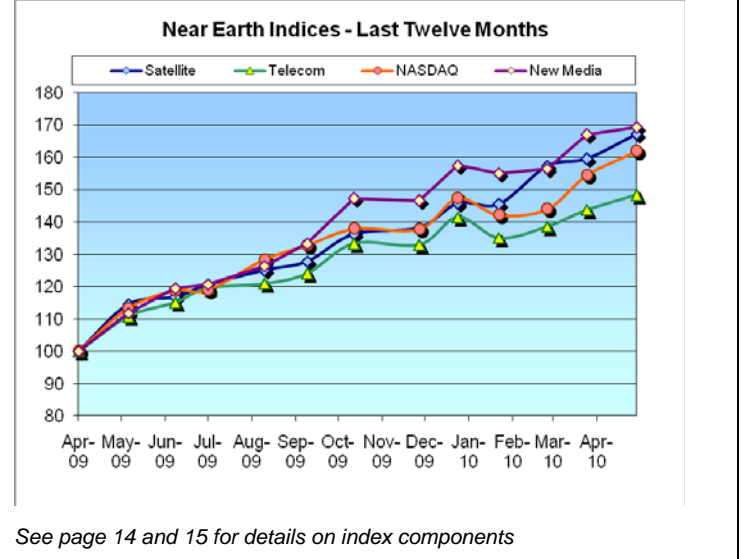


FROM THE GROUND UP

May 2010

Inside this Issue:

- Page 1: **The Way We See It...**
Satellite, Telecom and Aerospace News
- Page 2: Zombie Satellites and Lessons Learned
- Page 7: Harbinger's LTE Network – Son of Clearwire?
- Page 10: Guest Column - Net Neutrality on the Ropes:
 Broadband wars to replace local competition wars?
- Page 14: Near Earth Analysis: Market Comparables
- Page 16: Near Earth Analysis: M&A Transactions



THE WAY WE SEE IT...

Satellite:

Microwave Satcom has been hot lately, with **Comtech Telecommunications** acquiring **CPI International** for \$472 million, including assumed debt. With the deal priced at 1.4x revenues and over 8x EBITDA, we wouldn't be surprised to see other deals come out of the woodwork. At the other end of the deal spectrum, **Integral Systems** acquired microwave satcom supplier **Sophia Wireless** for a mere \$2.5 million. **Hughes Network Systems** got even cozier with **Avanti Communications, LTD.**, the European satellite broadband provider. **Hughes** agreed to provide **Avanti** with an additional \$18 million in ground infrastructure, while at the same time acquired additional Ka band capacity to fuel its continued expansion outside the U.S., in the U.S., its HughesNet satellite broadband offering continues to expand, most recently to 530,000 subscribers. Finally, satellites are making less welcome headlines from the wayward Galaxy XV, which has started drifting uncontrollably into adjacent orbit slots, but still continues to broadcast at full power. Observers are fearful that the craft will start interfering with AMC-11 and its many popular video channels. Engineers continue to work towards a solution (see the related article in this month's newsletter).

Telecom:

Federal Communications Commission Chair Julius Genachowski pushed the Red Button, opting to call for the so called "nuclear option" of regulating broadband as a Title II telecommunications service, albeit with some limitations ("tactical nukes", as it were). This follows **Comcast's** recent Supreme Court victory throwing out the FCC's previous attempt to enforce net neutrality rules against **Comcast** (see the related article in this month's newsletter) Given the substantial free speech concerns on the one hand, and private property concerns on the other, expect a lot of noise on this issue for some time to come... Speaking of private property, earnings season for the big wireless carriers was largely a rosy affair, especially for **Sprint** and **MetroPCS** on the continued strength of prepaid subscriber growth. With the relative appreciation of **MetroPCS** vs. **Leap** on the strength of **MetroPCS'** relatively stronger earnings, a potential stock for stock deal becomes more doable, too ... **Harbinger Capital** and **T-Mobile** are rumored to be in discussions over participation in **Harbinger's** announced nationwide 4G LTE network. We think this could make things interesting (see the related article in this month's newsletter)

Aerospace:

Sea Launch got a vote of support when **Energia Overseas Limited** took out previous debtor in possession investor **Space Launch Services, Inc.**, replacing their \$19 million facility with a new \$30 million DIP facility. Given the substantial role (i.e. rocket vendor) that **Energia** is likely to play in a reorganized **Sea Launch**, it now appears highly likely that **Sea Launch** will be flying again soon. **Space Systems Loral** hired two investment banks to "explore strategic alternatives" or IPO up to 19.9% of the firm. A merger of **SS/L** with **Lockheed** or **Orbital** we think may make more strategic sense than an IPO. This follows prior deleveraging activities at Loral's **Telesat** affiliate. With substantial hedge fund ownership in the parent of both, **Loral Space and Communications**, we wonder if this is the beginning of an exit strategy in the making.

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Zombie Satellites and Lessons Learned

An errant satellite like Galaxy 15 is called a “Zombie Satellite” in industry lingo, but zombies are quiet, if deadly. This one is more like a loud drunken satellite...

As of this writing, Galaxy 15 is staggering through the GEO arc like a loud drunk whose off key singing is not at all appreciated by the peaceful residents. The drunk’s family (owner Intelsat and manufacturer Orbital Sciences) are trying hard to get him off the street and back in bed, but so far to no avail. Their yelling is just not getting through that besotted brain. Neighbors are being very understanding as they know they too could be in a similar circumstance, but soon the singing will be seriously disrupting to the community.

An errant satellite like Galaxy 15 is called a “Zombie Satellite” in industry lingo, but zombies are quiet, if deadly. This one is more like a loud drunken satellite whose broadcasts threaten to create severe interference to other geostationary satellites in its path. Perhaps drunken is the wrong analogy, as clearly, the satellite was a very respectable orbiting citizen before its recent troubles and probably not to blame for its recent behavior. It is more like Galaxy 15 was drugged without its knowledge. The culprit is suspected to be “unusually violent solar activity that week that damaged the spacecraft’s ability to communicate with ground controllers” according to officials at Orbital Sciences.

Orbital Sciences is doing everything humanly possible, but so far has been unable to turn off the satellite. Apparently, they have also not been able to replicate the failure with comparable components in the lab. Thanks to the high degree of autonomy built into state of the art satellites, it looks like Galaxy 15 will continue to drift and interfere for roughly three months until it becomes disoriented and loses power as its solar arrays lose their lock on the sun. Ironically, lack of sunlight may in fact be the only fix for the problem the sun caused in the first place.

LESSON #1 - Black Swans can happen to any industry and can be devastating

So what happened and what lessons are to be learned? Communications satellites like Galaxy 15 are built to withstand the vast majority of expected solar activity and even in rare events where a component is compromised there is generally a work around or a way to reset the system, but not this time. It appears to be a truly Black Swan event for the satellite industry; totally unexpected, but in hindsight probably just a matter of inevitable probability (like an oil rig not being able to restrain a violent methane bubble, exploding and causing a multi-million gallon oil spill larger than Florida).

LESSON #1 - Black Swans can happen to any industry and can be devastating. Each industry needs to weigh the extra costs of protecting itself from these rare events and acting jointly to make sure the entire industry is protected (be it oil, banking, biotech or satellites).

Zombie Satellites and Lessons Learned (cont.)

LESSON #2 - The costs of failure can be devastating.

I suggest the time to take action is now. This unexpected violent solar activity happened at the early stages of what helio-physicists call the Solar Cycle, the periodic increase of sun spot activity that leads to peak solar activity before falling off again. We are now in Solar Cycle 24 and it was a late starter beginning three to three and a half years later than the average solar cycles of the last century. However, in the last few months it has been ramping up rapidly. Still, what is amazing is that we are still relatively far way from the predicted peak in May 2013. What's more, according to NOAA, Solar Cycle 24 is predicted to be the weakest since Solar Cycle 16 in 1928. Even so, NOAA experts say the Earth "could get hit by a devastating solar storm at any time, with potential damages from the most severe level of storm exceeding \$1 trillion." If we can lose a satellite at this early stage in the solar cycle, what might happen at the peak in three years and more importantly what might happen at the peak of a far more robust solar cycle?

We may not yet have enough data on the distribution of solar storm intensity to truly predict the risks to the world's satellite assets. Our advanced and highly complex satellites have been operating through only a few solar cycles and our detailed measurement of solar weather in space began in the late 90s. Until we better understand the nature of solar storms, what should the industry be doing to protect its assets and customers?

LESSON #2 - The costs of failure can be devastating. It may be money well spent to increase redundancy and further harden critical components to levels not anticipated before.

LESSON #3 - Replace ACE now!

Another important lesson learned is the importance of accurate and timely warnings for solar storm activity. During periods of high solar activity, satellite operators are frequently warned in advance by NOAA's Space Weather Prediction Center of potentially harmful solar radiation. These warnings allow the operators, if necessary and possible, to configure their spacecraft to minimize the risk of damage. The satellite used to create these warnings was launched in 1997 by NASA. It is called Advanced Composition Explorer (ACE) and sits at the L1 libration (Lagrange) point between the Earth and the Sun, over a million miles "upwind" in the space weather. At this position, ACE can measure the energetic particles streaming out from the sun up to an hour before they hit our satellites. ACE had a design life of two years and a goal of five years. The "goal" was achieved eight years ago, yet a replacement for ACE has not even been funded despite the fact that it not only helps protect our satellites but also the vastly more expensive terrestrial power and telecom assets of the world.

Zombie Satellites and Lessons Learned (cont.)

LESSON #3 - Replace ACE now! Replace ACE with a more capable system that can provide satellite operators with more accurate and actionable information. Furthermore, given the track record established with NPOESS, the replacement is too important to be trusted to NOAA. NASA or the U.S. Air Force would be better project managers, but perhaps even better would be to privatize this service and allow a commercial entity to offer the data globally. A commercial entity would have the profit motive to make sure the data received maximum distribution.

LESSON #4 - Maximizing capacity utilization may enhance near term profits, but it does not provide customers with realistic back-up options

Perhaps the most immediate and obvious lesson learned was the importance of ready back-up capacity. Luckily, Intelsat was able to efficiently off-load its 24 C-band transponders of media customers from Galaxy 15 at 133° West to Galaxy 12 at 125° West and with little to no service interruptions. Will other operators be able to offer this same service level commitment in such situations? The cost of satellite transmission is a small part of the value chain for media companies, but the loss of transmission is catastrophic. We expect media customers will increasingly insist on very robust back-up capabilities. The Galaxy 15 lesson will not have been lost on these customers. Looks like a huge competitive advantage to us and one worth a nice price premium for capacity.

LESSON #4 - Maximizing capacity utilization may enhance near term profits, but it does not provide customers with realistic back-up options in the event of anomalies and other emergencies. Losing customers and their long-term contracts is a lot more expensive than having spare satellites.

LESSON #5 - Large fleet operators have a natural advantage over small fleet operators in providing higher service level commitments

LESSON #5 - Large fleet operators have a natural advantage over small fleet operators in providing higher service level commitments. Small fleet operators need to create alliances for back-up emergencies and should consider launching two smaller satellites versus one large satellite in markets where customers will pay a price premium for the extra safety.

Another aspect of this event that bears mentioning is the potential impact to the satellite insurance industry. The satellite insurance industry routinely handles the total loss of one or even a few satellites, but what would happen if a major unprecedented solar storm turned a hundred satellites into zombies? This Stellar Night of the Living Dead may be a low probability event, but it could end satellite insurance as we know it for decades. The space insurance sector of the property and casualty industry is just too small to matter to most underwriters. It is not too big to fail. Whereas the property and casualty insurance companies have to stay in the business after a Katrina or a 9/11, there is no compelling profit motive for them to bother continuing to write in-orbit satellite coverage

Zombie Satellites and Lessons Learned (cont.)

following a similarly costly and unexpected event in space. The aggregate annual premiums are just not significant enough.

LESSON #6 - Satellite insurance is a luxury, not a right. It can go away quickly. Black Swan events do not appear to be priced into the premiums. Satellite insurance may be a better deal than most operators think. Those operators that self-insure much of their fleet are bearing a hidden level of catastrophic risk.

LESSON #6 -
Satellite insurance
is a luxury, not a
right

A drifting zombie satellite also highlights another important issue and that is just how crowded the GEO arc has become. Spaced two degrees apart and with many orbital slots holding multiple satellites, the GEO arc is now well populated with hundreds of satellites. That is not to say there is not room for many more satellites. There certainly is and especially for Ka-band, X-band and other as yet developed spectrum. However, for C and Ku-band things are getting a bit cozy. With the developing world developing, HD and soon 3D video proliferating and satellite broadband ramping up quite nicely, we need to find more space in space.

Perhaps it is time to put less of our space segment eggs in this crowded basket and exploit other viable constellation architectures. O3b Networks Ltd plans to put 8 – 16 satellites in a medium Earth orbit (MEO) versus geostationary orbit to provide connectivity to the equatorial region. Sirius XM Radio Inc. broadcasts audio content to approximately 20 million customers using elliptical orbits. Perhaps even more interesting is the Virtual GEO concept where a specially configured set of elliptical orbits can create what appears to be geostationary satellites at latitudes well above or below the equator, thus greatly expanding the number of available orbital slots for all bands.

LESSON #7 - It is time to give non-geostationary orbits like MEOs and elliptical constellations greater consideration.

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Lastly, it occurs to me that the best way to get a drunk of the street is with a policeman walking his beat. For zombie satellites, the best solution might be to finally put into operation an in-orbit satellite servicing and disposal capability. Space tugs and such have been talked about for decades, but we may finally have the robotic technology and telepresence to actually make it work and affordably too. Two of the commercial initiatives NASA is now studying involve in-orbit servicing and fuel depots in space. These are capabilities that could be important for future NASA and DOD missions, but they also have significant commercial satellite applicability. One application would be to rid the GEO arc of zombie satellites and other space debris to protect operational satellites. It is expected that Galaxy 15 will drift until it comes to rest in one of the libration points in GEO. These are at 75° East and 105° West. There are over 100 dead satellites currently resting in these graveyards. That's a lot

Zombie Satellites and Lessons Learned (cont.)

LESSON #8 -
robotic in-orbit
servicing, space
tugs and fuel
depots may soon
make economic
sense

of spare parts. Sounds like a good salvage business for the future. Another application would be to repair satellites in orbit to extend their lives or upgrade their capabilities. Fuel depots could similarly extend satellite lives through fuel replenishment, but more importantly could allow satellites to be launched with bigger payloads and less fuel. Finally, having a fuel depot and/or a space tug could allow much greater flexibility in space segment utilization as satellites could more easily and expeditiously be relocated when desired to serve changing market needs.

LESSON #8 - The magnitude of the world's in-orbit assets is reaching a critical mass where developing capabilities such as robotic in-orbit servicing, space tugs and fuel depots may soon make economic sense and allow us to reduce the risks of zombie satellites once and for all.

By Hoyt Davidson
Near Earth LLC

Harbinger's LTE Network – Son of Clearwire?

...the FCC gave close attention to the license transfer application...with a clear intent...to foster competition in the sector ...

Recently, with much fanfare, the FCC approved Harbinger Capital's take private transaction for its Skyterra control affiliate. Given that Harbinger has substantial Mobile Satellite Service (MSS) participation through its non controlling interests in fellow MSS operators Inmarsat (29%) and Terrestrial (44%), the FCC gave close attention to the license transfer application from Harbinger with a clear intent (as seen below) of continuing to foster competition in the sector. Consequently, as part of its approval, the FCC attached conditions that compel Harbinger to, among other requirements, commit to the following:

- Complete deployment of Skyterra's two satellite next generation Mobile Satellite Service constellation, currently under construction at Boeing Satellite Systems.
- Complete deployment of an Ancillary Terrestrial Component of the network, notionally consisting of 36,000 base stations (i.e. towers).
- Achieve coverage milestones of 100 million POPs by year end 2012, 145 million POPs by year end 2013 and 260 million by year end 2015.
- Provide mobile data (no voice) service as a wholesale provider leasing capacity to existing and new carriers.
- Obtain FCC approval prior to providing spectrum (presumably via leasing or other arrangements) to the two largest carriers (i.e. AT&T and Verizon)
- Provide no more than 25% of its traffic to these carriers.

Not surprisingly, the large carriers have protested this arrangement, and its durability remains to be seen.

... [Harbinger's] proposed venture certainly looks a lot like Clearwire ...

For the purposes of our discussion, let's assume that these remain in place. The proposed venture certainly looks a lot like Clearwire. Consider that Clearwire operates its own 4G (in this case, WiMax technology based) network, and wholesales capacity to its strategic cable company investors and its parent Sprint. Like Clearwire, the Harbinger venture obtains a significant portion of its spectrum resources through payments to third parties – the BRS spectrum holders in the case of Clearwire (representing 59% of their total spectrum assets) and Inmarsat (representing a similar portion) in the case of Skyterra. These payments are significant – amounting to \$260 million per year in the case of Clearwire and \$115 million per year in the case of Skyterra. (Though since Harbinger is a significant owner in Inmarsat, this is sort of like taking money out of your left pocket and putting it into your right one). (For more on the Skyterra/Inmarsat deal, see our previous article from January 2008).

Harbinger's LTE Network – Son of Clearwire? (cont.)

[For Skyterra]
There is also a significant regulatory burden in that terminals must under current rules be satellite capable, which adds incremental cost...

There are important differences too – both in terms of spectrum assets, and in rollout stage. Looking at spectrum assets, let's compare the two. Clearwire boasts 44 billion MHz-POPs of spectrum, while the Harbinger venture is slated to go to market with 7.1 billion MHz-POPs, rising to 16.4 billion MHz-POPs assuming it gets access to Inmarsat's spectrum as planned. Clearwire's spectrum is in the 2.5 GHz band, while Harbinger's is in the 1.6 GHz band, which requires about a third fewer towers to obtain the same coverage, thus lowering Harbinger's opex and capex proportionately. For reference, Clearwire had spent about \$2.5 billion on network construction through the end of 2009, and expects to spend at least another \$3 billion this year, with more to come. However, Harbinger's spectrum comes with the requirement to maintain satellite coverage, at the cost of perhaps \$700 million in capex (for replacement satellites) every 15 years plus perhaps an incremental \$5 million in opex. Averaged out, this is about an additional \$50 million per year in costs. There is also a significant regulatory burden in that terminals (i.e. handsets, at least mostly) must under current rules be satellite capable, which adds incremental cost. Someone, most likely the carrier providing service with the network, is going to have to pay – repeatedly as terminals are periodically replaced. Finally, Harbinger has the benefit of 100% coverage (at least, outdoors) that provides a differentiated offering. All in, a pretty mixed bag.

Of course, the most important difference is that Clearwire's network **exists and is funded** (more correctly, part of it exists, and the rest is largely financed) and Harbinger's is on paper and not financed. So, Harbinger has significant operational and financial hurdles to bridge.

Given Clearwire's experience to date, it gives us some pause when we consider whether Harbinger is going to be able to achieve its stated goals ...

Given Clearwire's experience to date, it gives us some pause when we consider whether Harbinger is going to be able to achieve its stated goals. Consider that, to date, investors have provided Clearwire with nearly \$11 billion in debt and equity that is currently valued at just under \$8 billion, implying that Clearwire has destroyed about \$3 billion in value, not counting additional opportunity costs for the capital tied up. And this, with its network largely built out, marketing agreements in place with Sprint and its cable investors and its Clear brand launched, if not yet a household word.

To date then, Clearwire has not been a successful financial investment. This would appear to bode poorly for Harbinger's prospects to attract additional outside capital for its new venture. However, we note that this is an overly simplistic analysis. In particular, virtually all of Clearwire's major investors to date have been strategic investors looking for more than mere financial returns.

If Harbinger can attract strategic investors of its own, then this deal gets a lot more doable. Recent accounts in the Financial Times indicate that

Harbinger's LTE Network – Son of Clearwire? (cont.)

Given its spectrum issues, T-Mobile is a very logical investor...

Harbinger has been speaking to T-Mobile about being a strategic investor, and rumors are swirling about other potential investors as well. Given its spectrum issues (detailed more completely in our article from March 2010) T-Mobile is a very logical investor since the FCC clearly has heartburn associated with Verizon or AT&T getting their hands on this spectrum.

Certainly the recent addition of wireless heavyweight Sanjay Ahuja (former head of France Telecom's Orange wireless unit) helps their cause. However, given that Harbinger has committed itself to rollout milestones, it doesn't have the negotiating room that Clearwire had, and we would expect strategic investors to negotiate aggressively knowing that the clock is their ally.

By John Stone
Near Earth LLC

Guest Column - Net Neutrality on the Ropes: Broadband wars to replace local competition wars?

The court ruled ... in a major victory for Internet backbone providers ... and setback for net neutrality proponents, that the FCC exceeded its "ancillary authority" under the 1934 Communications Act

...the FCC will be asking courts right up to the Supreme Court to reclassify broadband service as highly regulated Telecommunications Service for the same reason: to preserve a free and open Internet ...

On March 16, the Federal Communications Commission issued its National Broadband Plan (available at www.broadband.gov), a compendium of lofty goals for extending broadband penetration throughout the United States and targeting specific industries and sectors, such as health care and education. Three weeks later, the Plan's future was thrown into doubt by the U.S. Court of Appeals for the D.C. Circuit's April 6 decision in *Comcast Corp. v. FCC*. The Court ruled, in a major victory for Internet backbone providers such as AT&T, Verizon and the leading Cable Operators, and setback for net neutrality proponents, including major content and application providers like Google/You Tube, Amazon, E-Bay and Facebook and the FCC itself, that the FCC exceeded its "ancillary authority" under the 1934 Communications Act in attempting to restrict Comcast's (the largest U.S. cable provider and prospective acquirer of NBC Universal) network management practices. The case arose when Comcast subscribers discovered that the Cable Operator was blocking their use of certain peer-to-peer networking applications, which allow sharing of files without passing through a central server.

On May 6, 2010, in reaction to the *Comcast* decision, the FCC announced its intention to reclassify broadband service as Communications Act Title II "Telecommunications Service," subject to common carrier non-discriminatory access rules. While the decision to reclassify was a victory for net neutrality proponents, it faces the hurdle of the U.S. Supreme Court's 2005 *Brand X* decision, which explicitly upheld the FCC's prior classification of broadband service as Communications Act Title I "Information Service," not subject to common carrier regulation. At the time, the FCC saw the substantially unregulated Information Service classification as the way to ensure a free and open Internet, and it sought and received the Supreme Court's approval of that interpretation. Now, five years later, the FCC will be asking courts right up to the Supreme Court to reclassify broadband service as highly regulated Telecommunications Service for the same reason: to preserve a free and open Internet. It does not figure to be an easy sell.

On May 6, 2010, concurrently with the reclassification announcement, Austin Schlick, the FCC General Counsel, published an analysis of the *Comcast v. FCC* dilemma in which he advocated basing the reclassification justification on Justice Scalia's dissent in *Brand X*, which was joined by Justices Ginsburg and Souter. In essence, Justice Scalia had disputed the *Brand X* majority's decision that (i) the FCC's classification of broadband service as Information Service was technologically and as a matter of statutory interpretation reasonable; and (ii) that the reasonable interpretation of an administrative agency in construing the statute it is charged with administering should be treated with deference by courts and not second-guessed, a doctrine known as

Guest Column - Net Neutrality on the Ropes (cont.)

the *Chevron* doctrine after the Supreme Court's decision in *Chevron USA v Natural Resources Defense Council*. Justice Scalia, by contrast, took the position that because the "telecommunications," or data transport, aspect of cable modem service could be technically and functionally unbundled from its "information," or data processing, aspect (a conclusion not conceded by the majority), the two aspects should be unbundled legally as well, with the data transport aspect treated as Telecommunications Service subject to Title II common carrier regulation and the data processing aspect treated as Information Service subject to Title I. Justice Scalia did not think much of the administrative agency deference argument, either.

The FCC is proposing what it terms "a third way" of dealing with *Comcast* and *Brand X*, between the Title I and Title II poles, effectively appropriating the "administrative agency deference" piece of the *Brand X* majority and the "functional separation should yield legal separation" piece of the *Brand X* dissent. Under the proposal, Title II would apply solely to the data transport aspect of broadband service, leaving the data processing aspects subject to Title I and whatever regulatory jurisdiction the "ancillary authority" power provides. The FCC would then use its "forbearance" power (the mandatory power to forbear from imposing regulation otherwise authorized by statute when forbearance is consistent with the public interest) to tailor the level of Title II regulation as narrowly as possible both to preserve a mostly unregulated Internet but also the net neutrality policy goal. The FCC enumerates six core Title II provisions that it would seek to apply as part of that tailoring, and points out the successful history of similarly tailored Title II forbearance in the case of commercial wireless telecommunications services. In particular, as with wireless, it proposes to forbear from Title II rate regulation.

As we said at the beginning, this will be a tough sell. The argument to separate the "telecommunications/data transport" and "information/data processing" components of cable modem service (as well as DSL service) might have been persuasive had the FCC made them at the time of *Brand X*. Instead, the Commission took the position that the components were inseparable. The Supreme Court majority in *Brand X* bought into that view, and held that because there was no Title II authority over the integrated service, there was none over any of its components.

But there is a deeper problem in the proposed third way. Also critically missing from the FCC's aspirational analysis is that the disparate treatment of Telecommunications Service and Information Service and deemed inseparability of services with aspects of both in the legislative and regulatory structure is not a recent development, which the FCC now regrets, but a dichotomy long pre-dating the mass market Internet. Beginning in 1966, the FCC examined the convergence of telecommunications and computer technology in a series of administrative

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... As we said at the beginning, this will be a tough sell....

Guest Column - Net Neutrality on the Ropes (cont.)

... the fish-or fowl determination had to be made; no “unbundling” was allowed ...

proceedings called the “Computer Inquiries.” In the First Computer Inquiry decision, in 1971, the FCC distinguished between communications services in which information was transmitted unaltered, as with simple voice telephony, and data processing services, in which information was stored, retrieved, or altered before, after, or during transmission. Communications services were subject to Title II common carrier regulation, while data processing services were not. Common carriers were required to provide “maximum separation” between ordinary communications services and data processing services in order to prevent them from using revenues from their regulated but market-dominant common carrier activities to subsidize and unfairly compete in data processing activities. For “hybrid” services that combined communications and data-processing functions, the Commission decreed a case-by-case analysis to classify the service as regulated or unregulated based on whether it was “primarily” or “essentially” data processing or communications. In other words, the fish-or fowl determination had to be made; no “unbundling” was allowed.

This formula was updated and the case-by-case approach to “hybrid” services was eliminated in the Second Computer Inquiry in 1980. The FCC established a new, ostensibly “bright line” distinction between a regulated “basic” services, in which the transmitted information was not processed or altered in transmission, and a unregulated “enhanced” services, in which processing altered the transmission.

The 1996 Telecommunications Act that amended the Communications Act, preserved the bright line distinction drawn by the FCC, separately defining “Telecommunications Service,” which corresponds with “basic services,” and “Information Service,” which corresponds with “enhanced service.” The former is subject to common carrier regulation; the latter is not. In other words, the *Brand X* majority, in treating cable modem service as both indivisible by nature and as unregulated Information Service, was upholding not merely a recent FCC rulemaking, but a consistent line of administrative decisions of over forty years’ pedigree.

... A period of prolonged litigation over the regulatory territory may be unfolding, reminiscent of the post-1996 Telecommunications Act “local competition” wars...

A period of prolonged litigation over the regulatory territory may be unfolding, reminiscent of the post-1996 Telecommunications Act “local competition” wars, with the backbone Internet providers, like AT&T, Verizon, and leading Cable Operators cast in the [incumbent] ILEC role, and content and application providers and bandwidth users like Google/You Tube, Amazon, EBay and Face Book cast in the [competitive] CLEC role. Needless to say, facing the FCC and the other net neutrality proponents will be all the arguments and evidence they adduced in support of the opposite position in *Brand X*, the history of the Computer Inquiries and the near certainty that, because of the *Brand X* precedent, the case cannot be won without going back to the Supreme Court.

Guest Column - Net Neutrality on the Ropes (cont.)

To avoid that prospect, rather than looking to Justice Scalia's *Brand X* dissent, the FCC should rely upon Justice Thomas' majority analysis, conducted under the *Chevron* rules. There, Justice Thomas stated that: "[A]gency inconsistency is not a basis for declining to analyze the agency's interpretation under the *Chevron* framework. Unexplained inconsistency is, at most, a reason for holding an interpretation to be an arbitrary and capricious change from agency practice....For if the agency adequately explains the reasons for a reversal of policy, 'change is not invalidating, since the whole point of *Chevron* is to leave the discretion provided by the ambiguities of a statute with the implementing agency.'" Net neutrality proponents would be better served by the FCC accepting the Title I framework, going back to court and taking the position that the still-emerging ramifications of its prior Information Service classification of broadband were not clear five years ago, and that deference to its assessment of changing circumstances should be respected in upholding its Title I ancillary authority for carefully tailored broadband regulation. Net neutrality opponents would probably also prefer the earlier closure that would bring.

... Net neutrality is a critical policy value; it has to be achieved and preserved. The right outcome here is a moderate level of carrier-like regulation that prevents discriminatory access and blocking and preserves low barriers to entry, while avoiding rate regulation. ...

The explosive growth in the last fifteen years of the Internet as a revolutionary medium of information dissemination, information storage and communication is due to the low barriers to entry content and applications providers have enjoyed coupled with the reasonable incentives to invest in building out broadband networks that backbone providers have had. Net neutrality is a critical policy value; it has to be achieved and preserved. The right outcome here is a moderate level of carrier-like regulation that prevents discriminatory access and blocking and preserves low barriers to entry, while avoiding rate regulation. Non-discriminatory fees do not mean no fees. We can test incentives to invest in broadband networks on an ongoing basis, and the disincentivizing effects of net neutrality may be overstated, as they were when the "fiber glut" of ten years ago was developing.

Of course, what is really needed is legislative action to amend the 1934 Communications Act, as amended by the 1996 Telecommunications Act, to grant the FCC reasonable and limited authority to regulate the network management practices of broadband providers where necessary in the broader public interest. If Congress is ambitious, and a long view is taken, it might even be the occasion to impose the cross-platform- and technology-neutral parity that our patchwork and obsolete legislative and regulatory framework so badly needs and which this writer has for so long urged.

By Owen D. Kurtin
The Vinland Group LLC

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NEAR EARTH ANALYSIS: MARKET COMPARABLES

Public Market Valuation Analysis of Selected Companies in the NEAR EARTH MEDIA INDEX

(\$ in millions, except per share data)

		Stock Price:		Enterprise Value as a Multiple of:			Price as a Multiple of:		
	5/12/10	Market Value of Equity	Enterprise Value (a)	LTM Sales	LTM EBITDA	LTM EBIT	LTM EPS	Trailing EPS (b)	Forward EPS (b)
Satellite Broadcast (DBS and DARS)									
BSY.L	British Sky Broadcasting (f)	£ 6.01	\$15,620.66	\$18,288.22	2.2x	11.6x	14.9x	25.0x	23.2x
DISH	Dish Network Corp	\$ 22.37	\$9,994.92	\$14,352.63	1.2x	5.3x	8.2x	11.6x	10.2x
DTV	DirecTV Group Inc.	\$ 38.15	\$36,504.21	\$42,309.21	2.0x	7.9x	15.6x	29.6x	13.0x
SIRI	Sirius XM Radio	\$ 1.07	\$4,128.26	\$7,239.18	3.0x	15.9x	n/m	n/m	n/m
	Mean			2.1x	10.2x	12.9x	22.1x	19.3x	15.5x
Cable Television									
CMCSA	Comcast Corporation	\$ 18.18	\$51,587.02	\$80,218.02	2.2x	5.8x	11.1x	14.1x	13.0x
MCCC	Mediacom Communications Corp.	\$ 5.89	\$398.28	\$3,682.36	2.5x	6.9x	12.3x	0.5x	6.3x
TWC	Time Warner Cable Inc.	\$ 51.16	\$18,033.90	\$39,620.90	2.2x	6.1x	11.7x	15.9x	12.2x
CVC	Cablevision Systems Corp	\$ 25.15	\$7,595.80	\$18,503.81	2.4x	7.4x	13.0x	23.1x	13.9x
	Mean			2.3x	6.6x	12.0x	13.4x	13.4x	11.4x
Television									
TVL	LIN TV Corp.	\$ 7.60	\$402.04	\$1,073.88	3.2x	9.6x	19.1x	n/m	8.8x
SBGI	Sinclair Broadcast Group	\$ 7.31	\$584.07	\$1,843.34	2.8x	6.8x	13.8x	n/m	9.4x
FSCI	Fisher Communications Inc	\$ 17.93	\$157.07	\$235.14	1.8x	13.5x	n/m	n/m	n/m
	Mean			2.6x	10.0x	16.5x	n/m	n/m	12.8x
Radio									
CMLS	Cumulus Media Inc.	\$ 4.85	\$201.91	\$825.16	3.2x	11.8x	14.2x	n/m	n/a
ETM	Entercom Communications	\$ 13.32	\$495.64	\$1,233.25	3.3x	13.1x	15.6x	13.7x	9.8x
	Mean			3.2x	12.5x	14.9x	n/m	10.7x	9.8x
NewsPrint									
MNI	The McClatchy Company	\$ 5.05	\$424.55	\$2,352.96	1.6x	6.6x	11.0x	6.3x	8.4x
NYT	New York Times	\$ 9.63	\$1,391.63	\$2,127.49	0.9x	6.6x	11.4x	26.7x	13.6x
WPO	Washington Post	\$ 514.68	\$4,771.08	\$4,315.09	0.9x	7.8x	19.0x	n/m	25.0x
	Mean			1.1x	7.0x	13.8x	n/m	15.9x	13.6x
New Media									
MSFT	Microsoft Corporation	\$ 29.44	\$259,395.84	\$222,315.84	3.8x	9.2x	10.2x	15.9x	12.7x
AAPL	Apple Inc.	\$ 262.09	\$237,526.93	\$197,706.93	4.9x	19.8x	21.3x	34.8x	17.1x
YHOO	Yahoo! Inc.	\$ 16.47	\$23,158.14	\$19,892.37	3.1x	15.9x	38.7x	34.3x	21.4x
GOOG	Google Inc.	\$ 505.39	\$160,345.09	\$135,860.31	5.5x	13.1x	15.2x	22.7x	15.8x
IACI	Interactive Corporation	\$ 22.29	\$2,941.17	\$1,331.60	1.0x	16.3x	n/m	n/m	19.7x
ERTS	Electronic Arts Inc.	\$ 17.71	\$5,755.75	\$3,743.75	0.9x	n/m	n/m	n/m	20.6x
	Mean			3.2x	14.9x	21.4x	26.9x	22.3x	17.9x
Satellite Imagery									
GEOY	GeoEye	\$ 31.13	\$579.02	\$751.24	2.8x	5.8x	10.3x	11.7x	18.8x
DGI	DigitalGlobe Inc.	\$ 28.75	\$1,296.05	\$1,553.85	5.5x	9.6x	17.7x	24.4x	22.1x
	Mean			4.1x	7.7x	14.0x	18.0x	20.2x	20.4x

MEDIA SERVICES INDEX

High	5.5x	19.8x	38.7x	34.8x	29.5x	23.2x
Mean	2.3x	8.9x	13.2x	17.2x	17.1x	13.1x
Low	0.9x	5.3x	8.2x	0.5x	7.8x	6.3x

(b) EPS estimates from Thompson First Call. Near Earth does not estimate EPS and does not condone or validate these estimates.

n/m Not Meaningful.

(c) Converted to US \$ from Euro at an exchange rate of 1.2629 US \$ per Euro.

n/a Not Available

(d) Converted to US \$ from C\$ at an exchange rate of 0.9805 US \$ per C\$.

(f) Converted to US \$ from British Pound at an exchange rate of 1.4828 US \$ per British Pound.

Member of NEAR EARTH SATELLITE INDEX

NEAR EARTH ANALYSIS: MARKET COMPARABLES

Public Market Valuation Analysis of Selected Companies in the NEAR EARTH TELECOM INDEX

		Stock Price:		Enterprise Value as a Multiple of:			Price as a Multiple of:				
		5/12/10	Market Value of Equity	Enterprise Value (a)	LTM Sales	LTM EBITDA	LTM EBIT	LTM EPS	Trailing EPS (b)	Forward EPS (b)	
Fixed Satellite Services (FSS)											
ETL.PA	Eutelsat Communications (c)	€	28.56	\$7,922.07	\$11,134.33	8.7x	12.1x	18.8x	24.9x	32.8x	30.1x
SESG.PA	SES Global S.A. (c)	€	17.45	\$8,805.83	\$13,314.13	6.2x	8.9x	15.1x	15.1x	19.3x	18.1x
	Mean					7.4x	10.5x	16.9x	20.0x	26.1x	24.1x
Mobile Satellite Services (MSS)											
ISAT.L	Inmarsat (f)	£	7.89	\$5,376.41	\$6,662.91	6.4x	11.2x	18.4x	34.0x	23.8x	20.3x
IRDM	Iridium Communications Inc.	\$	8.31	\$583.78	\$438.12	1.3x	4.8x	6.1x	13.3x	10.0x	7.6x
ORBC	ORBCOMM Inc.	\$	2.17	\$92.14	\$3.80	0.1x	1.3x	n/m	n/m	n/m	n/m
GSAT	Globalstar Inc.	\$	1.75	\$509.48	\$907.41	14.1x	n/m	n/m	n/m	n/a	n/a
	Mean					5.5x	5.8x	12.2x	23.7x	16.9x	13.9x
Satellite Ground Segment											
CMTL	Comtech Telecommunications	\$	31.87	\$900.96	\$586.80	1.1x	7.2x	8.3x	19.0x	16.7x	14.6x
GCOM	Globecom Systems Inc.	\$	8.54	\$178.23	\$128.48	0.7x	12.0x	29.7x	n/m	25.9x	19.0x
GILT	Gilat Satellite Networks	\$	5.76	\$231.96	\$107.83	0.5x	6.8x	n/m	n/m	n/m	n/a
HUGH	Hughes Communications, Inc.	\$	26.47	\$572.55	\$994.85	1.0x	6.0x	15.8x	n/m	34.4x	13.7x
ISYS	Integral Systems Inc.	\$	8.55	\$148.43	\$140.12	0.9x	25.9x	n/m	n/m	22.5x	13.2x
VSAT	ViaSat Inc.	\$	34.24	\$1,248.73	\$1,593.29	2.5x	23.3x	n/m	38.1x	22.1x	18.1x
	Mean					1.1x	13.5x	17.9x	28.5x	24.3x	15.7x
Satellite Space Segment											
ORB	Orbital Sciences	\$	18.07	\$1,027.82	\$775.10	0.7x	10.8x	14.8x	26.6x	23.2x	14.9x
CDV.TO	COM DEV International (d)	\$	2.80	\$208.92	\$209.33	0.9x	8.1x	13.9x	16.1x	n/a	n/a
MDA.TO	McDonald Dettwiler and Associates (d)	\$	44.40	\$1,800.86	\$2,113.05	2.2x	12.9x	17.1x	17.0x	n/a	n/a
OHB.DE	OHB Technologies (c)	€	15.21	\$334.23	\$307.45	0.8x	7.8x	11.7x	17.8x	28.2x	22.3x
	Mean					1.1x	9.9x	14.4x	19.4x	25.7x	18.6x
Towers											
AMT	American Tower	\$	41.72	\$16,512.78	\$20,470.33	11.9x	18.9x	29.9x	n/m	n/m	n/m
CCI	Crown Castle	\$	37.76	\$11,053.48	\$17,181.97	10.2x	17.5x	37.9x	n/m	n/m	n/m
SBAC	SBA Communications	\$	34.11	\$3,993.60	\$6,315.98	11.4x	19.6x	n/m	n/m	n/m	n/m
	Mean					11.1x	18.7x	33.9x	n/m	n/m	n/m
General Telecom											
S	Sprint Nextel Corporation	\$	4.15	\$11,935.40	\$29,072.40	0.9x	4.5x	n/m	n/m	n/m	n/m
T	AT&T	\$	25.82	\$152,387.83	\$221,073.83	1.8x	5.4x	10.3x	12.2x	11.4x	10.6x
VZ	Verizon Communications, Inc.	\$	28.70	\$81,383.73	\$183,901.73	1.7x	5.1x	9.4x	9.5x	12.5x	11.7x
	Mean					1.5x	5.0x	9.9x	10.8x	12.0x	11.1x
TELECOM SERVICES INDEX (excludes Towers stocks)											
	High					14.1x	25.9x	29.7x	38.1x	34.4x	30.1x
	Mean					2.8x	10.2x	12.6x	20.3x	25.7x	16.5x
	Low					0.1x	1.3x	6.1x	9.5x	10.0x	7.6x

(b) EPS estimates from Thompson First Call. Near Earth does not estimate EPS and does not condone or validate these estimates.

(c) Converted to US \$ from Euro at an exchange rate of 1.2629 US \$ per Euro.

(d) Converted to US \$ from C\$ at an exchange rate of 0.9805 US \$ per C\$.

(f) Converted to US \$ from British Pound at an exchange rate of 1.4828 US \$ per British Pound.

n/m Not Meaningful.

n/a Not Available

Member of NEAR EARTH SATELLITE INDEX

NEAR EARTH ANALYSIS: M&A TRANSACTIONS

Selected Satellite, Telecom & Media Transactions

(US\$ in millions)

Date Announced	Acquiror	Target	Equity Value (a)	Transaction Value (b)	Transaction Value/		
					LTM Sales	LTM EBITDA	
Satellite Operators							
08/29/05	Intelsat Ltd.	PanAmSat Holding Corporation	3,065.0	6,271.1	7.5x	9.7x	
12/14/05	SES Global	New Skies Satellites NV	760.0	1,160.0	5.0x	8.0x	
12/05/06	Abertis Telecom	EutelSat (32% share)	1,000.0	1,838.0	7.3x	9.7x	
12/18/06	Telesat (new)	Telesat/Skynet Combined	3,491.0	3,990.0	7.1x	13.4x	
06/19/07	BC Partners	Intelsat	5,000.0	16,400.0	7.7x	11.3x	
08/02/07	Abertis Telecom	Hispasat (28.4% share)	199.0	199.0	5.8x	7.9x	
09/23/09	GHL Acquisition Corp	Iridium Satellite LLC	500.0	517.3	1.6x	5.6x	
10/01/09	ViaSat, Inc	WildBlue Coimunications, Inc.	568.0	500.0	2.4x	6.6x	
				Mean	5.5x	9.0x	
Ground Equipment & Systems Integrators							
08/03/06	Thrane & Thrane	Nera's Mobile Satellite Communications	89.6	89.6	1.1x	n/d	
03/19/07	CIP Canada Investment Inc.	Stratos Global Corporation	293.3	621.5	1.2x	2.9x	
05/12/08	Comtech	Radyne	201.9	223.6	1.5x	16.0x	
07/10/08	Nokia	Navteq	7,719.0	8,100.0	8.8x	29.5x	
05/09/09	Rockwell Collins	Datapath	130.0	130.0	0.5x	n/d	
06/01/09	Globecomm Systems	Telaurus Communications LLC	7.6	7.6	0.6x	n/d	
11/23/09	Inmarsat plc	Segovia, Inc.	110.0	110.0	1.6x	n/d	
03/08/10	Globecomm Systems Inc.	Carrier to Carrier Telecom BV	15.0	15.0	0.8x	n/d	
				Mean	2.3x	16.1x	
Aerospace and Defense							
04/23/07	Kratos	SYS Technologies	49.3	49.3	0.6x	n/m	
05/03/07	Globecomm	GlobalSat	18.4	18.4	0.9x	n/d	
07/31/07	LMI Aerospace, Inc.	D3 Technologies, Inc.	65.0	65.0	1.0x	7.2x	
11/29/07	Finmeccanica SPA	VEGA Group PLC	59.2	56.2	0.9x	9.6x	
05/12/08	Finmeccanica SPA	DRS Technologies Inc	3,358.0	4,930.0	1.4x	11.0x	
05/13/08	Cobham plc	M/A-COM	425.0	425.0	0.9x	6.8x	
06/04/08	Cobham plc	Sparta Inc	416.0	416.0	1.4x	12.1x	
12/16/08	Sierra Nevada Corporation	SpaceDev, Inc.	31.7	26.6	0.7x	23.3x	
03/05/10	Integral Systems	CVG-Avtec	34.7	34.7	1.0x	n/d	
03/05/10	Orbital Sciences Corp.	GD Advanced Information Systems	55.0	55.0	1.1x	n/d	
				Mean	1.0x	11.7x	
Video Distribution							
11/18/05	Cisco	Scientific Atlanta	6,900.0	5,300.0	2.7x	13.2x	
02/08/06	Tandberg Television	Skystream	80.0	80.0	2.6x	n/d	
12/21/06	Motorola	Tut Systems	39.0	39.0	1.0x	n/d	
04/23/07	Motorola	Terayon Communication Systems Inc.	139.7	127.2	1.9x	n/m	
12/07/07	Macrovision Corp	Gemstar-TV Guide Intl Inc	2,842.1	2,325.1	3.7x	21.9x	
03/12/09	Harmonic	Scopus Video Networks	78.3	47.6	0.8x	n/m	
				Mean	2.1x	17.6x	
Towers							
05/04/05	American Tower	Spectrasite	3,100.0	3,800.0	10.2x	17.0x	
03/17/06	Crown Castle	Trintel Communications	145.0	145.0	10.1x	n/d	
03/17/06	SBA Communications Corp	AAT Communications Corp	1,002.0	1,002.0	12.0x	17.9x	
05/08/06	Crown Castle	Mountain Union Telecom LLC	309.0	309.0	11.9x	n/d	
10/06/06	Crown Castle	Global Signal	4,000.0	5,800.0	12.1x	26.6x	
07/21/08	SBA Communications Corp	Optasite Towers	253.2	428.2	14.8x	n/m	
				Mean	11.8x	20.5x	
General Telecom (Wireless)							
01/05/05	Alltel	Western Wireless	4,300.0	6,181.0	3.2x	10.7x	
07/01/05	Sprint Nextel Corporation	US Unwired, Inc.	1,000.0	1,266.0	2.9x	13.2x	
03/06/06	AT&T (new)	Bell South	67,000.0	89,000.0	4.3x	10.7x	
08/07/08	Verizon Wireless	Rural Cellular Corp	728.0	2,757.0	4.1x	9.7x	
01/10/09	Verizon Wireless	Alltel	5,900.0	28,100.0	2.9x	8.3x	
12/24/09	Sprint Nextel Corp.	Virgin Mobile USA	348.0	509.0	0.4x	4.4x	
				Mean	3.5x	11.5x	
Television							
03/31/05	Lin TV Corp.	WNDY-TV, WWHO-TV	\$85.0	\$85.0	4.3x	12.9x	
05/10/05	Various Acquirors (d)	Emmis Comm TV Portfolio	1,350.0	1,350.0	5.2x	14.6x	
06/30/05	Univision Communications	WLII (2 TV Stations in Puerto Rico)	190.0	190.0	4.0x	16.7x	
01/18/07	Citadel Investment Group LLC	ION Media Networks Inc	98.8	1,654.3	7.1x	16.9x	
03/29/07	Umbrella Holdings LLC	Univision Communications	12,300.0	13,700.0	6.3x	18.1x	
				Mean	5.4x	15.8x	
Radio							
07/29/08	Sirius Satellite Radio Inc.	XM Satellite Radio Holdings Inc.	2,301.7	3,957.7	3.4x	n/m	
07/30/08	Bain Capital	Clear Channel	17,923.8	23,724.1	3.5x	10.8x	
05/29/09	Cox Enterprises, Inc	Cox Radio	381.5	704.3	1.8x	6.2x	
				Mean	2.9x	8.5x	

(a) When Equity Value was not disclosed, Transaction Value was used

(b) Calculated as Value of Equity plus interest bearing liabilities and preferred stock, less cash & equivalents

n/d Not Disclosed

(d) Transaction includes the divestiture of Emmis' TV portfolio to: Lin TV (\$260M), Journal Comm (\$235M), Gray (\$186M), Blackstone (\$259M)

n/m Not Meaningful

It also includes estimated transaction value of \$410M for the final sale of 3 TV stations.

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