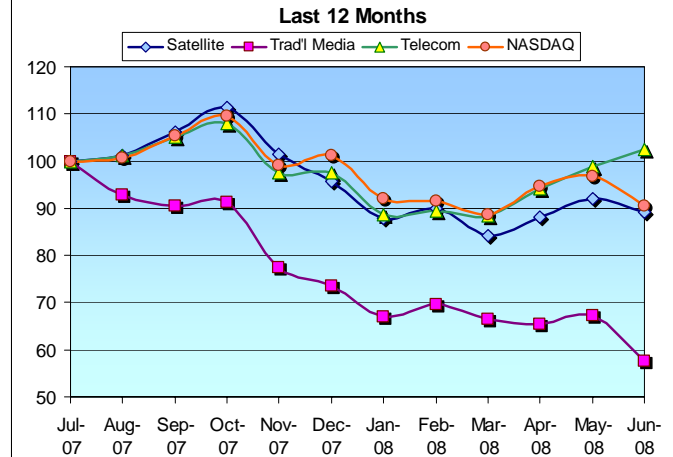


# FROM THE GROUND UP

**June 2008**
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**THE WAY WE SEE IT...**
**Satellite:**

On June 19<sup>th</sup>, **Orbcomm** successfully launched six new satellites, augmenting their existing constellation and extending its lifetime. Users should see faster message transfers and **Globalstar's** simplex data service should experience additional competition. In the "are we there yet" category, the long delayed **XM/Sirius** merger got a boost when FCC Chairman Kevin Martin gave it his stamp of approval, subject to appropriate conditions. DOJ approval is already in the bag, but this deal is still being contested.

**Media:**

While **XM/Sirius** await final approval (see note above), competition seems to be heating up in the digital music world, as **Rhapsody** just announced a new \$0.99 per-track download service that combines **iTunes** pricing and **Amazon** DRM-free characteristics. This new service will augment Rhapsody's existing subscription plan, and will also be offered in conjunction with a **Verizon Wireless** download capability via its VCAST product. Previously, Rhapsody competitor **Napster** had also announced a DRM-free offering, and **eMusic** has been DRM-free (and far cheaper than iTunes) for quite some time. It seems like a foregone conclusion that DRM-free product is now a lasting reality in the digital music sector... so, will it be just a matter of time before iTunes embraces the trend more vigorously?

**Telecom:**

**Virgin Mobile** scooped up data-centric MVNO **Helio** for \$39 million, a fraction of the \$100 million plus invested to date by its strategic and venture investors. Of course, Virgin has hardly been a money maker for its IPO investors either. Someday, *someone* will make money with a MVNO, but apparently not today. In the meantime, The Philadelphia Experiment lives on! Literally in the nick of time, an investor group led by **Tropos Networks** Chairman David Hanna scooped up the \$17 million **Wireless Philadelphia** municipal WiFi network just as **Earthlink** got ready to pull the plug. It remains to be seen whether these investors will be able to turn around the operation, which has been plagued by poor service and low subscriber growth.

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### The Hollow Men, or, the mouse that clicks

We investigate the downside of simplicity, as manifest in superficiality, imprecision, and unstable trends that are ultimately without substance.

Click. We are the Internet generation, the approximate generation, coming, going, impatient, changing, with the click of a mouse, moving on, alas... In last month's article in this column it was argued that, in the face of escalating complexities surrounding both of capital markets and the broader media sector, simplicity in itself becomes a value. We brought our thesis to conclusion with an overview of Twitter and the funding round that the social micro-communication network was then in the process of securing. Now that the Twitter deal has closed, we take the original idea of simplicity one step further this month, by way of a sort of sequel, and investigate the downside of simplicity (its immediate value notwithstanding), as manifest in superficiality, imprecision, and unstable trends that are ultimately without substance. The Internet sector contains perhaps the best sampling of such phenomena, and within the Internet sector social networks like Twitter may be the clearest illustration of simplicity's possible perils. Here then are a few notes about flightiness, and some contrasting remarks about the more substantial and potentially lasting value of proprietary, versatile, facilitating, ubiquitous technologies and applications, that can enhance user experience and establish loyalty, even in this environment.

... contrasting this with remarks about the more substantial and potentially lasting value of proprietary, versatile, facilitating, ubiquitous technologies and applications, that can enhance user experience and establish loyalty...

Superficiality: According to published reports, the venture capital deal that has captured the imaginations of bloggers and analysts all through the web has finally closed at a healthy valuation (approximately \$100 million according to market rumors). That the underlying company generates no revenue is in no way noteworthy, given even grander valuations attached to Twitter's social web predecessors, including YouTube and MySpace, both of which were similarly light of top line at their respective times of transaction. What is much more interesting in the current case of Twitter is that the platform often does not work, literally. Yes, the service is popular, (when the site is up), but the conversational social network has been, regularly enough, out of commission. Beyond its popularity, there is really not much that recommends Twitter's offering – a communication network driven by snippets of dialogue – and like other social networks, Twitter's popularity is (circularly enough) what makes it popular. One therefore wonders, given the widely reported problems experienced by Twitter's user base, whether the value attributed to this emerging platform is sustainable. There are competitors around, (notably Friendfeed and Pownce, and a few others), and this is the boundless Internet after all. Click.

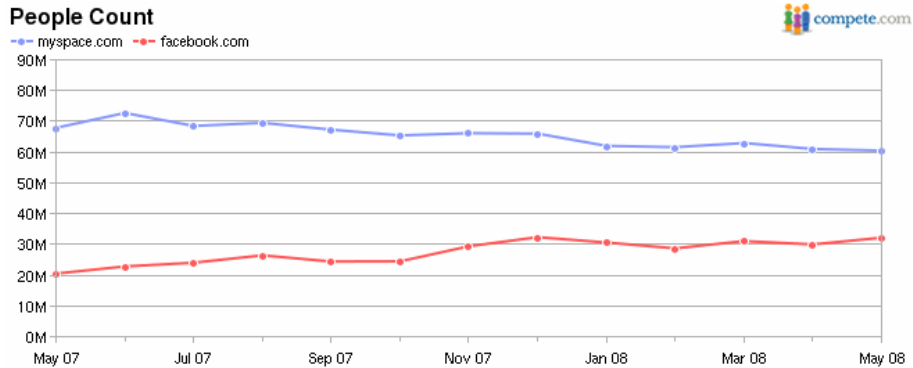
If Twitter's value proposition is based on pure popularity, with little technical differentiation or substance to speak of, one might look to the experience of social network predecessors to see how stable or unstable such value propositions can be. Let's look.

# From the Deal Side (cont.)

Unstable trends: As the abundance of popular Internet services are offered free of charge and without customer commitments, the transferability of audience from one popular platform to another is often driven by (for lack of a better term) “buzz.” And this is particularly true in the absence of superior features or differentiating technical factors.

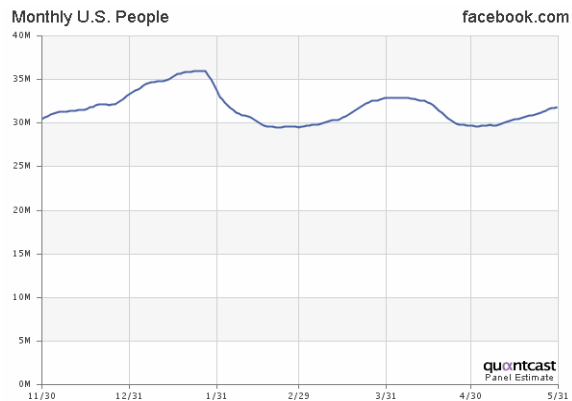
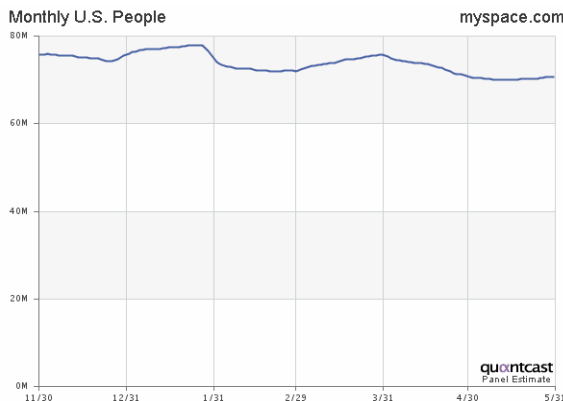
At the time of the MySpace acquisition by NewsCorp in 2005, the former was by far the leading social network on the web. With some 27 million members (that in a few months almost doubled), the closest competitor then was Facebook, which was a distant second with a mere 11 million. Well then, the buzz has changed. See below:

Considering that the estimated size of Twitter's current audience (with all the buzz that generated it) is still less than 2 million ... a loss of 10 million “uniques” by one platform alone is in both absolute and relative terms not a swing to ignore.



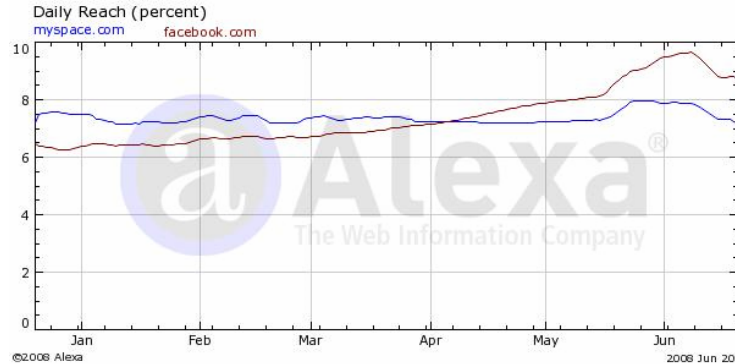
Noteworthy in this chart is not only the steady rise of Facebook in the past twelve months, but the directly corresponding diminution of MySpace. A transfer of 10 million unique monthly visitors seems to have occurred, and the trend does not appear to be slowing. Considering that the estimated size of Twitter's current audience (with all the buzz that generated it) is still less than 2 million according to the same audience measurement service, a loss of 10 million “uniques” by one platform alone, over a 1-year period, is in both absolute and relative terms not a swing to ignore. What's worse, this has occurred for no substantial reason... and no downtime issues. Click.

Imprecision: As if it were even possible to accurately measure web traffic... The previous chart was sourced from one particular web audience-measurement platform. Here is what another commonly used resource tells us:

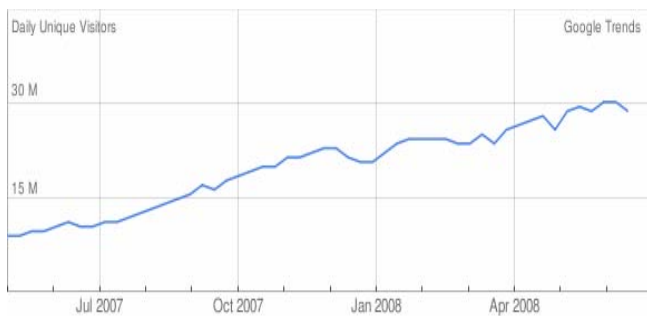


## From the Deal Side (cont.)

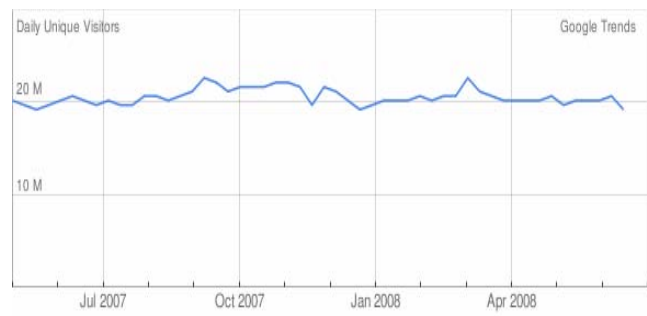
And another:



And the latest, Google's new Trends for Websites service:



Facebook



MySpace

The particular tools and mechanisms used by each of these services to estimate web audience are different but equally complex, and the specifics extend beyond the scope of this article. Our purpose for now is merely to illustrate the inaccuracy and inconsistency of data:

These are not trivial differences, and not the sort of substance to plan around, to confidently base a budget on, to defend CPM rates, or to estimate enterprise value.

- As a market share proxy, Alexa shows Facebook to have actually surpassed MySpace some three months ago.
- In absolute terms, Google also shows Facebook to have surpassed MySpace, though maybe in the past six months, or possibly longer.
- Quantcast figures coincide more closely with Compete.com, and figure MySpace at still twice the size of Facebook.
- Google, measuring daily rather than monthly traffic, shows MySpace to be less than half as popular as estimated by Quantcast or Compete.com, while Facebook's daily traffic in Google's estimate is roughly similar to its monthly traffic according to the other two services.

These are not trivial differences, and not the sort of substance to plan around, to confidently base a budget on, to defend CPM rates, or to estimate enterprise value. Ultimately, there is no substitute for internal traffic logs, but the reality of accessing these is inefficient, unproductive, if not prohibited. And thus we settle for approximation... and, what is worse,

## ***From the Deal Side (cont.)***

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based on widely disparate figures. So... what actually is Twitter's audience? Pause...

Click.

We see a growing number of exciting new technologies and applications, designed to work in conjunction with existing platforms, vastly improving the user experience on any of these, without being limited to any one.

The lasting value: Amid all this vagueness and continuous change in a still evolving industry, there are nonetheless certain constants that seem to remain. As trends come and go and as popularity builds on itself and evaporates, there are underlying platforms, technologies, and applications that can be relied upon to last. For this reason, perhaps, Google with its superior search technology has succeeded where others have fallen by the wayside (or are about to). For this reason again, even Facebook seems to have recognized the importance of continuous evolution and improvement, and has begun, at least now in its more mature state, to establish a technical edge by opening its platform to outside developers for the creation of unique Facebook applications. By the same token, companies such as Meebo are creating unique technical capabilities that do not rely on the popularity of any one platform but offer the ability to utilize any or all, (in Meebo's case, instant messaging). We also see a growing number of exciting new technologies and applications, designed to work in conjunction with existing platforms, vastly improving the user experience on any of these, without being limited to any one. (In the web advertising field we have been impressed by companies such as Linkstorm ([www.linkstorms.com](http://www.linkstorms.com)), and in the micro-communications segment by PodGlo Enterprises ([www.podglo.com](http://www.podglo.com)).<sup>1</sup> As buzz happens and the dust on the social web settles, these innovative and versatile technologies demonstrate that, happily, substance still does exist.

By Dan Ramsden  
Near Earth LLC

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<sup>1</sup> See important disclaimer on page 18 at (\*).

# The Current Spot Beam

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## Take my spectrum, please!

The FCC recently announced that it was planning on auctioning new spectrum (the AWS 3 block) for broadband service, but with a catch: you have to give it away. At least some of it.

As part of their ongoing efforts to “bridge the digital divide”, the commission devised the scheme of allowing carriers access to 25 MHz of new nationwide spectrum, provided they provide near universal coverage within ten years, have open network access and provide two way “broadband” service of 768 kbps *for free*. Oh, and by the way they also have to keep it clean, too (i.e. free of “obscene” material).

Which raises the interesting point: Is anybody going to want this stuff?

To help answer this, first let’s consider what this spectrum would be worth without these restrictions. For that, we can look at the recent AWS spectrum results, which imply a valuation of roughly \$3 billion after allowing for a 25% national license discount. However, the proposed service rules also require operators to donate up to 25% of network capacity for the free service. While at first blush this would appear to devalue the spectrum another 25%, the actual effect is probably much worse – because this effectively forces the operators to compete with themselves!! Over time, this may become somewhat mitigated as applications increasingly require additional speed, but with only ~19MHz available to generate revenue, this network will also suffer from a limited capacity to serve high capacity users – which are the only ones it can charge for service. (The rules are unclear whether techniques can be used to maintain QoS [which allows VoIP and streaming video applications] for paying subscribers while denying it to “freeloaders” – a technique that could help mitigate this issue).

So let’s assume a potential bidder looks at all the hair on this spectrum and decides it’s worth \$2 billion with these limitations. Are they going to bid this much? Not so fast, I would counter. We haven’t talked about the deployment requirements yet. While covering the most urban 50% of the U.S. population is probably reasonably cost effective, doing it in four years is a pretty tall order. Consider the case of Clearwire, which is budgeting about \$20 in capex per POP. If we extrapolate this to our prospective new entrant, we’re talking about over \$6 billion in capex, which starts to make the potential savings from a lower auction clearing price start to look somewhat piddling.

It gets even better than this, however. Clearwire has over six times as much spectrum (120 MHz)! With that much extra spectrum, they should be in a position to offer much faster service than the spectrum winner, leaving the “winner” in the unenviable position of having to go up against

The FCC recently announced that it was planning on auctioning new spectrum (the AWS 3 block) for broadband service, but with a catch: you have to give it away...Which raises the interesting point: Is anybody going to want this stuff?

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## The Current Spot Beam

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Clearwire on the high end, and against themselves (or, more correctly, their free offering) on the low end. And, there's also the 4G offerings from Verizon and AT&T, lest we forget them.

And, besides, while we're tossing around terms like "free broadband" let's not forget that there is 125 MHz of *free* spectrum available in the unlicensed band for operators to offer service that comes without the service giveaway requirements we've discussed.

So what happens if the FCC decides to hold this auction? From my perspective, bids from prospective new entrants are likely to be pretty small – largely reflecting what I expect will be scant willingness on the part of the capital markets to fund this adventure. The funding prospects for any new entrant are likely to be further dimmed by the high profile failures of Earthlink's and Metrofi's hybrid free/paid service offerings.

In the hands of a larger operator (think VZ or T), the spectrum is likely to be worth a lot more (since it can be incorporated into large existing spectrum portfolios), but their willingness to cannibalize themselves may keep them away from the auction as well.

So what seems most likely to this writer is that we'll see relatively low bids emerge, and a winner that uses the auction to effectively purchase a call option on spectrum values. If spectrum rises quickly over the next several years, they'll deploy substantial service the FCC is loath to turn off, even if the operator is behind on rollout. If spectrum values languish, the auction winner won't really have that much skin in the game, and will let the option expire.

...bids from prospective new entrants are likely to be pretty small – largely reflecting what will be scant willingness on the part of the capital markets to fund this adventure

By John Stone  
Near Earth LLC

# Conference Round-up #1

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## ISCe 2008: San Diego, CA June 13, 2008

Approximately 700 satellite industry executives, military officers and government officials attended IScE this year. The conference was focused on satellite and hybrid network solutions for the government and military sectors. This year, IScE also teamed with the 26<sup>th</sup> Annual AIAA International Communications Satellite Systems Conference (ICSSC-2008) and the 2<sup>nd</sup> Annual Navy SATCOM Users Workshop for a comprehensive program of technical, marketing and user-themed panels. Before summarizing my key three take-ways from the conference below, I would like to first acknowledge three individuals and one company that were honored with awards, all of which in my mind were extremely well deserved. Congratulations to all:

Many golden crumbs have fallen on many laps.

### **Lifetime Achievement Award**

David Hershberg, CEO of Globecom Systems

### **Innovation Award**

Gary Hatch, ATCi founder and CEO

### **Aerospace Communications Award**

Mark Dankberg, ViaSat CEO & Chairman

### **AIAA Leadership Award**

Boeing Satellite Systems International

## **The Public – Private “Partnership” May Change**

...it was as if landlords having leased out most of their floors to global media and telecom firms under 3 – 15 year leases were then able to offer the remaining scattered blocks of offices to a very high credit quality tenant on a higher month by month rate basis

The last several years have been ideal in many respects for both government users and industry suppliers. Many golden crumbs have fallen on many laps. Satellite operators had plenty of excess capacity to sell and government users needed to use that capacity badly (some 80% of current MilSatCom needs are filled commercially). Government also wanted to purchase capacity on a short-term often sub-transponder block basis; both of which meant nice profit margins for industry and great flexibility for the government. To use the real estate analogy, it was as if landlords having leased out most of their floors to global media and telecom firms under 3 – 15 year leases were then able to offer the remaining scattered blocks of offices to a very high credit quality tenant on a higher month by month rate basis and for year after year. Of course, this new tenant was a bit of a pain with tons of special requirements. Interestingly, from the government’s perspective, these special requirements shouldn’t be that special at all, but things commercial customers should also appreciate (and help pay for). With growing threats of cyber attacks, jamming, interference, even ASATs, they may have a point.

The situation today is that private (and public) equity owners have insisted on more rational fleet planning and deployment with much greater discipline in terms of space segment capacity additions. There is thus an

The overwhelming consensus seems to be that the government's requirements for bandwidth will continue to grow at a pace that will significantly outstrip any likely self-owned capacity it will put into service.

anticipated closing in the commercial supply-demand gap that has provided the benefits above. Much of the new commercial capacity is already targeted toward fulfilling demand for commercial video applications, including HDTV, consumer and enterprise broadband connectivity and cellular backhaul. So, in the continued absence of any serious forward purchase commitments by the government or even detailed planning with the satellite operators, will the "partnership" of the recent past last much longer? We doubt it. DISA certainly has no plans to operate any differently. Was it really even a partnership or just a marriage of convenience? Commercial firms are supposed to take educated and calculated investment risks related to potential future market demand, but not substantially unknown and even random risks. Build and they will come just does not fly anymore. For some reason the U.S. government can commit long-term to fiber capacity, but not to satellite capacity even though they have substantial access to excess fiber capacity (only 10% of GIG capacity being used today and 75% of that for morale purposes). Given changing circumstances, some new model needs to be developed for this partnership to continue to fully benefit investors, government users and tax payers. If nothing else, a greater amount of shared planning.

### **Government Bandwidth Needs Expected to Always Require Commercial Sources**

The overwhelming consensus seems to be that the government's requirements for bandwidth will continue to grow at a pace that will significantly outstrip any likely self-owned capacity it will put into service. Given the growing importance of network centric warfare, UAVs and COTM, it is hard to doubt or even debate the point, but timing does matter. There are some pretty large chunks of government owned space segment capacity coming online (e.g. WGS, MUOS, and T-SAT) and a questionable near term demand scenario with the potential drawdown in Iraq and change of Administrations. The consensus, however, is as Colonel Shearer encouraged, we should focus on the inevitable increase in traffic not any near term shift in the percentage mix of commercial versus government supply. True, but again for commercial planning and investment purposes the percentages and timing and degree of certainty do matter. A project that is expected to generate \$1 billion of revenues split evenly over ten years is quite different from one that starts with very little revenue in year one and ends with a lot in year ten, which is different from one whose timing of revenues are volatile and unpredictable and whose total could be half as large or twice as big.

### **Proliferation of Systems Confusing to the End User**

There was much discussion of the desire for standards, but no real likelihood that any would be supported given the government's past history backing standards. Even on the frequency side, there are systems being fielded for C, Ku, Ka, L and S-bands not counting the typical military only bands like X-band. Having multiple communications systems,

## Conference Round-up #1 (cont.)

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Ideally, the soldier just wants to pull out a Blackberry or iPhone type device and get any voice, data, photo or video he or she needs right then, on a secure basis and no matter where and no matter what else is happening

solutions and frequency bands (military and commercial) does at least provide redundancy at some level even if it does create network confusion at the end user. The soldier after all just wants connectivity and applications and doesn't care about the network. Ideally, the soldier just wants to pull out a Blackberry or iPhone type device and get any voice, data, photo or video he or she needs right then, on a secure basis and no matter where and no matter what else is happening. Instead, there is a growing catalog of systems that are much larger and harder for the soldier to use than a handheld. We even heard that there is a meaningful amount of doubt among commanders and soldiers if these advanced military communications systems will even be there when they need them and if they should spend more time training as if they will not be. How do we fix this? One idea expressed by Paradigm Secure Communications, a unit of EADS Astrium, was to adopt the MOD strategy of using end-to-end commercial providers. Instead of providing DOD with occasional space segment capacity or a one solution SatCom network, the commercial provider would take charge of everything from owning the satellite, to designing the user terminals to the operation of the network. This all sounds wonderful, but I would think in the absence of long term traffic guarantees, it would at least require some exclusivity or first use provisions over other commercial sources and perhaps even some level of usage guarantees versus comparable government owned capacity. Is this possible? If so, perhaps it is a market opportunity commercial companies could finance.

By Hoyt Davidson  
Near Earth LLC

## Conference Round-up #2

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### Space Business Forum: New York, NY June 18, 2008

The Space Foundation, in a heroic effort to launch a New York based satellite industry forum during a depressed market environment, brought together an A-list of speakers for a crowd of approximately 150 industry executives, government officials and Wall Street bankers and analysts. A great idea and we hope it will become a mainstay of the satellite conference circuit and a must attend event for those interested in space as a “financial frontier.”

...life in a democracy does not necessarily guarantee wise policy choices, efficient cost effective policy execution or good long-term planning.

#### Newt and Prizes

The highlight of the day had to be the fiery, thought provoking and highly entertaining luncheon speech by Newt Gingrich who reminds us that life in a democracy does not necessarily guarantee wise policy choices (think ITAR), efficient cost effective policy execution (think NASA) or good long-term planning (think energy policy). Newt is a strong supporter of government incentives to unlock waves of innovation as opposed to the more limiting government contracting process that locks in a “winner.” We have always been fans of prizes too, like the X Prize, only noting that space is really expensive and that prizes should therefore be sufficiently obscene in size. Perhaps XXX Prize would be more appropriate. For instance, the current Lunar X Prize of \$20-\$30 million is really more of a gimmick and promotion for Google than a serious attempt at spurring Lunar exploration, yet even with this half-hearted effort entrepreneurs are coming out of the wood works. McCain’s recently proposed \$300 million prize for an efficient electric car battery is closer to the mark.

#### “The First Space Age is Over”

The above quote from Mark Oderman of CSP Associates echoes similar sentiments from many in the industry. That we are entering a new and different space age should be a wake up call for us fat and sleepy Americans just as it is a welcoming call to the new space faring nations joining the fun. We agree we are entering a new space age and think there are several important aspects of this new age to consider: (1) space is no longer the exclusive high ground of the U.S. and Russia, it is an increasingly international arena of commercial and military competition; (2) rocket science isn’t rocket science anymore, meaning the U.S. should stop pretending other nations do not have access to space age technologies; (3) space is no longer a sanctuary for the U.S. or any country, there are serious threats to monitor, mitigate and counter; (4) space is becoming increasingly driven by commercial interests and less ruled by government budgets and priorities; and (5) the aerospace industry and government thinking needs to evolve to better support these new realities. However, there seems to be an understandable lack of urgency as this second space age is just getting started and for the time being, space exploitation it is still heavily influenced by U.S. civilian (~\$20 Billion) and military (~\$60

...we are entering a new and different space age should be a wake up call...

## Conference Round-up #2 (cont.)

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Billion?) space budgets and secondarily European (ESA ~\$5 Billion, Military ~\$1 Billion) budgets. The nascent programs of China, India, Japan and a host of others, will change this dynamic and perhaps quickly. In short, the second space age will involve more players from more countries, greater international cooperation or at least teaming to share costs, and a higher percentage of non-government funding.

### “Sexy Utilities”

As Mr. Oderman points out, the aerospace primes have become “sexy utilities” living off budgetary market share and cost plus contracts. In a time of volatile equity markets and credit crunches, it is nice to have a stable, recession resistant dividend paying utility, but will that business model be sustainable in an era of highly stressed budgetary priorities? Perhaps it is time for the primes to re-explore the value of vertical integration versus merely systems integration. Perhaps the primes should take more risks and move to full life cycle support to enhance value for their customers like Paradigm is doing with the U.K. Ministry of Defense. The big question in our minds, however, is when should the primes wean themselves, at least a little, from the government gravy train and focus on building commercial space businesses for the 21<sup>st</sup> century. The Europeans seem to get this already, as François Auque, CEO of EADS Astrium, mentioned, they are even exploring such things as space tourism. Perhaps Europe’s lead in this regard is only logical as they must feed from a smaller government trough and must therefore be hungrier for new revenue opportunities.

### “Space Has Never Been More Central to Our Way of Life”

The above quote from Joanne Maguire, EVP Lockheed Martin Space Systems Company, is unquestionably true, yet most citizens of the world are clueless as to the importance of space to their everyday lives and security. The Space Foundation spends much of its time educating various communities as to the importance of space, but much more needs to be done. Whatever funds the U.S. government has dedicated to this task through NASA and other agencies, it is just not getting the job done. Perhaps it is time to take the job away from the government and have them outsource more of this education role to groups like the Space Foundation. What was encouraging was Ms. Maguire’s statement that Lockheed Martin is successfully attracting the engineering and scientific talent it needs from college campuses. It’s good to know that high profile aerospace endeavors are once again capturing the hearts and minds of our youth or maybe it is just that the software and Internet gaming jobs have now gone to lower cost Asian and Eastern European markets. It is beginning to look like aerospace may be one of the U.S.’s and the West’s last bastions of technology leadership; that is if it gets the support it needs. One area in particular needs more resources, Earth monitoring. Eric Webster, a Director at NOAA, said that with climate change we have never needed Earth observation more yet budgets are woefully short

In a time of volatile equity markets and credit crunches, it is nice to have a stable, recession resistant dividend paying utility, but will that business model be sustainable in an era of highly stressed budgetary priorities?

## Conference Round-up #2 (cont.)

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versus the systems we should be fielding. We would suggest more commercial outsourcing is the solution. Lastly, we would comment that just as space has become more central to our lives we also seem to be getting better at it. Cost effectiveness in terms of on-orbit capacity per dollar of cost has improved significantly (at least on the commercial side) and reliability has steadily improved (although perhaps still not good enough on the commercial side). As for the higher cost, higher quality control military side of the business, according to Gary Payton, Deputy Under Secretary of the Air Force, they have had 58 consecutive successful launches and no failures since 1999. That's impressive.

### **“Once a Space Company Becomes Successful, It Ceases to Be Thought of as a Space Company”**

The above quote from Tom Watts, Managing Director at Cowen and Company, agrees with our experience financing commercial space companies. The early adopters may care about the cool satellite delivery, but the mass market consumer just wants the service, information, connectivity or applications. So while Sirius Satellite Radio and XM Satellite Radio may still be “satellite” companies, after 15 million combined subscribers they are increasingly seen more as media/radio companies with Internet and other distribution channels for their proprietary digital audio content. GeoEye and DigitalGlobe have risen as satellite imaging companies serving primarily the U.S. and international governments, but are increasingly being pulled into aerial digital imaging and web-based distribution of value-added imagery for commercial and consumer markets. Are they still remote sensing companies or key players in the rapidly growing geospatial information industry? And Hughes Network Systems, now that they have Spaceway and are signing up hundreds of thousands of residential, SOHO and SME broadband customers, are they still just the world's largest VSAT equipment and service company or a major new Internet connectivity firm? From our point of view these transitions from niche satellite companies to major players in the overall telecom and media industries is a very welcome sign of the importance and vitality of the space industry. We would expect over time this trend away from a focus on infrastructure to a focus on service and application to accelerate, especially as end users drive a greater expectation for hybrid networks and solutions. We just hope that investors like those on the Forum's private equity panel (Andrew Africk of Apollo Advisors, C.J. Brucato of ABRY Partners and Hugh Evans of Veritas Capital) continue to see this industry as an attractive place to deploy their growth capital. We are very pleased they are making money in space and hope their success attracts even larger amounts of capital.

### **Is Space Tourism Really Real?**

The Forum included two featured speakers to help answer this question: Eric Anderson, CEO of Space Adventures, Ltd., and Stephen Attenborough, Commercial Director of Virgin Galactic.

...these transitions from niche satellite companies to major players in the overall telecom and media industries is a very welcome sign of the importance and vitality of the space industry.

## ***Conference Round-up #2 (cont.)***

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It may be too soon to answer this question with any degree of certainty, but there is certainly plenty of evidence that there is actually real customer demand and maybe even business models that close. Space Adventures may have the easier near term business model as it relies on existing technology and infrastructure to offer customers parabolic weightless flight for \$4,000 or a trip to ISS on Soyuz for \$35,000,000. It's good to capture the low and high ends of the market, but what about the middle market of those would be astronauts who can afford more than a vomit comet run but can't quite pull off a Soyuz trip. That is where Virgin Galactic is focused. For \$100,000-\$200,000 they plan to take you into space so you get your astronaut wings, much more weightless flight time and a far superior view of Earth. Their backlog seems to be surprisingly strong, although with people spending \$50,000-\$100,000 to visit the poles or climb Mt. Everest (way to go Armand) perhaps it is not that surprisingly after all. Unlike Space Adventures, however, there is a serious amount of technology and vehicle development to complete. A merger of the two companies would seem to make a lot of sense. Why not offer customers full service, one-stop shopping? Start them with the parabolic flight and then up sale them to space.

By Hoyt Davidson  
Near Earth LLC

# NEAR EARTH ANALYSIS: MARKET COMPARABLES

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

		Stock Price:			Enterprise Value as a Multiple of:			Price as a Multiple of:		
		6/26/08	Market Value of Equity	Enterprise Value (a)	LTM Sales	LTM EBITDA	LTM EBIT	LTM EPS	2008E EPS (b)	2009E EPS (b)
<b>Satellite Television (DBS)</b>										
BSY	British Sky Broadcasting (f)	\$ 4.66	\$16,608.7	\$19,239.4	2.1x	9.6x	11.9x	16.7x	18.1x	13.9x
DISH	Dish Network Corp	\$ 29.09	\$13,387.7	\$16,401.5	1.5x	5.9x	11.6x	20.5x	13.0x	11.4x
DTV	DirectTV Group Inc.	\$ 25.76	\$29,675.5	\$31,464.5	1.8x	7.1x	12.2x	20.2x	17.3x	13.3x
Mean					1.8x	7.5x	11.9x	19.1x	16.1x	12.9x
<b>Cable Television</b>										
CHTR	Charter Communications Inc.	\$ 1.07	\$436.4	\$20,470.4	3.3x	9.3x	23.1x	n/m	n/m	n/m
CMCSA	Comcast Corporation	\$ 18.61	\$56,035.4	\$86,759.4	2.7x	7.0x	13.9x	21.5x	20.7x	16.8x
MCCC	Mediacom Communications Corp.	\$ 5.44	\$517.1	\$3,725.6	2.8x	7.8x	15.9x	n/m	n/m	n/m
TWC	Time Warner Cable Inc.	\$ 26.35	\$25,742.4	\$41,132.4	2.5x	7.0x	14.5x	23.5x	20.6x	18.2x
Mean					2.8x	7.8x	16.8x	22.5x	20.6x	17.5x
<b>Television</b>										
TVL	LIN TV Corp.	\$ 6.63	\$342.2	\$1,189.4	3.0x	7.1x	11.1x	10.9x	10.2x	15.1x
SBGI	Sinclair Broadcast Group	\$ 7.68	\$721.6	\$2,072.1	2.8x	6.4x	12.4x	8.9x	8.7x	12.0x
YBTV	Young Broadcasting Inc.	\$ 0.13	\$2.9	\$813.8	5.2x	18.6x	n/m	n/m	n/m	n/m
Mean					3.7x	10.7x	11.7x	9.9x	9.5x	13.5x
<b>Satellite Radio (DARS)</b>										
SIRI	Sirius Satellite Radio	\$ 1.83	\$2,700.2	\$3,729.9	3.8x	n/m	n/m	n/m	n/m	n/m
WRSP	Worldspace	\$ 1.74	\$73.7	\$178.4	12.9x	n/m	n/m	n/m	n/m	n/m
XMSR	XM Satellite Radio	\$ 7.38	\$2,285.4	\$3,809.9	3.2x	n/m	n/m	n/m	n/m	n/m
Mean					6.6x					
<b>Radio</b>										
CCU	Clear Channel	\$ 35.36	\$17,552.3	\$23,352.5	3.5x	10.4x	13.8x	25.5x	24.2x	23.0x
CMLS	Cumulus Media Inc.	\$ 3.93	\$169.2	\$710.1	2.2x	8.3x	9.8x	n/m	20.7x	15.1x
CXR	Cox Radio Inc.	\$ 11.94	\$1,054.8	\$1,393.3	3.2x	9.2x	10.0x	8.9x	15.5x	15.5x
EMMS	Emmis Communications Corp.	\$ 2.44	\$90.0	\$711.6	1.9x	8.6x	10.2x	0.8x	n/m	n/m
ETM	Entercom Communications	\$ 7.24	\$273.2	\$1,210.5	2.6x	7.8x	8.9x	3.2x	5.6x	5.8x
ROIA	Radio One Inc.	\$ 1.44	\$142.2	\$949.2	2.9x	9.0x	10.5x	5.6x	16.0x	10.3x
Mean					2.7x	8.9x	10.5x	8.8x	16.4x	13.9x
<b>NewsPrint</b>										
MNI	The McClatchy Company	\$ 7.25	\$595.8	\$3,075.8	1.4x	5.7x	7.8x	2.4x	8.1x	8.6x
NYT	New York Times	\$ 15.81	\$2,276.7	\$2,965.3	0.9x	7.9x	15.6x	22.7x	17.0x	17.8x
WPO	Washington Post	\$ 594.50	\$5,655.5	\$5,894.4	1.4x	8.4x	13.0x	21.5x	20.6x	18.1x
Mean					1.2x	7.3x	12.1x	15.6x	15.2x	14.8x
<b>MEDIA SERVICES INDEX (excludes Satellite Radio (DARS) stocks)</b>										
High					5.2x	18.6x	23.1x	25.5x	24.2x	23.0x
Mean					2.5x	8.5x	12.6x	14.2x	15.7x	14.3x
Low					0.9x	5.7x	7.8x	0.8x	5.6x	5.8x

## 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:		
		6/26/08	Market Value of Equity	Enterprise Value (a)	LTM Sales	LTM EBITDA	LTM EBIT	LTM EPS	2008E EPS (b)	2009E EPS (b)
<b>Satellite Capacity Leasing (FSS)</b>										
ETL.PA	Eutelsat Communications	\$ 18.15	\$6,226.8	\$9,835.8	7.4x	9.2x	16.6x	21.4x	23.0x	20.2x
LORL	Loral Space & Comm. Inc.	\$ 16.04	\$325.3	\$435.2	0.5x	5.3x	20.0x	n/m	n/m	n/m
SESG.PA	SES Global S.A. (c)	\$ 24.94	\$11,073.7	\$16,142.7	6.4x	9.4x	16.7x	17.4x	26.8x	26.4x
Mean					4.8x	8.0x	17.8x	19.4x	24.9x	23.3x
<b>Satellite Equipment Manufacturers &amp; Integrators</b>										
CDV	COM DEV International (d)	\$ 3.50	\$238.3	\$234.1	1.4x	20.9x	n/m	31.0x	13.9x	8.9x
CMTL	Comtech Telecommunications	\$ 48.88	\$1,341.3	\$1,105.3	2.2x	10.0x	11.0x	17.6x	14.7x	13.5x
GCOM	Globecomm Systems Inc.	\$ 8.73	\$174.9	\$132.3	0.7x	7.2x	10.4x	13.0x	12.3x	14.3x
GILT	Gilat Satellite Networks	\$ 10.86	\$458.4	\$335.5	1.2x	9.9x	18.6x	20.8x	18.7x	17.5x
HUGH	Hughes Communications, Inc.	\$ 46.50	\$893.1	\$1,359.9	1.4x	9.7x	15.5x	18.7x	19.4x	14.9x
ISYS	Integral Systems Inc.	\$ 41.57	\$362.8	\$353.5	2.3x	12.6x	13.8x	18.5x	21.8x	19.0x
ORB	Orbital Sciences	\$ 23.93	\$1,444.2	\$1,343.7	1.2x	12.5x	14.9x	24.5x	26.9x	22.4x
RADN	Raydne Comstream Inc.	\$ 11.16	\$209.9	\$181.2	1.2x	10.2x	12.9x	20.9x	21.1x	17.2x
SATS	EchoStar Corp.	\$ 31.95	\$2,910.8	\$2,428.7	1.5x	n/m	n/m	n/m	n/m	n/m
VSAT	ViaSat Inc.	\$ 20.35	\$657.5	\$526.7	1.1x	7.9x	16.8x	20.1x	13.0x	11.3x
Mean					1.4x	10.0x	14.2x	19.3x	18.5x	16.3x
<b>Towers</b>										
AMT	American Tower	\$ 41.51	\$16,427.5	\$16,312.7	11.0x	17.6x	n/m	n/m	n/m	n/m
CCI	Crown Castle	\$ 38.95	\$11,000.5	\$17,360.6	12.1x	22.5x	n/m	n/m	n/m	n/m
SBAC	SBA Communications	\$ 34.98	\$3,872.7	\$5,690.7	13.5x	27.0x	n/m	n/m	n/m	n/m
Mean					12.2x	22.3x				
<b>General Telecom</b>										
S	Sprint Nextel Corporation	\$ 8.84	\$25,194.0	\$44,736.0	1.1x	4.8x	n/m	n/m	n/m	n/m
T	AT&T	\$ 33.47	\$213,313.3	\$284,840.3	2.4x	6.7x	13.1x	17.0x	11.8x	10.5x
VZ	Verizon Communications, Inc.	\$ 34.31	\$109,237.7	\$172,997.7	1.8x	5.7x	10.7x	19.3x	13.8x	12.5x
Mean					1.8x	5.7x	11.9x	18.1x	12.8x	11.5x
<b>TELECOM SERVICES INDEX (excludes Towers stocks)</b>										
High					7.4x	20.9x	20.0x	31.0x	26.9x	26.4x
Mean					2.1x	9.5x	14.7x	18.6x	18.2x	16.0x
Low					0.5x	4.8x	10.4x	13.0x	11.8x	8.9x

(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 1.5747 US \$ per Euro.

(d) Converted to US \$ from C\$ at an exchange rate of 0.9926 US \$ per C\$.

(f) Converted to US \$ from British Pound at an exchange rate of 1.99 US \$ per British Pound.

# 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	
<b>Satellite Operators</b>							
04/21/04	KKR	PanAmSat Corporation	\$3,532.0	\$4,300.0	5.2x	7.7x	
06/06/04	Blackstone Group	New Skies Satellites NV	956.0	956.0	4.5x	7.7x	
08/17/04	Zeus Holdings	Intelsat Ltd.	3,100.0	5,000.0	5.2x	7.6x	
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 (old)	2,800.0	2,940.0	7.1x	12.0x	
12/18/06	Telesat (new)	Loral Skynet	691.0	1,050.0	7.1x	19.6x	
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) (Pending)	199.0	199.0	5.8x	7.9x	
				Mean	6.3x	10.4x	
<b>Ground Equipment &amp; Systems Integrators</b>							
12/06/04	SkyTerra / Apollo	HNS (Hughes' VSAT, Broadband)	\$110.0	\$415.0	0.8x	n/d	
03/03/05	Radyne Comstream	Xicom Technology	41.0	46.0	1.1x	n/d	
08/15/05	Stratos	Xantic	191.0	191.0	1.1x	n/d	
11/11/05	SkyTerra / Apollo	HNS (Hughes' VSAT, Broadband)	155.0	460.0	0.8x	n/d	
11/21/05	Viasat	Efficient Channel Coding Inc.	25.5	25.5	n/d	n/d	
08/03/06	Thrane & Thrane	Nera's Mobile Satellite Communications	89.6	89.6	1.1x	n/d	
03/31/08	The Gores Group LLC, Mivtach	Gilat	453.1	475.0	1.6x	14.1x	
05/12/08	Comtech	Radyne	201.9	223.6	1.5x	16.0x	
				Mean	1.1x	15.1x	
<b>Aerospace and Defense</b>							
04/23/07	Kratos	SYS Technologies	49.3	49.3	0.6x	n/m	
05/03/07	Globecom	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	
05/13/08	Cobham	M/A-COM	425.0	425.0	0.9x	6.8x	
				Mean	0.9x	7.0x	
<b>Video Distribution Equipment</b>							
09/29/05	International Datacasting	Proflin (c)	4.5	3.9	1.1x	n/d	
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	
07/25/06	Motorola	Broadbus Technologies	181.0	181.0	n/d	n/d	
08/21/06	Cisco	Arroyo Video Solutions, Inc	92.0	92.0	n/d	n/d	
08/22/06	Harmonic	Entone Tech.	45.0	45.0	n/d	n/d	
12/21/06	Motorola	Tut Systems	39.0	39.0	1.0x	n/d	
				Mean	1.9x	13.2x	
<b>Towers</b>							
07/04/04	Global Signal	Lattice Communications	\$115.0	\$115.0	9.4x	n/d	
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	11.9x	n/d	
10/06/06	Crown Castle	Global Signal	4,000.0	5,800.0	12.1x	26.6x	
				Mean	10.9x	20.5x	
<b>General Telecom (Wireless)</b>							
02/17/04	Cingular	AT&T Wireless	\$40,770.0	\$47,105.0	2.8x	10.7x	
12/15/04	Sprint Corp	Nextel Communications Inc	28,449.0	36,200.0	2.7x	7.1x	
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	
				Mean	3.2x	10.5x	
<b>Television</b>							
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	
03/29/07	Umbrella Holdings LLC	Univision Communications	12,300.0	13,700.0	6.3x	18.1x	
				Mean	4.9x	15.6x	
<b>Radio</b>							
09/29/04	Capital Radio	GWR Group	\$611.0	\$728.0	3.1x	13.4x	
06/21/05	Emap PLC	Scottish Radio Holdings	713.0	793.0	4.5x	17.7x	
11/01/05	Cumulus Media Inc.	Susquehanna Radio	1,200.0	1,200.0	n/d	15.0x	
02/07/06	Citadel Broadcasting	Disney (ABC Radio)	1,500.0	2,700.0	4.7x	13.5x	
				Mean	4.1x	14.9x	
<b>New Media</b>							
02/17/05	New York Times	About, Inc	410.0	410.0	10.0x	30.0x	
03/21/05	IAC	AskJeeves	1,850.0	1,850.0	5.8x	19.0x	
06/06/05	E.W.Scripps Co.	Shopzilla Inc.	525.0	525.0	4.0x	15.9x	
07/18/05	News Corp.	Intermix (MySpace.com)	580.0	571.0	6.4x	n/m	
3/6/06	NBC Universal	iVillage Inc.	600.0	550.0	6.0x	32.4x	
3/15/07	Cisco	WebEx	2,900.0	2,900.0	7.6	29.3	
				Mean	6.0x	22.7x	

(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

(c) Values reflect closing figures. Converted at 1.1757 C\$ per US\$

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

It also includes estimated transaction value of \$410M for the final sale of 3 TV stations. This is predicted to occur sometime in 2005.

n/d Not Disclosed

n/m Not Meaningful

## ***ABOUT NEAR EARTH LLC***

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Near Earth provides a full range of capital raising, advisory and consulting services to companies and their Boards. We also provide financial advisory services, valuation, structuring, and due diligence support to private equity, hedge and distressed debt funds. Please contact us if you would like our assistance with a contemplated satellite, telecom or media investment or portfolio divestment.

For more information about our current assignments or about Near Earth LLC, please visit our website at [www.nearearthllc.com](http://www.nearearthllc.com) or contact us at our location below:

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