intelsat, for me, institutionally attracted a lot of first-class engineers from around the world — there was an incredible spirit. You had a secretary general who was a Chilean, his deputy

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was an Italian, the operations manager was an American, and the finance chief was British. A continuous high point in the first 10 years was to help establish a system that would work and provide telecommunications, particularly television, throughout the world, and also establishing the institution, which was this hybrid public/private entity. The organization had a very international staff of nearly 1,000, a board of governors with simultaneous translation, and other features modeled after the World Bank, but our actual purpose was to run a commercial satellite system. So a high point was to be part of that.”

The Hand of an Astronaut

Intelsat, like any company with a history of 50 years, went through its share of high and lows, and surprisingly for a satellite company, it made national headlines on more than one occasion. Perhaps, one of the most iconic stories was in 1990, when its Intelsat 603 satellite failed to launch into geosynchronous transfer orbit, and ended up in low earth orbit.

Rather than give up on the satellite, Intelsat worked with NASA and Hughes Aircraft Company to try and raise the satellite to its operational orbit. It is perhaps the first and only time astronauts would literally reach out

and grab the satellite, bring it into the Endeavour Space Shuttle bay on its maiden flight, and attach a new motor enabling it to get into its planned transfer orbit.

Virdee looks back at the story with a great deal of pride. He admits most people thought at the time the satellite was a “lost cause,” but thanks to discussions with Hughes Aircraft Company, the manufacturer of the satellite, a bold rescue plan was hatched. Intelsat and Hughes prepared a presentation to give to the NASA management and engineers at the John-



son Space Center. There was a lot of media interest in the story, and Virdee recalls an amusing anecdote for the time. “Being a Sikh, I was wearing a turban going into this meeting. The head of Johnson Space Center turned around and said ‘be careful when you go out because the media will be looking for foreigners to get information.’ I asked if anybody had a Texan 10-gallon hat so I could walk out and not be noticed. Everybody burst out laughing; I think that broke the ice. We were not just run of the mill guys looking for a free ride, they really took us seriously. From that time onwards, we had a great relationship with the whole team, including that at Kennedy Space Center in Florida,” he says.

It would take three attempts for the rescue to be successful. Virdee recalls that third attempt. “After the second attempt, we were brainstorming in the Intelsat Control Center in Washington, D.C., and we came up with a plan that required three astronauts going out to manually grab the satellite,” he says. “NASA JSC initial response was not very positive as never before had three astronauts together ventured outside the shuttle. But the next day, we got a response back; the Endeavour crew had come up with the same solution that we needed three astronauts to go and capture the satellite.”

John Hampton, an ex-deputy director general of Intelsat, says the fate of the Intelsat 603 satellite was a “very tense period” for the company for the best part of the year. There was a lot of drama and a huge amount of

TV interest in the story. Camera crews were fixated on whether the satellite would be rescued or not.

“We had three go’s at it. If the third go had not worked, it would have been abandoned. You end up with this human drama with TV cameras from all over the world that ended up watching this rescue. In the end, you have a human hand reaching out to this satellite. There was a huge cheer that rang out in the building. As a soap opera, it could not have been better scripted,” Hampton says. “There was always a risk that it would not work.

Nobody had ever done it before; it was fresh ground. I didn’t ever think we wouldn’t get the satellite, but of course I knew it was a possibility. There was euphoria, there was champagne.” Intelsat 603 is still in orbit today.

Tragedy in China

While there were some impressive triumphs, Intelsat has not been without tragedy in 50 years. Nowhere was this more apparent than on its Intelsat 708 satellite, which was set to be launched on the Chinese Long March vehicle in February 1996. The launch went terribly wrong and the rocket crashed into a village near the

launch site, destroying it and resulting in fatalities.

“The lowest point for me was this mission. Within a few seconds of lift-off, it just veered off barely clearing the launch gantry and it slammed into a village, which we only became aware of many days later,” says Virdee.

The Villain

Mentioning the name Richard Colino to people who worked at Intelsat in the 1980s brings sighs and memories of a dark period. In 1987 Colino, who was the director general between 1983 and 1986, was found guilty of fraud in relation to construction and financing contracts for Intelsat’s then new headquarters. Colino was sent to jail. His fall from grace is a rare black spot in Intelsat’s history, which got a lot of media attention — including from Time Magazine.

“A few of us started to suspect something was badly wrong about two or three months before they got exposed,” says Leive. “Before that, no one had any idea what was going on. It all happened through real estate that the organization was building in Washington. We did not have a series of normal controls that we did for our regular financial activity. So, the director general and his deputy took advantage of that. The remarkable thing about that is that organization responded very, very rapidly and very promptly together with various elements of the U.S. government including the FBI to get to the bottom of it. It was not a pleasant time. It was a big sense of relief when it was all over.”



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Virdee admits that, during that time, the previously nice atmosphere at Intelsat was no longer apparent, and talks of “a climate of apprehension” that pervaded the company at that time.

But, despite this dark period, Intelsat showed a great deal of resilience, and perhaps what was most remarkable was just how well and how quickly the company bounced back.

“While in one sense it was a low point, it was also arguably a high point in that Intelsat moved on beautifully from this. The corruption was identified, the perpetrators were caught and put in jail and Intelsat went on without too much of a ripple,” adds Hampton.

Live Via Intelsat

Intelsat had a pivotal role in bringing momentous world events to audiences around the globe. What started with the moon landings in the late 1960s went all the way through to the Gulf War in the '90s. SATELLITE Conference and Exhibition Chairman and past Via Satellite Editor, Scott Chase recalls the power of Intelsat at PTC way back in 1991.

“One big episode that stands out in my mind that speaks to the international character of Intelsat was the start of the Gulf War. In January 1991, I was in Honolulu at PTC. As the situation got tenser, people started to converge around



Intelsat's teleports in Fuchsstadt, Germany. Photo courtesy of Intelsat.

television screens like a village. All the live coverage of Desert Storm was coming live via satellite, and in several cases, it was clearly marked as Intelsat feeds. It really spoke of Intelsat, not just as a global satellite system, but also to the instantaneous nature of communications via satellite. We were watching developments live,” he says.

2000s: Intelsat Flexes Muscles in Commercial Arena

One of the great successes of the company has been its ability to evolve with the times. Over the last 15 years, there have been a number of significant events in Intelsat's story. In 2001, the company privatized after 37 years as an intergovernmental organization. This would signal an important round of deal making for Intelsat. It snapped up Loral Space Systems in 2004, and in one

of the most significant moves in the company's history, it merged with long-time rival PanAmSat in July 2006 in deal that changed the very essence of Intelsat. The company itself also saw changes in ownership as Private Equity companies and funds acquired it twice in less than four years.

In April 2015, David McGlade will celebrate his 10-year anniversary as the CEO of Intelsat. He admits he did not have any real reservations about taking the job, but felt the biggest challenge was a change in culture. “When I joined, I felt that the company needed to have more diverse skills. We grew out of an intergovernmental organization where it is more about flying and buying satellites, and operating a network, rather than having a sophisticated marketing/sales and financial strategy,” he says. “Where we needed to evolve and develop the company was to have better customer insights so

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However, it is the deal with PanAmSat that really sticks out in this period. The PanAm-Sat acquisition is one of the highlights of McGlade's time in charge. "If you look at most mergers, they are usually unsuccessful and destroy shareholder value. We created substantial shareholder value. I am very proud of what the team did and create a new culture and have a new drive to the customers. Historically, our investors have done very well with the company but I really feel as though we have reinvented the company. That is important to me that you come in and challenge the status quo, and look at things in a fresh way. If you do that, you have another 50 years to address as a company, if you don't, it is at your own peril."

Thierry Guillemin, Intelsat's chief technology officer, also pinpoints the acquisition of PanAmSat as a key moment for the company. "The high point [for me, personally] was when we merged with PanAmSat, and we recreated the culture of the company. It was probably the most entrepreneurial player coming together with the most technically excellent

company in terms of operations. You have the best of both worlds; with technology still at the heart of what we do. This 2006 event bought a new spirit to the company, it really changed the trajectory of the company,” he says.

An Epic Response for a New Decade

What impresses most about Intelsat is that, despite being one of satellite’s most enduring stories, the company has aimed to have a very progressive mentality particularly toward new technology and markets. Nowhere was this more apparent than two years ago, when it introduced to much fanfare its EpicNG satellite platform, a new series of satellites based upon a high performance open architecture design. These satellites use multiple frequency bands, wide beams, spot beams and frequency reuse technology and will be deployed for wireless and fixed telecommunications, enterprise, mobility, video and government applications requiring broadband infrastructure across the major continents.

McGlade cites this as a perfect example of how the company has adapted to modern times. “We have embraced high throughput satellites in ways others have not. We are huge believers in open standards and open architecture. We have designed it to be frequency agnostic, infrastructure agnostic and backwards compatible leveraging the strengths we have,” he says.

Guillemin says the Epic Platform can be compared to the “maturation of a fine wine” saying it “takes years” to

really get to a point where an idea can reach ripeness. He says Intelsat was talking about high throughput satellites way back in 1999 when the concept first came in as a series of initiatives, whether they were in GEO/LEO/MEO, and that Intelsat looked “very seriously” at each and every one.

“At the time we stayed away from it because the idea was not mature. The wine was not ready. History has proven us right. Then we have just continued to work on these things as customers started to evolve their needs,” Guillemin says. “At some point, there is a convergence; the needs of the market and the ability of technology converge. I would say it really came together three years ago. It was really helped by the decision of Boeing to come back to the commercial market with us. Boeing brought with them the technologies we needed at the scale we needed them.”

The Story Ready to Enter a New Phase

Guillemin believes that the satellite industry will change more in the next 20 years than it has in the last 50 and thinks high throughput satellites will really put satellite on the map in terms of the networks of the future, whether 4G/5G or more. In terms of where Intelsat goes next he says, “I think software-defined payloads will give us tools that we never had before. We will make [satellites free of] telecommunications interference and jamming ... We will get to a point where network security will be more sophisticated and efficient than ever. I



IntelSat top executives (from left to right): Stephen Spengler, president and CCO, Thierry Guillemain, EVP and CTO, and David McGlade, Chairman and CEO. Photos courtesy of IntelSat.

believe we will see a reusable launch vehicle and that will change dramatically the economics of putting satellite into orbit. I am convinced we will [see] — probably in the next five to 10 years — a real in-orbit servicing industry start to develop.”

McGlade highlights the company’s focus in mobility as another key trend. “We had no business at all in mobility 10 years ago. It was very small even five years ago,” he says. “Now, we are disrupting it. We are bringing broadband to multiple types of aircraft and ships. We are doing it in ways that others are not. I do feel like we can disrupt.”

McGlade says that over the next 10 years he would like to see IntelSat continue to play a key role in the evolution of media distribution. Naturally, he expects and hopes the mobility piece of the business to grow. He wants to connect customers, businesses and end users with broadband all around the world. He would also like to see IntelSat play a much more integral approach in the government business. “I think you will see a more hybrid approach. The lines are blurring just like they have been with FSS and MSS,” he says.

Citing companies like Google and Facebook that want to come in and serve the “unconnected,” the new

media landscapes going forward offer as much opportunity to Intelsat now as it ever had in the past. “There will be an absolute explosion of sensors and interactive applications that are made available through Machine to Machine (M2M) and the ‘Internet of Things.’ If you look at it, from agriculture, energy and wearables, we are going to see the ability to communicate with any device, vehicle or appliance in ways we never thought of years ago,” McGlade says. “From an agriculture standpoint you can use technology to help with changing climates, and other issues that impact farmers. I think satellite can play a key critical role in that. Because of the strength of satellite offering ubiquitous high-quality service, I think we can play an important role in that. I think this gives us a new opportunity to address a changing landscape for years to come.”

While there is much talk of future applications like Ultra-HD for example, Intelsat’s mission in some ways has been remarkably consistent over the last 50 years. It is all about connecting the world and bringing the benefits of modern communications to all.

“I have been very fortunate in my role to spend a lot of time with customers and to see what they do with satellite communications in the real world and how it impacts peoples’ lives,” says Stephen Spengler, president and CCO at Intelsat. “I remember one time in Kenya there was a partner of ours that was packaging a VSAT system and they delivered basic communica-

tions in villages across that country where it did not exist before. On top of that, they are layered on banking services, e-communications. When you see that in country, it puts things in perspective.”

Spengler admits the company operates in a much more complex world nowadays. “What has happened over time is the complexity that customers have to deliver to their customers in terms of packaging services and end user applications. Those applications and services have become much more complex. This has been driven by diversity of demand for different customers and increased speed and bandwidth requirements,” he adds. “Companies want to be connected anywhere in the world. It has evolved from just a satellite focus to more of a telecommunications/IP focus. When we engage with customers, it is beyond just talking to a satellite group; we have to talk to their CIO, their long range planners, their CTO and CFO. We have a much more broader engagement with customers.”

McGlade is 53 himself, and says the company does not see itself as a 50-year-old company. He says Intelsat is clear on how keeping alive the “entrepreneurial spirit” that drove the company in its early days is key to its successful future. The first 50 years have been an incredible story, with many people from all over the world playing a part in building this iconic organization. It is likely that the next 50 years will be equally as exciting. **VS**