

STATE OF THE INDUSTRY

2003 State Of The Industry

By James Careless



With only 5.7 percent growth and total revenues of \$91 billion, 2003 was the global satellite industry's worst year since 1996, when the Satellite Industry Association (SIA) and Futron Corporation began compiling and publishing their annual "State of the Satellite Industry Report." This year, 2002's revenues grew 9.6 percent in contrast to the previous year, climbing from \$78.6 billion to \$86.1 billion; 2001's growth rate was 7 percent (from

\$73.7 billion to \$78.6 billion). To put these results into perspective, during the best year measured by the SIA/Futron report, which was 1996-1997, revenues grew 29.3 percent from \$38 billion to \$49.1 billion.

The only consolation is that the satellite industry did better than other similar businesses in 2003. In fact, "When compared to other sectors of the telecommunications industry, the almost 6 percent growth of commercial satellite industry is a very impressive

number" says SIA Executive Director David Cavossa. "As other sectors are posting losses, this gain demonstrates the viability of our industry even during less stable economic times". Going back to the numbers. Of the four segments covered by the report, "Revenues from the satellite services and ground equipment segments increased in 2003, while the satellite manufacturing and launch segments continued to

Commercial Space Transportation Satellite and Launch Forecasts

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	Average
Satellite												
GSO Forecast (COMSTAC)	20	22	16	19	19	22	22	23	24	24	211	21.1
NGSO Forecast (FAA)	6	8	24	17	7	12	6	11	7	8	106	10.6
Total Satellites	26	30	40	36	26	34	28	34	31	32	317	31.7
Launch Demand												
GSO Medium-to-Heavy	19	19	13	16	16	19	19	20	21	21	183	18.3
NGSO Medium-to-Heavy	3	2	5	3	1	1	1	1	2	4	23	2.3
NGSO Small	3	4	4	3	3	3	2	2	2	2	28	2.8
Total Launches	25	25	22	22	20	23	22	23	25	27	234	23.4

suffer losses," Cavossa says. "The only bright spot in the numbers was for the United States. In 2003, it had a 45 percent market share; up from 41 percent in 2002, and the highest percentage that the U.S. satellite industry has seen since 1999. In fact, in the eight years that the SIA and Futron have been collecting this data, only 1998 delivered a higher market share for the U.S., and that was just one point higher at 46 percent."

Satellite Services

For the global satellite industry, satellite services continue to provide the lion's share of revenues, and the best growth in all four industry segments. Specifically, in 2003 satellite services earned a total of \$55.9 billion, up 13.2 percent from 2002's \$49.1 billion. The previous year (2002), satellite services grew 5.6 percent (from \$46.5 billion to \$49.1 billion). In 2001, revenues grew 18.6 percent from \$39.2 billion to \$46.5 billion.

"Revenues for mobile phone services and remote sensing received a boost in 2003 due to increased government spending," says Phil McAlister, director of Futron's space and

telecom industry analysis division. "This spending was driven by military activities in Afghanistan and Iraq."

The satellite services' total is based on three revenue categories: Fixed Satellite Services (FSS) such as VSAT (Very Small Aperture Terminals) services, remote sensing, and transponder leasing; Mobile Satellite Services (MSS) such as mobile telephony and mobile data; and DBS/DARS, which covers DBS/DTH TV, DARS and satellite broadband (data).

Of these three, DBS and DARS lead the pack with revenues of \$44.7 billion in 2003, up 14.3 percent from 2002's \$39.1 billion. In contrast, this category grew 8 percent in 2002 (from \$36.2 billion to \$39.1 billion), and a whopping 29.7 percent in 2001 (from \$27.9 billion to \$36.2 billion).

"Satellite radio services experienced more than 400 percent revenue growth in 2003, although its revenues still account for less than one percent of overall satellite service revenues," says Cavossa. "Even transponder leasing reversed a two-year decline by posting 7 percent growth, primarily due

to increased government spending."

FSS was satellite services' second strongest category, as revenues climbed by 10.3 percent to \$9.6 billion. This ranked as FSS's strongest performance to date in the SIA/Futron reports, and reversed a 2.2 percent decline in 2002 (from \$8.9 billion to \$8.7 billion) and a 3.3 percent decline in 2001 (from \$9.2 billion to \$8.9 billion). Meanwhile, MSS went up an astounding 30.7 percent in 2003 revenues, going to \$1.7 billion from 2002's \$1.3 billion total. By way of comparison, MSS declined in 2002 by 7.6 percent (from \$1.4 billion to \$1.3 billion) and by 33 percent the year before (from \$2.1 billion to \$1.4 billion).

All told, 2003 was a good year for satellite services; a strong segment with good prospects for continued healthy growth.

Ground Equipment Manufacturing

The ground equipment segment's 4.2 percent growth rate in 2003 is misleading. The rea-

son is this figure reflects the interaction between increased sales volume for DTH/DARS, VSAT and satellite broadband earth terminals, and the falling per-unit prices for these items. In plain language, 2003's \$22.1 billion revenues (versus \$21.2 billion in 2002) shows that manufacturers are selling more earth station equipment, but selling it for less. In comparison, ground equipment revenues grew 8.2 percent (\$19.6 billion to \$21.2 billion) in 2002 and 10.7 percent (\$17.7 billion to \$19.6 billion) in 2001. The continued growth of DARS should be good news for this segment, so will satellite broadband if it takes off in future years.

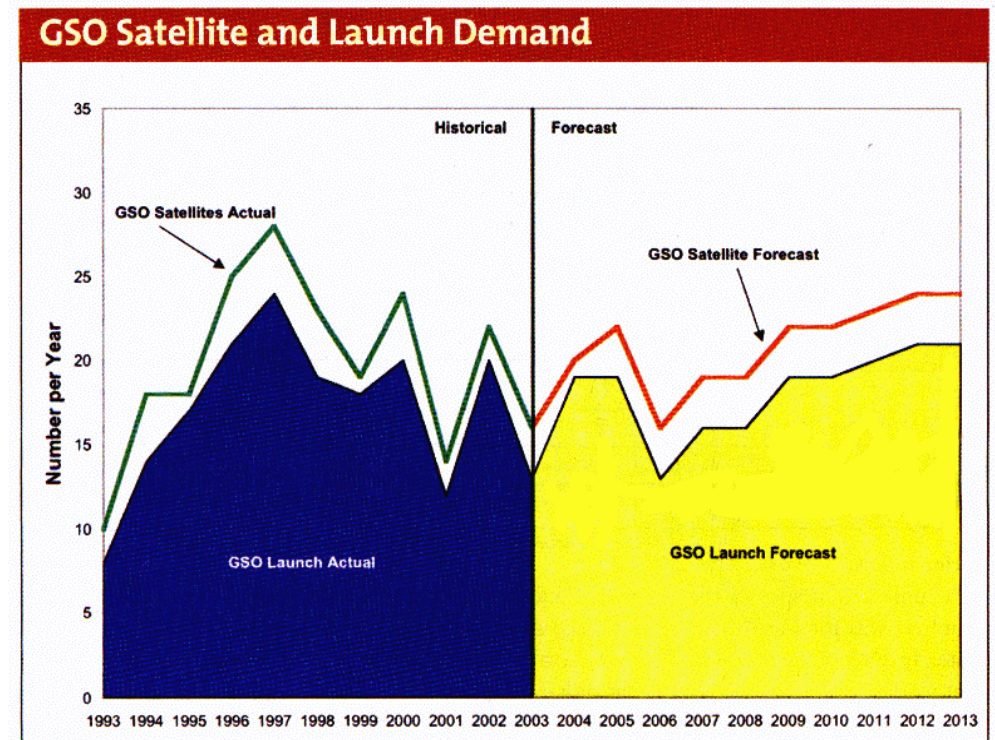
Satellite Manufacturing

In contrast to the satellite services segment, which was the satellite industry's best-performing sector in 2003, satellite manufacturing was definitely the worst. In 2003, satellite manufacturing's revenues declined 19 percent from 2002, with revenues dropping from \$12.1 billion to \$9.8 billion. Again, the U.S. provided the

Source: FAA and COMSTAC Technology and Innovation Working Group 2004 Commercial Space Transportation Forecasts.

only bright spot to this sector, with U.S. revenues growing from \$4.4 billion in 2002 to \$4.6 billion in 2003. This means that the U.S. market share grew to 47 percent in 2003, up from 36.3 percent the year before. This said, "the last three years' average (2001-2003) for the U.S. is down 35 percent when compared to this country's performance between 1996 to 2000," says Cavossa. "However, the number of U.S.-manufactured payloads remained constant in 2003 and the average value of these payloads increased, which is why revenues increased."

Depressing the satellite manufacturing market is the drying up of the Low Earth Orbit (LEO) market due to the problems of Iridium and Globalstar, plus decreased demand for new geosynchronous (GEO) satellites in the fallout of the dot.com/telecom crash a few



Source: FAA and COMSTAC Technology and innovation Working Group 2004 Commercial Space Transportation Forecasts.

years ago. This said, "we saw an increase in satellite orders in 2003 over 2002, with 19 new orders being announced during the year," says Cavossa.

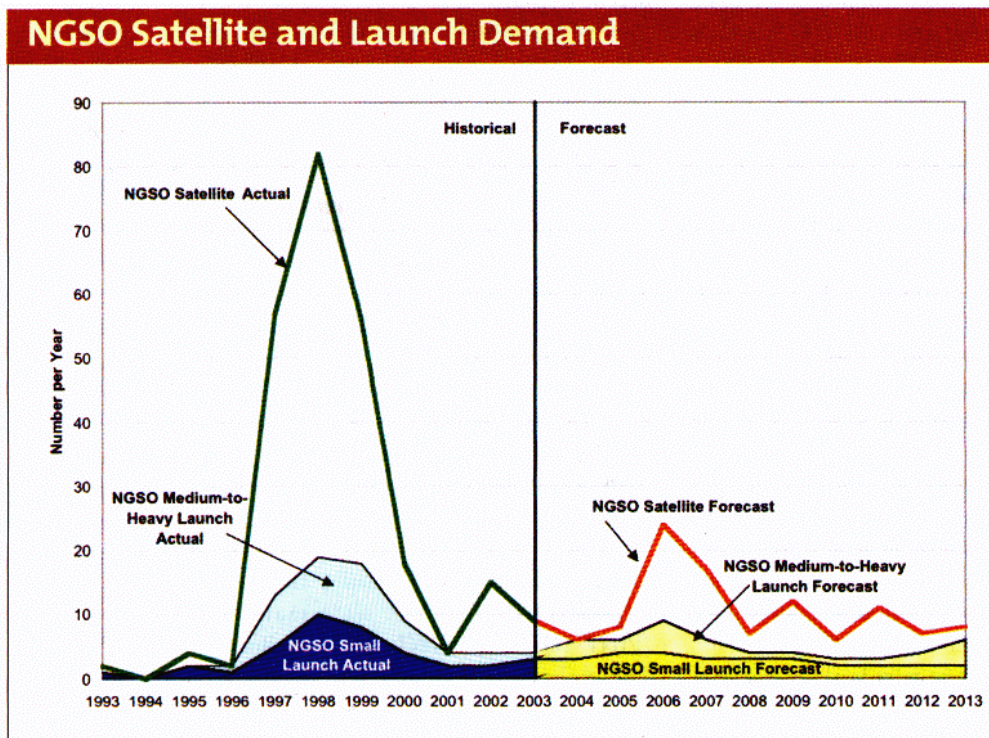
Launch Industry

"Global launch industry revenues fell by almost 14 percent in 2003 as a result of an overall drop in the number of launch-

es," says McAlister. On the contrary, "The U.S. launch industry revenues more than doubled in 2003, but this was entirely due to an increase in launches for U.S. government clients."

Specifically, global launch revenues fell from \$3.7 billion in 2002 to \$3.2 billion in 2003. In contrast, the U.S. share of these numbers more than doubled, moving from \$1 billion in 2002 to \$2.1 billion in 2003. Overall, 2003 was the second worst year for global launch revenues since the SIA/Futron started compiling this data in 1996. The only worse year was 2001 with total launch revenues of \$3 billion (the U.S. share being \$1.1 billion) and the best year recorded was 2000 with \$5.3 billion in global launch revenues (U.S. share being \$2.7 billion).

As with satellite manufacturing, the launch segment has been hurt by the near-collapse of the LEO market and the decline in



Source: FAA and COMSTAC Technology and innovation Working Group 2004 Commercial Space Transportation Forecasts.

Forecast Trends in Satellite Mass Distribution

	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	Total 2004 to 2013	Avg 2004 to 2013	% of Total
Below 2,200 kg (<4,850 lbm)	3	8	4	11	6	9	1	6	3	2	4	3	3	2	4	4	5	5	5	5	5	41	4.1	19%
2,200 to 4,200 kg (4,850 - 9,260 lbm)	7	10	14	14	22	14	16	14	6	11	6	5	6	8	6	6	7	6	7	7	7	65	6.5	31%
4,200 to 5,400 kg (9,260-11,905 lbm)	0	0	0	0	0	0	2	4	5	9	5	6	7	6	6	6	7	8	8	8	8	70	7.0	33%
Above 5,400 kg (>11,905 lbm)	0	0	0	0	0	0	0	0	0	0	0	6	6	0	3	3	3	3	3	4	4	35	3.5	17%
Total	10	18	18	25	28	23	19	24	14	22	15	20	22	16	19	19	22	22	23	24	24	211	21.1	

Source: FAA and COMSTAC Technology and Innovation Working Group 2004 Commercial Space Transportation Forecasts.

the number of new GEO satellites being manufactured. This explains why there were only 14 new GEO launch contracts signed in 2003. Seven were signed with ILS, one was signed with Sea Launch, four with Arianespace, one for Kosmostras (which is launching with decommissioned Russian SS-18 ICBMs), and one for the European/Russian Eurockot.

An Unsettled Year

2003 was another tough year for the global satellite industry, one that has been pining for the boom years of 1996 to 2000. This said, the satellite services and ground equipment sectors seem to be having a better time in the 21st century than are their counterparts in satellite manufacturing and launch services. The irony is that the first two segments' success is based on the previous efforts of their financially challenged colleagues. One has to wonder how long satellite manufacturing and launches can keep suffering without some sort of negative impact on satellite services and ground equipment revenues. The other message to be gleaned from the 2003 statistics is that increased

government spending was a much needed bright spot and helped offset, to some extent, the continued softness in commercial markets.

Such thoughts of the future lead us naturally to the COMSTAC/FAA 2004 Commercial Space Transportation Forecasts report, and a look toward the future.

Future Forecasts

We turn our gaze to the months and years to come with the aid of the COMSTAC/FAA "2004 Commercial Space Transportation Forecasts" (2004 CSTF) report. As in previous years, the COMSTAC and the Federal Aviation Administration's Associate Administrator for Commercial Space Transportation (FAA/AST) have compiled these 10-year predictions, based on data gathered from the satellite industry. COMSTAC predicts Geosynchronous Orbit (GSO) satellite and launch demand, while the FAA/AST predicts non-GSO (NGSO) satellite and launch demand. Anyone who has been reading the annual COMSTAC/FAA CSTF reports for the past few years will have noticed a trend by now; namely that each suc-

ceeding year's report seems to contain a section that explains why last year's report was overly optimistic.

Depending on which section is referenced, the 2004 CSTF is no different. On the issue of GSO satellites, for instance, the 2004 CSTF states that "this year's forecast contains an average of 21.1 satellites per year. ... The average is nine percent less than the 2003 forecast that contained 23.3 GSO satellites per year."

Why this consistent drop in GSO demand? In response, the 2004 CSTF cites poor global economic conditions, continued skepticism by investors toward anything broadband-related, and completed fleet updates by operators such as Panamsat, "which in May 2002 announced that the launch of Galaxy 3C (in 2002) would complete a \$2 billion 'fleet modernization program,' and that planned capital expenditures had been reduced by \$1 billion throughout the next four years." Also slowing the demand for new GSO satellites is the longer lifespan of those already in service.

Meanwhile, when it comes to launch predictions, "togeth-

er the COMSTAC and FAA forecasts project that an average of 23.4 commercial space launches worldwide will occur annually from 2004-2013," says the 2004 CSTF. "The combined forecasts are similar to last year's forecasts of 23.7 launches per year although still down from 26.8 in the 2002 forecast and 32 in the 2001 forecast."

On the bright side, the 2004 CSTF does not have to qualify its 2003 NGSO predictions as being too positive. On the contrary, "this year's NGSO forecast contains an average of 10.6 satellites per year compared to eight in last year's forecast," the report says. These NGSOs will be a mix of small science, telecommunications and commercial remote sensing satellites, according to the 2004 CSTF.

Specifically, it is predicting 58 scientific, 16 remote sensing and 24 little LEO telecommunications NGSOs to be launched between now and 2013. The 2004 CSTF explains the upward revision of earlier forecasts by pointing to increased commercial interest in remote sensing and 'mobile communications' applications—helped by the fact that Iridium and Orbcomm are out

of bankruptcy and still in business—and the scientific community's preference for NGOs as the most economical means for reaching space.

Finally, as to the mass of tomorrow's satellites: the 2004 CSTF predicts that satellites weighing between 4,200 to 5,400 kilograms (9,260 to 11,905 lbs) will account for 33 percent of the satellite manufacturing market by 2013, as opposed to 30 percent in 2004. Close behind with 31 percent of the market in 2013 will be satellites with a mass between 2,200 to 4,200 kg (4,850 to 9,260 lbs), which have 25 percent of the market today. Satellites weighing more than 5,400 kg—six of which the CSTF expects to be launched in 2004 (the first year such large satellites will be lofted)—are predicted to have 17 percent of the 2013 market, as opposed to 30 percent in 2004. Finally, satellites weighing 2,200 kg (4,850 lbs) or less will account for 19 percent of the 2013 market, as compared to 15 percent in 2004.

"The current forecast provides evidence that the shift to heavier satellites appears to be slowing," explains the 2004 CSTF. "There are several reasons for this shift, but the foremost reason is the current economic climate. During uncertain times, the ability and willingness of most com-

mercial firms to assume risk is reduced.... New satellite applications that require higher power levels and thus heavier satellites have been delayed due to concerns over the risks associated with these ventures."

Wild Cards In the CSTF's Predictive Deck

Despite their best efforts to provide realistic predictions, the authors of the 2004 CSTF report know there are many 'wild cards' being played in the market today. Any or all of these wild cards could change the future sufficiently to render their carefully considered predictions out of date.

From their position in 2004, the CSTF's GSO authors see six factors that could cloud their crystal balls. These are future economic conditions, the success of new applications such as satellite broadband, the competition from low-priced terrestrial fiber, the improved data compression technology further reducing the need for bandwidth, the changes in regulations and the move toward less-expensive non-U.S. space hardware.

In particular, "the U.S. government makes it difficult for satellite operators to consider the use of Chinese assets for

launch," notes the 2004 CSTF report. "As more customers use foreign satellite manufacturers, there is a higher likelihood that these customers will use Long March as their launch provider. Russian satellite manufacturers are also seeking commercial customers. If the total price of a satellite system becomes low enough, the demand for such a system will grow and the market capture will be redistributed."

In other terms, if the U.S. government continues to prevent satellite operators from putting U.S. satellites on Chinese launchers, the operators will buy cheaper non-U.S. satellites and do so anyway.

Conclusions

2003 was another tough year for the global satellite industry. The segments that are doing best - satellite services and ground equipment - are profiting from the previous efforts of the two most depressed sectors: satellite manufacturing and launch.

2004 and beyond looks to be more of the same, with satellite manufacturers and launch providers still being squeezed by tight demand and a buyer's market. The only good news, prediction-wise, is that the NGSO market's outlook is improving. Still, the glory days of the late 1990s remain history, with no sign that they will be returning soon.

For an industry that has weathered some hard times recently, these are times of reflection. Unfortunately, beyond cutting costs, chasing new business, and trying to devise the 'killer apps' of tomorrow, there is little the global satellite industry can do besides continuing to hang tough. ■



JAMES CARELESS IS SENIOR CONTRIBUTING EDITOR TO VIA SATELLITE

Editor's Note: For more information, visit the following Web sites:

SIA/Futron State of the Satellite Industry Report June 2,2004
http://www.sia.org/industry_overviewI03industrystats.pdf

2004 Commercial Space Transportation Forecasts (COMSTAC and FAA/AST): http://ast.faa.gov/rep_study/forecasts_and_reports.htm