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Sector Spotlight

Sizing COVID-19's Impact on the Space Industry

First unleashed in Wuhan, China, in December 2019, the Coronavirus disease 2019 (COVID-19) has quickly emerged into a worldwide pandemic that threatens to push the global economy into a synchronized recession. In a matter of months, entire industry sectors, including the cruise industry, commercial airlines, the hospitality sector, sports venues, and movie theaters have been decimated or entirely shut down.

No industry, including the Satellite & Space industry, has been immune from the pernicious effects of this global pandemic, but some industries will inevitably fare better than others. How will the Space industry fare during the current downturn? While past crises (9/11, swine flu, the Great Recession, etc.) provide some hints of what to expect, as Tolstoy would say, no two crises are ever alike.

OUR BASELINE ASSUMPTIONS

While it is still too early to predict exactly what path the pandemic may take, our baseline assumptions for the near-to-intermediate term include:

- COVID-19's spread has become essentially global and will take some time to contain.
- Most governments adopt policies to quarantine at-risk populations while restricting travel and preventing large gatherings, creating major economic disruptions across the world for the next 30-60 days.
- The pandemic peaks during May and then recedes into the summer months as preventative measures and warm weather (hopefully) stem the virus' spread.
- Fiscal stimulus averts some of the potential for even wider-scale economic and financial decimation (monetary policy will not be a particularly effective tool in isolation in the current environment).
- The global economy enters into a moderate two-to-three quarter recession (not mild, but also not an economic collapse).

We assume that one or more vaccines will be developed to mitigate COVID-19's impact, thus preventing ongoing virus-driven economic dislocation in 2021 and beyond. Even with a "silver bullet," however, we expect the pandemic to have a long-term impact on certain societal trends, such as fostering telework and changing attitudes toward some social activities.

NO PLACE TO HIDE: MAJOR IMPACTS OF THE CURRENT PANDEMIC

While astronauts aboard the International Space Station (ISS) are undoubtedly safe from COVID-19, the broader Space industry, encompassing hundreds of thousands of jobs and ~$400 billion in annual commerce, does not enjoy the same level of extreme self-quarantine. Consequently, we expect COVID-19's impact on the industry to be material and far-reaching, although the degree of hardship will vary by sector, activity, geographic location, end-market, and a variety of other factors.

Before delving into specific scenarios, we present some general assumptions that apply equally across the entire industry landscape:

- **Timelines slip to the right.** With few exceptions, we expect corporate planning timelines, including product/service launches and major investment activities to move to the right by one to three quarters. Timetables for R&D and other collaborative processes (particularly those involving the development or manufacture of hardware/physical products) will also elongate due to reduced efficiencies.
- **Lost efficiency.** On the manufacturing floor, we see a material reduction in production efficiency occurring during the next 3-6 months as companies partially (or fully) close certain facilities and reduce or otherwise move to a shift schedule to minimize staffing levels.
- **Supply chains disrupted.** As factory production levels dip and transportation networks slow, an increasing number of companies will incur component shortages and production hiccups. Call it the downside of just-in-time…
- **Contracts renegotiated.** Is a company sitting pretty because it has a long-term contract with its suppliers/customers? Think again. During times of severe economic dislocation, long-term contracts will be renegotiated in segments where there is excess supply and distressed customers (e.g., some segments of SATCOM).
- **2019 earnings forecasts get trashed.** Most companies in the S&P500 reported Q4 earnings well before the full impact of COVID-19 became apparent. We expect most companies in the Satellite & Space universe to withdraw their 2020 guidance due to extreme uncertainty, and we would not be surprised if most companies experience lower revenues (and profits) compared to 2019.
- **M&A and investment breather.** Many M&A and investment deals that are not already on-or-near the finish line will be delayed. The current environment of extreme uncertainty and volatility, coupled with travel restrictions, will drive reduced deal volumes for at least the next 3-6 months. That said, investors are still sitting on significant troves of capital, and they will deploy it opportunistically when warranted.

SPACE: LESS BAD THAN OTHER SECTORS?

While by no means immune from the broader economic downdraft, we nonetheless expect the Satellite & Space industry to fare somewhat better from a demand perspective than the economy-at-large. Factors supporting this outlook include:

- **Sizeable government dependency.** We are fairly confident that government spending levels (civil, defense, etc.) will be maintained (and perhaps boosted) over the near-to-intermediate term, providing a safe haven for companies that serve the government market. In certain end-markets such as Earth-observation & Geospatial, government customers comprise upwards of 70% of industry spending.
- **Support for first responders.** Due to their highly reliable and survivable nature, SATCOM services, whether delivered by a flyaway VSAT terminal, a satellite phone, or an IoT device, are considered a necessary resource for any first responder toolkit.
- **Resilient consumer exposure.** Putting aside the longer-term trend of cord-cutting, consumers are unlikely to sever their DTH home TV services during a time of self-quarantine. Likewise, purveyors of consumer broadband services (**EchoStar**, **Viasat**) could experience a mild demand bump as consumers are forced to bunker down and work from home.

- **Telecom backbone.** Satellite operators play an important role in supporting global telecom services, including cellular backhaul, enterprise communications, and disaster recovery – all of which are highly-resilient to macroeconomic trends.

HOW SATELLITE & SPACE STACKS UP

Which sectors of the Satellite & Space sector will be hit the hardest? And which are more buffered against the current (expected) downturn?

Highly Resilient

- **Satellite consumer broadband.** We expect consumer broadband to be highly resilient to the COVID-19 outbreak and should be largely recession-proof. While the rate of new subscriber additions may slow somewhat, we do not expect meaningful increases in churn, and if anything, the current crisis reinforces the importance of having a reliable broadband connection. We would note that **WildBlue**, which was acquired by **Viasat** in 2009 as the last financial crisis subsided, managed to grow throughout that particularly volatile period.
- **Defense and security space investment activities.** Over the past 3-5 years, geopolitical tensions and emergent risks have prompted Defense agencies to increase their spending in the space domain with an emphasis on: (1) moving to distributed satellite architectures, (2) increasing their commercial SATCOM spending, and (3) expanding their satellite-derived GEOINT capabilities.

  The COVID-19 crisis is unlikely to fundamentally change these trends but may prompt a movement toward greater self-autonomy in order to more effectively manage borders, coordinate internal public health crises, and conduct predictive analytics around future threats. Consequently, the longer-term net impact of the COVID-19 outbreak could include higher government spending on relevant space assets, ground infrastructure, and analytical tools.
- **First-responders/civil/NGO service providers.** We believe that first-responder and NGO mobilization will drive a small uptick in SATCOM activity (VSAT, satphones, portable terminals, etc.) by these entities in the near term, followed by steady and dependable revenues over the longer-term.
- **Well-funded space startups.** We are entering a phase in the economic cycle where access to financing may become more challenging. We are highly bullish on the secular prospects for development of the Satellite & Space sector, and a downturn will help to cull the weakest players from the landscape, leaving the survivors to capitalize on the growing market opportunity. In our view, the best-positioned players will be those with 12-18+ months of existing liquidity.

Mixed

- **Premium service providers (e.g., those serving business aviation, superyachts).** High-end corporate customers will avoid commercial air travel where possible (or may find it unavailable), particularly over the next 3-6 months. Private jet bookings have skyrocketed in recent weeks. Meanwhile, anecdotally, we understand that superyacht utilization is increasing as that small segment of the population practices an ultimate form of social distancing. Longer-term, some erosion in business aviation and superyacht SATCOM is inevitable with the looming recession, although we expect the pullback of these subsegments to be less significant than in the previous 2001-2002 or 2008-2009 periods, as the effects of an economic downturn are partially offset by increasing relative attractiveness of high-end, private travel.

Losers

- **Commercial in-flight connectivity (IFC) providers.** Commercial airline capacity has been drastically cut, with many major global airlines cutting 30-75% of their passenger capacity for at least the next one to three months. This near-term COVID-19-induced cut will be followed by the gradual return of a "new normal" sometime this summer that will likely reflect: (1) recessionary conditions and (2) bankruptcy for some air carriers. For reference, U.S. commercial passenger miles decreased at a 3% CAGR from 2000-2002 and declined at a 5% CAGR from 2007-2009.
- **Cruise service providers.** Major cruise lines, including **Carnival** and **Royal Caribbean,** are suspending operations globally for at least the next month. We expect that the cruise industry's challenges will persist much longer, as many passengers will remain reluctant to be confined on such vessels in the near-to-intermediate term, post-crisis. We believe that cruise ranks among the most difficult customer segments for satellite service providers to serve – and that's in the good times.
- **Energy & natural resources service providers.** News of cratering commodity prices has, at times, gotten lost in the COVID-19 headlines. Today's WTI crude oil prices (just under $30) are brushing the lows of the last cyclical low (previous low of $26/bbl reached in 2016) – and are approximately half of their yearend 2019 prices. Other commodities have not fared as poorly. Service providers catering to these industry segments have performance that correlates to commodity pricing environment.
- **Overleveraged Satellite & Space companies.** Risk tolerance is quickly receding, and corporate profits are poised to fall (in many cases significantly) in 2020. Overleveraged companies, particularly those with near-term debt maturities that must be refinanced, are in potential peril.
- **Space startups with strained liquidity.** Venture capitalists are sitting on record levels of dry powder – and they will continue to support deserving portfolio companies and make opportunistic new investments. That said, we expect the "bar to be higher," and there will be pressure on valuation levels. Corporate venture capital (CVC) activity may be particularly impacted. Likewise, while we understand that financial investors are still actively evaluating deals, their first prerogative is working with existing portfolio companies, reserving capital to ensure that their potential "winners" are in a good spot and able to hunker down and survive. As a point of reference, venture investment volumes (in $) decreased at a 15% CAGR from 2007-2009 before rebounding strongly in 2010-2011. While deal count during the Great Recession did not shrink materially, deal values lightened (avg. deal size declined by ~30% according to NVCA data), and valuations came in.

OVERVIEW BY SPACE INDUSTRY SEGMENT

Earth Observation & Geospatial

With global revenues of $3.4 billion (2018), the EO market is one of the sectors that could experience an overall net benefit from current events as demand for satellite imagery and downstream analytics increases for applications such as border security, pattern-of-life-monitoring, and macroeconomic analysis. Key beneficiaries would include **Maxar** as well as **Airbus, BlackSky Global**, **ISI**, **Orbital Insight**, and **Planet**.

Enablement (Manufacturing & Launch)

Companies in the business of manufacturing satellites and launch vehicles should benefit from near-term stability due to the long-duration nature of these efforts (e.g., typical satellite build cycle of 2-3 years). We expect some supply chain disruptions and (workforce-related) manufacturing inefficiencies, but secular demand trends for government customers and GEO satellites should not change materially unless COVID-19 evolves to become a trigger for depression-scale contraction (unlikely).

That said, commercial smallsat activities may see a modest, temporary pullback as the weakest early-stage constellation players reign in capital spending or, in some cases, fail due to insufficient funding.

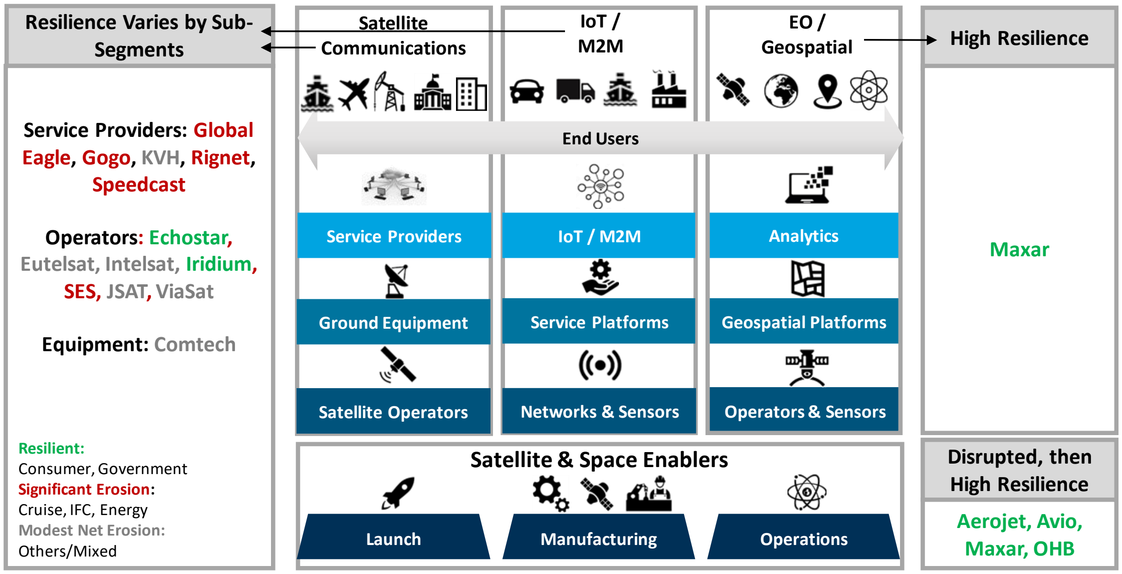
Satellite Communications

We see the following major impacts to the satellite communications industry (operators and downstream service providers). Market size estimates for 2018:

Market	Mkt Size ($, B)	Near-to-intermediate Term View	Select Companies
Video	**$6.4**	Long-term secular downtrend due to cord-cutting	Eutelsat, Intelsat, SES
Wholesale Data & Voice	**$5.6**	**FSS ($4 B):** Intelsat, SES, Eutelsat; **MSS ($1.6 B):** Iridium, ORBCOMM, Globalstar	
Retail Data & Voice	**$12.0**		
Enterprise & Government	$5.6	Highly resilient in government. Reasonably resilient in enterprise.	EchoStar, Global Eagle, Speedcast
Consumer broadband	$2.3	Resilient in developed mkts. Less so, emerging mkts.	EchoStar, Viasat
Mobile satellite services	$1.9	Highly resilient. Maritime, first responders, military	Iridium, Inmarsat, Globalstar
Maritime	$1.1		
Merchant		Mostly stable	Inmarsat, Marlink
Cruise		Severe crash	Global Eagle, Speedcast
Yacht/superyacht		Near-term stable/modest uptick, then down modestly	Marlink, Speedcast, KVH
Energy	$0.8	Falling demand along with falling commodity prices	RigNet, Speedcast
IFC/Aero	$0.5	Sharp declines in commercial aviation as planes are parked. Bizjet near-term uptick then down modestly	Gogo, Global Eagle, Viasat, Intelsat, SES, Satcom Direct

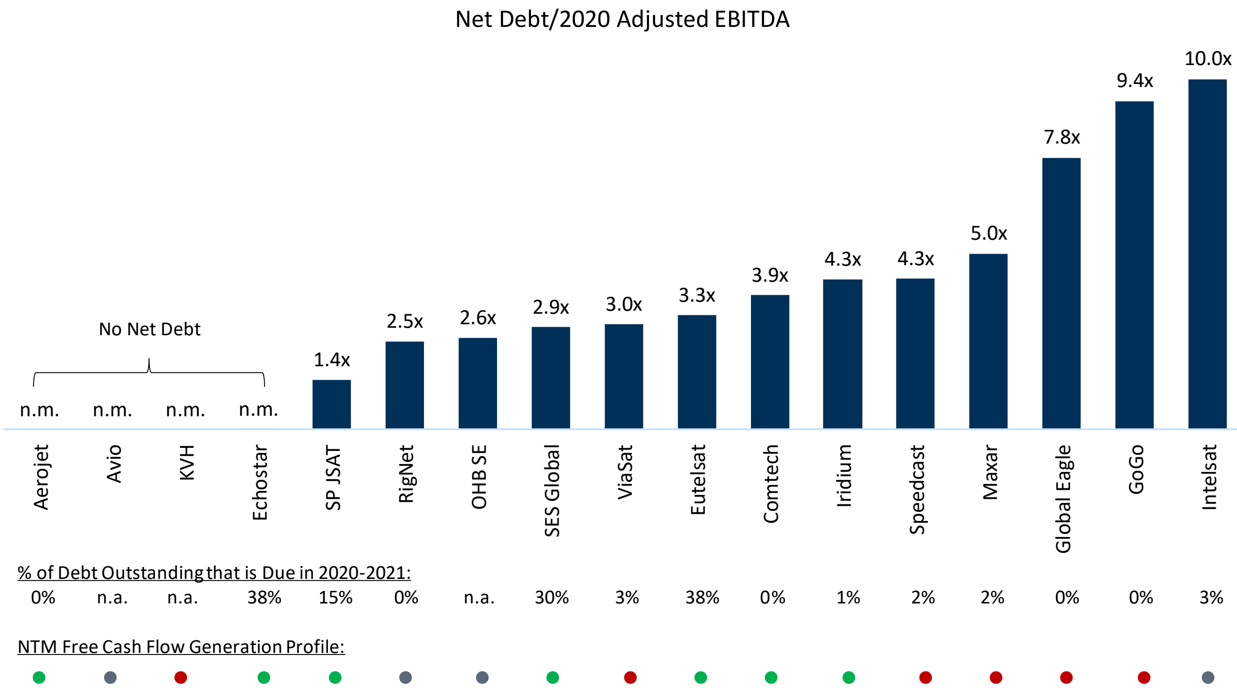
PUBLIC COMPANIES: WHO WILL WEATHER THE STORM?

The public companies that we track for our core Satellite & Space ecosystem have widely ranging end-market exposure and financial wherewithal to weather the oncoming storm. The illustration below maps our view of general strategic/end-market resiliency against our framework for segmenting the Satellite & Space ecosystem:



Source: Quilty Analytics

The following table illustrates net financial leverage, upcoming 2020-2021 debt maturities (expressed as a percent of total corporate indebtedness), and free cash flow profile:



Notes:
1) 2020 Adjusted EBITDA is based on consensus at 3/17/2020 likely overstates EBITDA and understates forward leverage for many companies presented.
2) Next twelve month (NTM) free cash flow generation profile is based on operating free cash flow less capital expenditures and does not include financing/repayments. Red represents meaningful outflow (excluding one-time items), grey represents modest inflow or outflow, and green represents inflow.
3) Comtech is pro forma based on reported information for announced acquisition of Gilat
4) Maxar is pro forma based on reported information for announced divestiture of MDA unit
5) Intelsat is not adjusted for C-band incentive proceeds, which on a gross pre-tax basis would provide \$4.9B in aggregate potential proceeds in 2021-2023 for de-levering

Fortunately, none of the companies with 4.0x or higher net leverage have substantial near-term debt maturities, although a few are tight from a covenant compliance perspective. Of the more leveraged companies, the following two should show the greatest resilience:

- **Iridium** recently entered into a ~10-year capex holiday following the successful deployment of its NEXT constellation and recently refinanced its debt. The company should also experience relative resilience in the near- to intermediate-term, given its mix of end-market exposure.
- With its recent completed refinancing, sale-leaseback, and its pending MDA sale, **Maxar** is financially equipped for short-term economic dislocations. Its primary end-market, satellite Earth-observation, should be highly resilient in the face of the current downturn.

We expect that **Intelsat** will experience near-term demand resilience, but there is a heightened risk that certain of its customers (e.g., those in travel-exposed/challenged industries), facing their own issues, will renegotiate their capacity contracts or churn altogether.

We also see **Aerojet** and **EchoStar**, with no net debt and end-markets focused in areas that should be resilient to the current downturn, as quite well-positioned overall.

CONCLUSION

No industry is immune from pandemics or recessions, but there are some segments of the Satellite & Space industry that we expect to adapt, and potentially even thrive, over the next year. While no one roots for a recession (especially a pandemic-driven one), they are a natural part the business cycle that unceremoniously accelerates the process of separating the winners from losers. The Satellite & Space industry was already in the midst of a period of rapid transformation. Inevitably, the industry will emerge healthier and better positioned for growth when life, and the economy, returns to normal.

Quilty Analytics is a leading provider of value-added financial research, strategy, and advisory exclusively for stakeholders in the global Satellite & Space ecosystem. Please contact us at info@quiltyanalytics.com for more information about our research, industry coverage, and sector views.

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