

IBM Signs Cloud Storage OEM with Nirvanix (Very Interesting), 3Q11 Earnings Focal Points, Thailand Flooding (a 2+ Week Issue or Longer?), & More...

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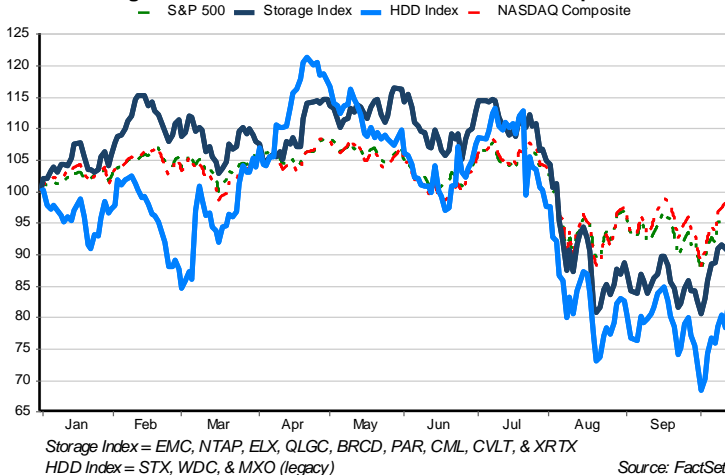
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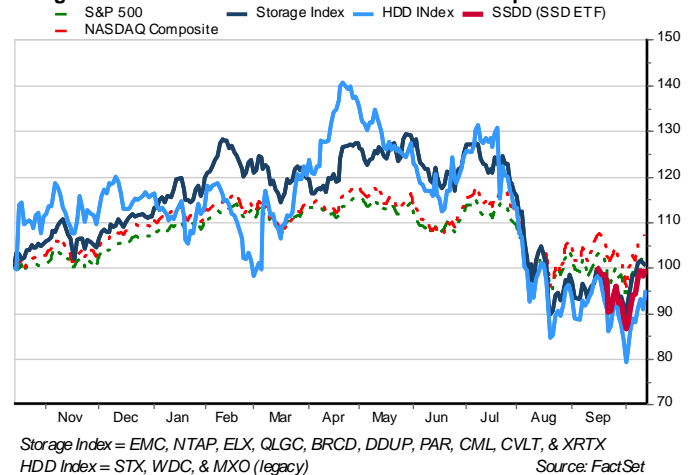
Summary:

- Nirvanix Lands Interesting Cloud Storage OEM Relationship with IBM – A Relationship Worth Watching/Understanding?**
While it is clear that all eyes will be on earnings this week, we thought we would lead out this week’s report with a different topic of discussion – IBM’s interesting announcement of an OEM relationship with privately held Nirvanix; focus on cloud storage (see detailed discussion on pgs 2-3 below, per discussion with Nirvanix CEO, Scott Genereux). Last week, IBM announced a five-year OEM agreement to integrate Nirvanix’s software IP (including *global* namespace) cloud storage capabilities into its SmartCloud Enterprise services portfolio (competing against EMC’s Atmos/Isilon, as well as Amazon S3, Microsoft Azure, Google, and others offering cloud-based storage). Nirvanix appears to be positioning itself as a strong start-up leader in cloud storage with a geographically global namespace (vs. Isilon’s datacenter-only scalable namespace) and an expanding list of strong customers – Cerner (2PB OEM deal announced last week), Johnson & Johnson, GE, VMware, Cisco, NASA, and others (total at +1,200 customers using their cloud storage services via eight globally data centers). With a focus on cloud storage, we believe Nirvanix is a name to watch as it relates to our coverage in the space.
- Week Ahead – Let 3Q11 Earnings Season Begin.** For our coverage universe we will be particularly focused on the following results/thoughts: **(1) IBM (10/17; AMC).** IBM’s server results, particularly as it relates to our checks pointing to a slowdown (possible pause) in x86 server demand due to both the macro and Intel’s forthcoming Romley transition. As a reminder, IBM realized ~8%-9% x86 server shipment growth for its June quarter, which was followed by HP and Dell seeing flattish yr/yr shipment growth for their respective July quarters. While IBM is certainly going to be looked at as an important gauge of how enterprise hardware spending trends look going forward (i.e., expecting a normal vs. muted 4Q11 budget flush?), we would remind investors that the company will begin to comp against the anniversary of its Power and Mainframe server cycles. **(2) EMC (10/18; BMO).** While we maintain our positive thesis on EMC, we also continue to believe that the company did face a tough September quarter closer. As previewed, we did temper our estimates ahead of the 3Q11 earnings, in which we would particularly focus on a slowing high-end product cycle, offset by a solid midrange VNX product cycle (VNXe likely to remain a 2012 story). With positive checks highlighted on VMware (~19% of consolidated EMC revenue), we have increased confidence in EMC’s ability to maintain a ~\$19.8 billion revenue guide for 2011; however, we are more focused on trends looking into 1Q12 (note: we model a below seasonal 4Q11 and 1Q12 trend). **(3) Intel (10/18; AMC).** We would expect Intel’s results/commentary (particularly thoughts on *double digit* mainstream, ex-netbook, PC shipment growth) to be a key focal point. Additionally, Intel’s updated thoughts on the server market will have important enterprise implications (i.e., mitigating unit growth with ongoing solid ASP trends?). Any commentary on the company’s SSD roadmap will also be of interest. **(4) HDDs (Seagate 10/19; WD 10/20).** From our questions on shipments versus underlying demand in 3Q11 (i.e., reiterate our analysis of demand data points as pointing to a sub-170 million HDD demand dynamic in 3Q11) to the very fluid impact of the Thailand flooding, we will be focused on 4Q11 TAM estimates and how we should think about GM% trends going forward. Seagate execution challenges, pending acquisition approvals, and forthcoming SSD vs. HDD trends in ultrabook platforms will also be key focal points.

Storage & HDD Indices vs. S&P500 & NASDAQ Comp. - YTD



Storage & HDD Indices vs. S&P 500 & NASDAQ Comp. - 12-Months



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Highlighted Industry News/Thoughts:

Privately Held Nirvanix Lands IBM OEM focused on Cloud Storage – an Interesting Competitive Move to Watch

We believe one of the most interesting announcements last week was IBM's announced **5-year OEM agreement with privately held cloud file storage provider Nirvanix** (note: expanding on Nirvanix's established partnership with Riverbed). **Put simply, this relationship centers on the integration of Nirvanix's software IP into IBM's SmartCloud Enterprise solutions and sold/driven by the company's global services organization (solutions to be sold on a services basis).** Our discussions suggest that the relationship is currently in build-out phase and we would expect initial customer deployments to begin in early 2012. IBM's Vice President of Global Cloud Services, Jack Jackman, was quoted as saying that "...Nirvanix's cloud storage services offer the advanced, production-grade cloud storage capabilities that are built on the experience of hundreds of enterprises. The company's presence and strong adoption in leading Fortune 500 corporations makes its cloud storage technology ideally suited to IBM's global customer base..." Industry expert/consultant, Steve Duplessie, reported that this announcement followed IBM's announced acquisition of Platform Computing and that this announcement should drive further enterprise focus on the implementation/support for cloud deployments.

As a reminder, Nirvanix's CEO is Scott Genereux, who has been an industry veteran having previously served in executive sales/marketing roles at Hitachi Data Systems (HDS), Data Direct Networks (DDN), and QLogic. In addition to the relationship with Riverbed, Nirvanix also lists key strategic partners such as CommVault, Dell, Symantec, HP, and others. HP and Dell have been reseller partners with Nirvanix. Channel partners have included Avnet, Forsythe, Verizon, Swisscom, Atlas Digital Solutions, and Advanced Systems Group. In addition to the IBM announcement, Nirvanix this week also announced that **Cerner** would leverage the company's solutions to deliver cloud storage for the Healthcare industry – **clearly Nirvanix is seeing strong validation of the traction it has seen over the past several months (company posting triple-digit sequential bookings growth in each quarter during 2011).** This deal is a 2 petabyte initial deployment, which our conversations suggest to have the potential to expand by 2x over the next 2-3 years. Our discussions suggested that this was a very competitive win against EMC Atmos/Isilon and HP's 3PAR solutions. *Forbes* reported that they see this as a significant win for Nirvanix and its VCs (including Intel Capital, Mission Ventures, Valhalla Ventures, and Windward Ventures).

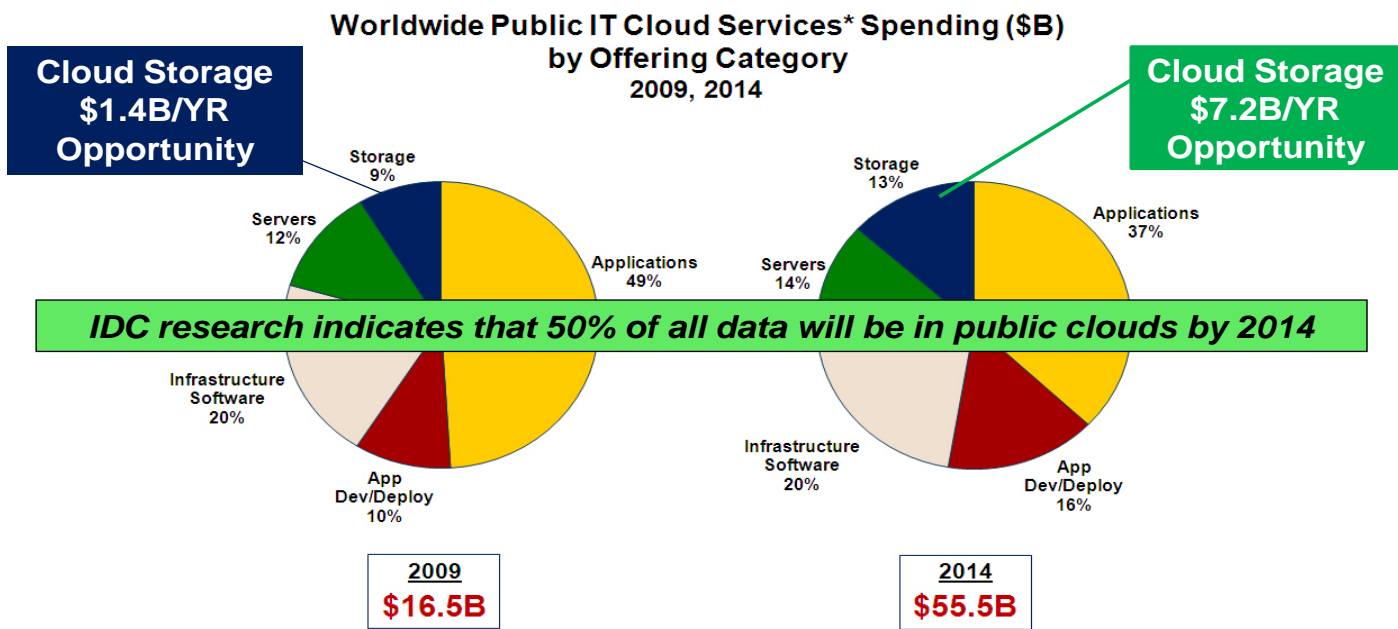
As an interesting note, in late June, the company announced that Paul Froutan had joined the company as its Chief Technology Officer – a big win when considering Mr. Froutan's prior role as the Head of Global Data Center Infrastructure at Google, prior to this serving as the President of Product Development at Rackspace Hosting. In May the company announced that Karen Sigman had joined the company as the Vice President, OEMs and Alliances – previously serving in OEM/channel management positions at QLogic, HDS, Data Domain, and IBM.

Nirvanix's Cloud Storage Network service/solution focuses on providing solutions for Public, Private, and Hybrid cloud deployments – the company's *Cloud Complete* solutions focus on providing secure pay-as-you-grow storage services. **The network currently consists of eight globally dispersed storage nodes (consistent with our conversations earlier this year) – California (two facilities), Texas, New Jersey, Germany, Switzerland (2 facilities), and Japan.** Each facility, except for the two located in Switzerland, are Equinix facilities (Switzerland facilities via Swisscom). The environment is managed under Nirvanix's global full file system that is touted to support billions of files under a single global namespace (using high-capacity 2TB SATA drives and Gig-E network connectivity). **The company believes its proprietary software positions itself as up to 24 months ahead of competition in enterprise-class (five-9's reliability) environments.** The company leverages standard components with a typical initial configuration consisting of two nodes with 200TB/node capacity, but scalable to multiple petabytes. The company's Network Operation Control staff monitors deployments on a 24x7 basis to ensure performance and security with each deployment located globally in Tier III facilities. **From a competitive perspective, Nirvanix, and now its partnership with IBM, could be viewed as competitive against EMC's Atmos solutions, as well as Amazon's S3 and Microsoft's Azure.** Previously noted customers of Nirvanix have included: Cisco (Global Tech Support), Logitech, Johnson & Johnson, Advocate Health Care, National Geographic, Warner Bros. Pictures, NBC Universal, GE, SoftLayer, Fox Sports, Macsteel, VMware, NASA, Comcast, and others. **The company's presentation material notes that it currently has over 1,200 customers accessing data across its cloud services worldwide.**

Global Namespace – Single Resource vs. Truly Global? We believe Nirvanix makes a very strong argument (validated by last week's IBM and Cerner announcements) that its cloud-based storage services are differentiated when discussing global namespace capabilities relative to Isilon and others. The company notes that its solutions support global namespace across a multi-tenancy deployment that can be geographically disperse. This compares to Isilon's solutions (OneFS file system) that supports multi-tenancy under a single namespace, but only for the resources that are construct based (i.e., only in within a single data center vs. support single file storage/retrieval across the company's entire Cloud Storage Network). In addition, Nirvanix argues that Isilon's storage pools are not encrypted from each other and that there is no integrated billing.

In terms of the size of the market opportunity for cloud-based storage, Nirvanix highlights recent IDC estimates calling for a market to grow from \$3.3 billion in 2010 to a \$11.7 billion addressable market by 2015, though also highlighting some older research from IDC that points to a \$7.2 billion addressable market by 2014, noting that IDC estimates that ~50% of all data will be stored in the cloud by 2014 (we would assume this includes consumer-driven content).

Massive Opportunity: A \$7.2B Public Cloud Storage Services Market within Just 3 Years



Source: IDC, June 2010
 * Includes spending on Applications, Application Development & Deployment Software, Systems Infrastructure Software, Server capacity and Storage capacity provided via the public Cloud Services delivery model.

Nirvanix Confidential

Source: Nirvanix

Thailand Flooding to Create HDD Supply Chain Tightness – Positive or Negative (Depends on Timeframe of Impact)?

****Weekend Update** – Over the weekend, *The Bangkok Post* reported that the water had breached the Bang Pa-in industrial estates, which has over 90 factories concentrated in electronics, electrical appliances, engines, and garments. It was also reported that the nation was struggling to salvage the Rojana, Hi-Tech, and Sana Rattana Nakorn industrial estates. A total of 930 factories have been reported damaged in Thailand.

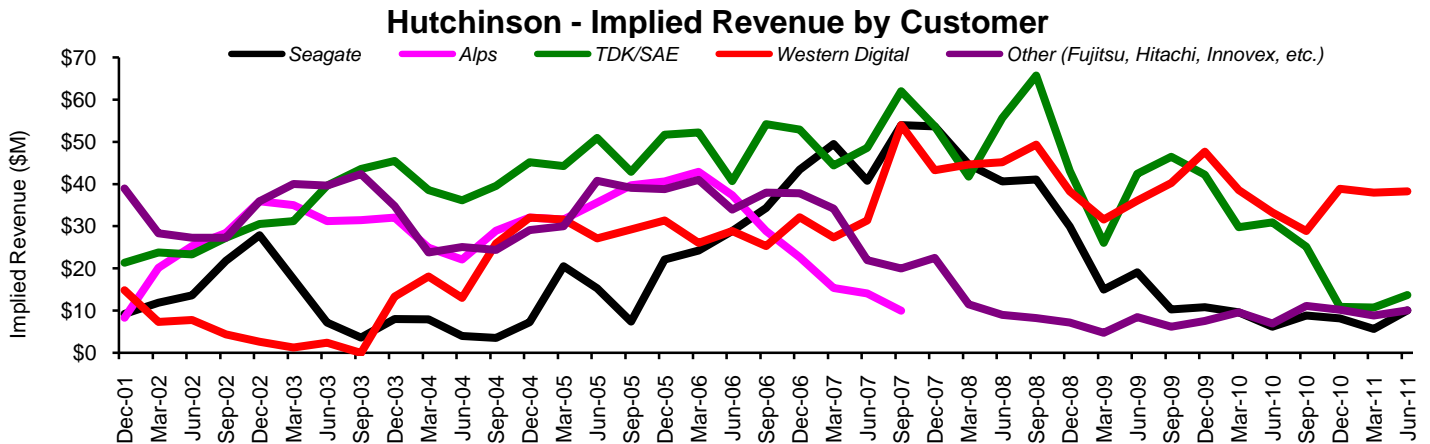
Last week there have been several companies within the HDD/PC supply chain (most notably HDD suspension assembly and motor manufacturers or upstream suppliers) reporting facility damages/closures related to flooding in Thailand – particularly in the Rojana Industrial Park, Ayutthaya (north of Bangkok). Various companies have reported temporary/mandatory manufacturing facility closures, which is likely to leave investors to gauge the impact on HDD pricing and/or supply/demand trends as we await Western Digital’s and Seagate’s September earnings results this week (10/19 and 10/20, respectively). The impact is understandably hard to judge, though we believe investor sentiment could view this as a positive as we think about pricing dynamics into 4Q11 (albeit OEM pricing already set with our checks reflective of more *normalized* trends). **While it is clearly hard to gauge the impact of this flooding, in speaking with many investors and based on our own pure guesstimate, we believe expectations for 4Q11 shipment TAM guide could now be in the ~165-170 million range and that issues lingering beyond two weeks could put downward pressure on production/shipment expectations into the ~160 million range (note: using ~180M/qtr production levels two weeks would equate to ~20-25 million drives).** We estimate ~4 weeks of total distribution channel inventory and would assume ~2 weeks of OEM JiT inventory levels – from which a burn-down of inventory could be viewed as a net-positive for the HDD industry.

We also view this as a positive given our questions with regard to industry production/shipment levels relative to implied demand trends coming out of the September quarter (please see our report published on 10/10/11 – *PC/HDD Update – 3Q11 Taiwanese Sales Analysis – Maintain +1% Yr/Yr PC Ship Estimate for 2011; Question HDD Ship vs. Implied Demand*). As a reference, below we highlight some of the HDD component vendors that have made announcements regarding the flooding impact thus far, as well as briefly highlight Seagate, WD, and HGST’s manufacturing exposure.

- **Nidec (HDD spindle motors).** Nidec reported two facility closures related to the manufacturing of components for HDDs and motors for HDDs. Nidec reports that the HDD motor facility impacted has capacity to manufacture ~20 million units per month, or ~60M per quarter, which would equate to 30%-35% of total HDD shipments and nearly 45%-50% of Nidec’s quarterly production.

Nidec is the largest supplier of HDD motors with a consistent +70% shipment share, shipping ~129 million motors in the June quarter. Minebea, which is Nidec’s closest competitor, also has facilities in this region.

- Hutchinson (HDD Suspension Assemblies).** Hutchinson is the largest supplier of HDD suspension assemblies (competing primarily against Minebea) and reported that it has suspended operations in its Ayutthaya, Thailand facility due to rising floodwaters in the Rojana Industrial Park where the plant is located. On Monday last week (10/10/11), the company reported that the floodwaters continue to rise and that they have not entered the company’s facilities – leaving the industrial park without power and that an evacuation of the park has been ordered. The company reiterated that, as a consequence, it has responded by increasing its production output from its U.S. assembly operations and is looking to utilize inventory levels to meet customer demand. As a reference, Western Digital has consistently represented Hutchinson’s largest customer – last quarter accounting for 53% of total revenue. Seagate, HGST, and Alps accounted for 14%, 10%, and 19% of total revenue, respectively. Hutchinson shipped approximately 118 million drive suspension assemblies (~\$0.59/unit) in the most recent quarter – 58% in desktop, 19% in mobile, and 23% in enterprise-class drives.

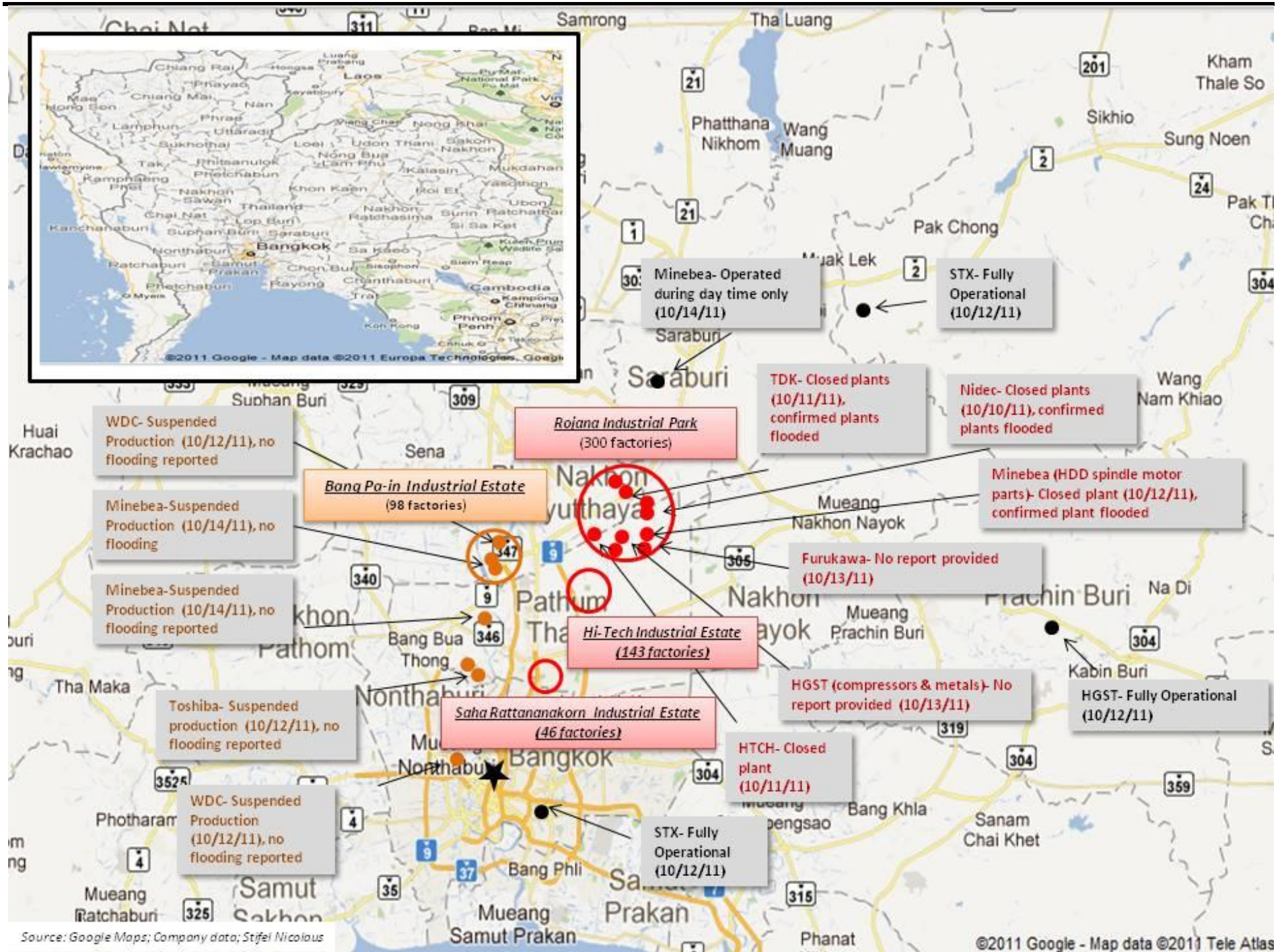


Source: Company Data

- TDK (HDD Heads/Assemblies).** TDK, the HDD industry’s leading merchant provider of read/write heads, simply reported that the company’s Thailand Rojana Plant had received damages – facility operates to process and manufacture rare earth magnets, recording media, and sensors. The company reported that the plants were immersed in water and operations were currently suspended. TDK is a supplier into each of the drive manufacturers, though most notably representing the sole head provider into Toshiba (note: Western Digital and Seagate are focused on maintaining ~70%-80% of HDD head manufacturing internally).
- HDD Vendors (Seagate, Western Digital, & HGST).** While the HDD vendors themselves had not said anything with regard to their Thailand facilities (although contacts at Seagate have noted ongoing operations), we would point out the facility exposure: **(1) Seagate** – Seagate has two manufacturing facilities in Thailand focused on head stack and head gimbal assemblies, one being Seagate Teparuk (closest to impacted areas; ~362,028 sq. feet) and the other being Seagate Korat (appears to be farther away from impacted area; ~1,162,846 sq. feet). **(2) Western Digital** - WD owns manufacturing facilities in Navanakorn, Thailand (~226,000 sq. feet), which it uses for assembly of hard drives and HSAs, and facilities in Bang Pa-In, Thailand (~1,031,000 sq. feet), which it uses for slider fabrication, the assembly of hard drives, HGAs and HSAs, and research and development. Both of these facilities appear to be close to the impacted areas. **(3) HGST** – HGST lists two facilities in Thailand – Prachinburi, Thailand where it focuses on server, mobile, desktop, and CEO HDD and HAS manufacturing and Chonburi, Thailand where it manufactures mobile HDDs and HSAs. Both of these facilities appear to be fairly distanced from the impacted area.
- Other.** Other HDD-related companies listed by various news publications as having a potential impact include: Acrathon Precision Technologies (HDD flex suspensions), Furukawa (HDD glass substrates), Hitachi Metals, Minebea (HDD spindle motors), OPT Precision (HDD spindle motor parts), Omron Electronic Components (HDD manufacturing; ID tags), Magnecomp (HDD suspension assemblies), IME (spindle motor components), Daido (magnets & coating for single motor parts), Nippon Super Precision, and likely a few others.

HDD Industry Impacted by Thailand Floods-Update

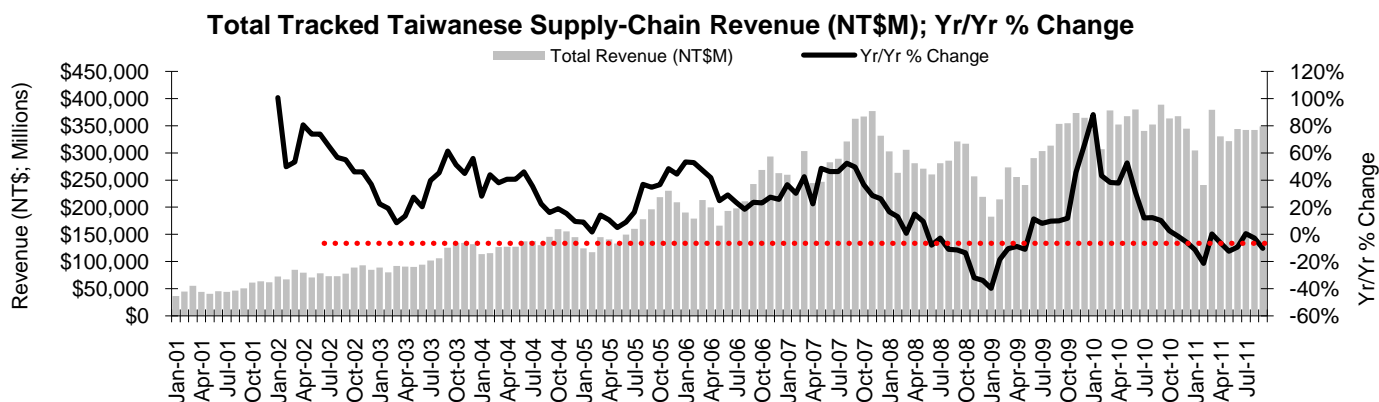
As a reference, the map on the following depicts the flooding that is currently impacting HDD among other factories located in Thailand. The companies designated in red font represent factories that have been closed due to the flood waters. To note, the major industrial park impacted by the flood waters is Rojana Industrial Park (300 factories); we would highlight the companies in this park have reported plant flooding. An article in *DigiTimes* last week noted that it will take at least 6 weeks for full recovery of operations. The additional parks, Hi-Tech Industrial Estate (143 factories) and Saha Rattanakorn Industrial Estate (46 factories), are highlighted in red, signifying the industrial park has experienced closures. The industrial park (Bang Pain Industrial Estate, 98 factories) and companies designated in orange have announced the suspension of production. The most recent announcements by each company state that their factory has not experienced flooding at the time the reports were issued. We would note that the Bangkok Post on Friday reported that the Bang Pa-In Industrial Estate is now completely under water. The companies residing in this industrial park have not released any additional information regarding the status of their factories as of 10/14/11.



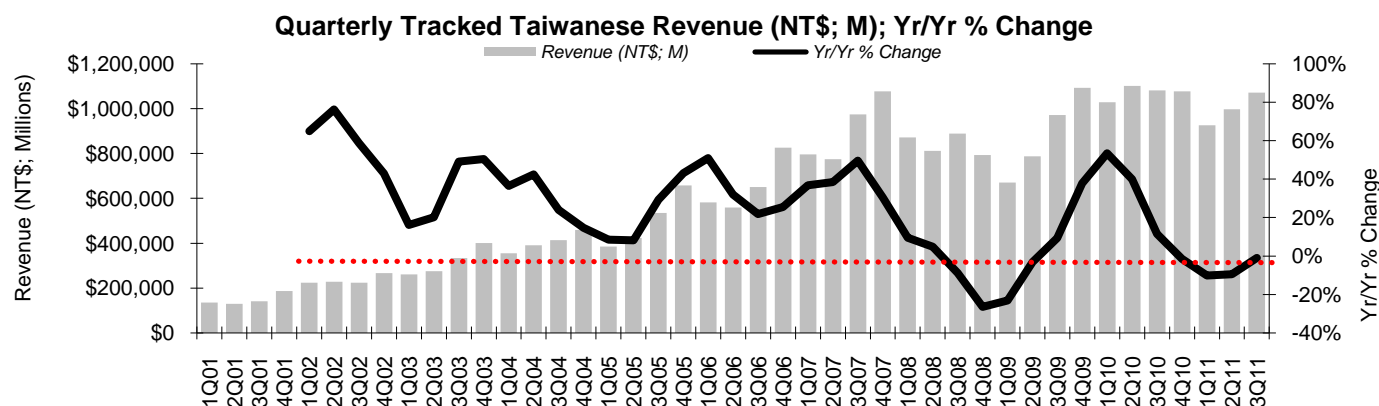
3Q11 Taiwanese Sales Analysis – Maintain +1% Yr/Yr PC Ship Estimate for 2011; Question HDD Ship vs. Implied Demand

• **Conclusion.** For September, our collaboration of nearly all of the monthly sales figures sums to a total yr/yr decline of approximately 6%, up only 2% on a MoM basis (vs. a historical average/median MoM increase of approximately 12%). For total C3Q11, the Taiwanese data that we track implies a sequential increase of approximately 7.5%, also well below the historical average sequential increase of ~16% over the past eight years. While September monthly data clearly highlights an uptick in production levels in the PC supply chain, we believe data supports our 1% yr/yr PC growth estimate for 2011, especially considering the modest downside to our ~88.1 million total PC shipment estimate for 3Q11 (see analysis discussion below). From an HDD perspective, an analysis of historical correlation trends leaves us further to question the apparent delta between implied HDD production/shipment levels and end consumption data points (note: our report on 10/10 discussed preliminary HDD shipment levels coming in at or slightly above the high-end of Western Digital’s guidance range of 170-175 million, though we believe reflective of some pull-forward in December demand).

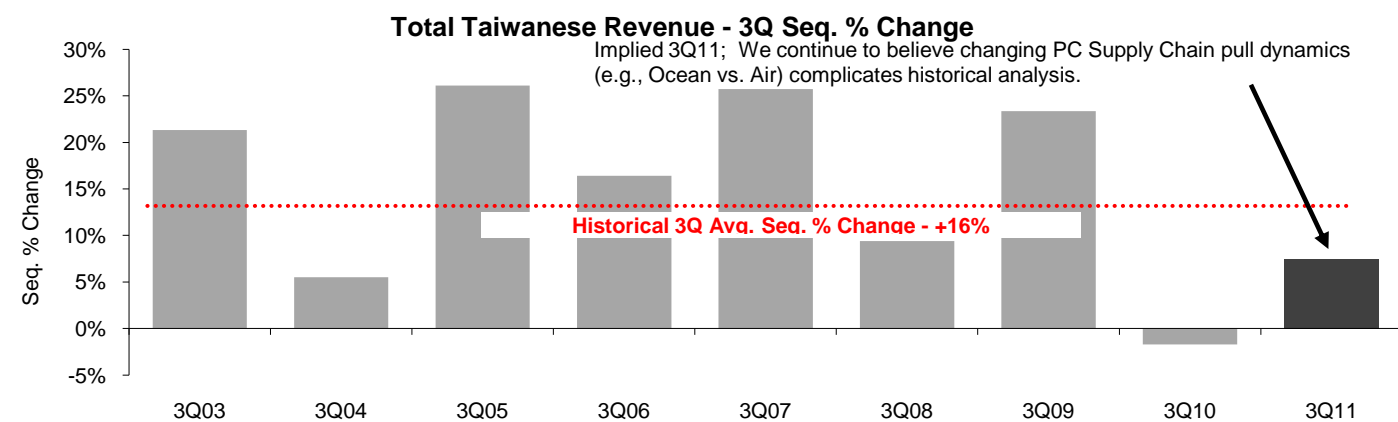
The chart below illustrates the monthly trends we have tracked since 2001. When analyzing these data points, and although we believe it remains important to considering changing seasonal dynamics and other impacts, we continue to find a fairly tight monthly contribution range for full quarter levels – for example, September has accounted for ~36% of total September quarter revenue (ranging from 34.8%-37.7%). We chart implied total quarterly sales levels, as well as the implied sequential growth relative to historical trends over the past several years.



Source: Company Data; Stifel Nicolaus



Source: Company Data; Stifel Nicolaus

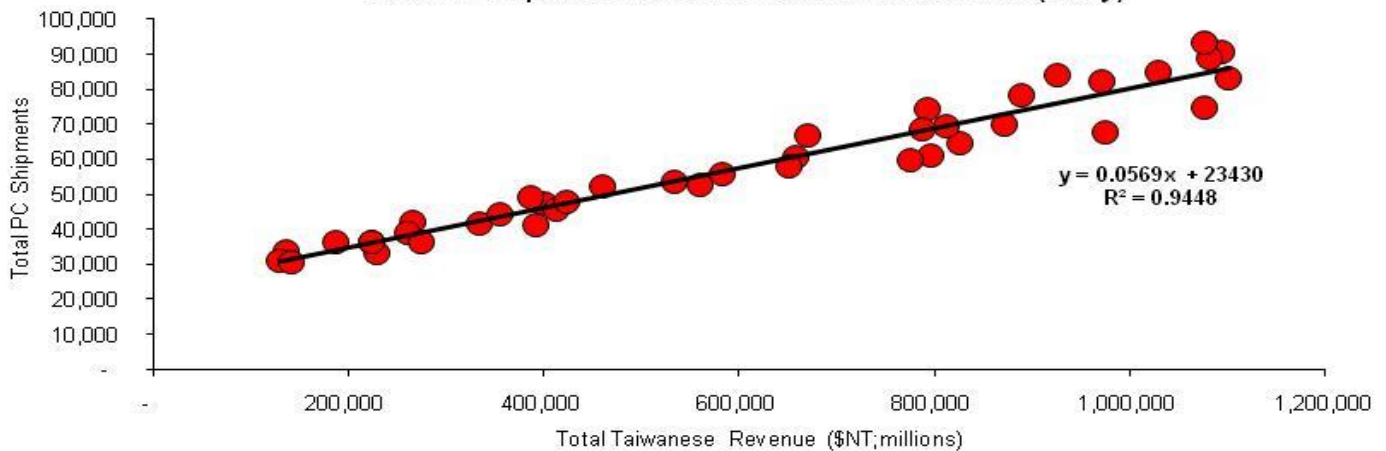


Source: Company Data; Stifel Nicolaus Estimates

- PC and HDD Implications (Using Straight Historical Correlation Analysis).** As shown in the charts below, we have historically seen strong correlations (i.e., $R^2 = >90\%$) in these quarterly Taiwanese revenue trends with total PC shipments, notebook/netbook PC shipments, total HDD shipments, and 2.5" mobile/notebook HDD shipments. In using the full September quarterly data tracked, we would now arrive at an **implied total PC shipment estimate in the 84-85 million range (consistent with our estimates post our analysis of July + August data); implying roughly a flat sequential shipment level and below our maintained ~88.1 million estimate.** As a reference, historical total PC shipments have increased by an average of approximately 10% sequentially in 3Q over the past sixteen years. In using this data relative to notebook shipments, the full September quarter sales data would leave us to estimate approximately 53-54 million notebook/netbook shipments for 3Q11, which would equate to roughly 8% sequential growth and also roughly in-line with our analysis post July + August data. This compares to an average sequential increase in notebook shipments standing at 14% for 3Q over the past sixteen years. As noted above, we view this analysis as supportive of our +1% yr/yr PC shipment growth estimate in 2011 – and in fact, if we were to use the implied total 3Q11 PC shipment figure, we would need a very strong above-seasonal 4Q11 trend to even hit this estimate – historical 4Q seasonality at +14% sequentially would imply total 2011 PC shipments at being down slightly more than 1% yr/yr.

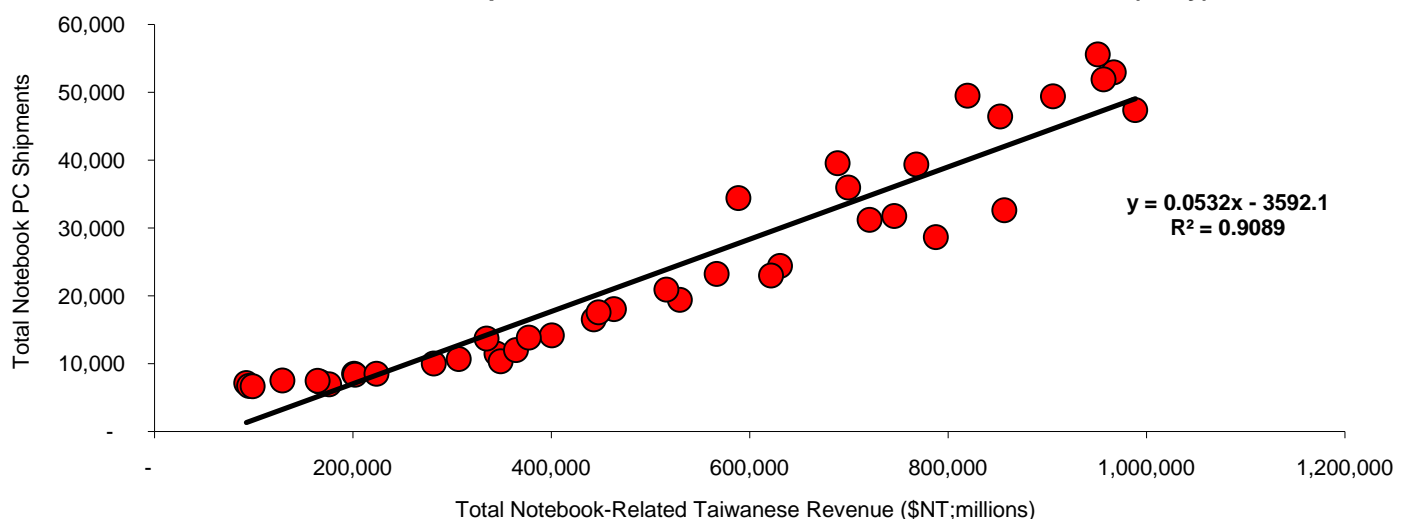
While we have highlighted third-party research estimates calling for total HDD shipment levels to be in the ~174-177 million range for the September quarter, we again point out that the historical analysis using the Taiwanese data points that we track would imply a much different dynamic – leaving us to continue to question the disconnect between what appears to be a very strong September pickup and ongoing tempered PC trends (possibly indicative of the beginning of an increasingly pronounced decoupling relationship going forward?). As a reminder, Seagate had estimated an HDD shipment TAM at ~165-170 million units in the September quarter; WD guided a TAM of 170-175 million. **Our historical correlation analysis of the Taiwanese data relative to HDDs would imply total HDD shipments in the low-160 million range.** In terms of 2.5" mobile HDD shipments, our analysis would arrive at approximately 83 million range, or approximately flat sequentially.

Total PC Shipments vs. Total Taiwanese Revenue (Qtrly)

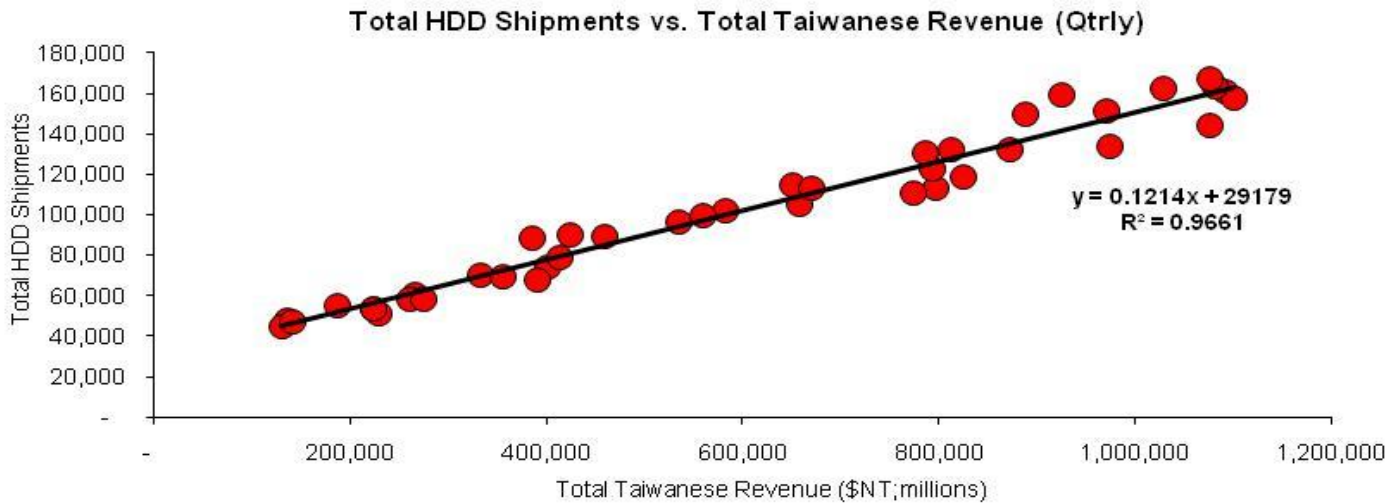


Source: Company Data; Gartner Quarterly Statistics; Stifel Nicolaus Estimates

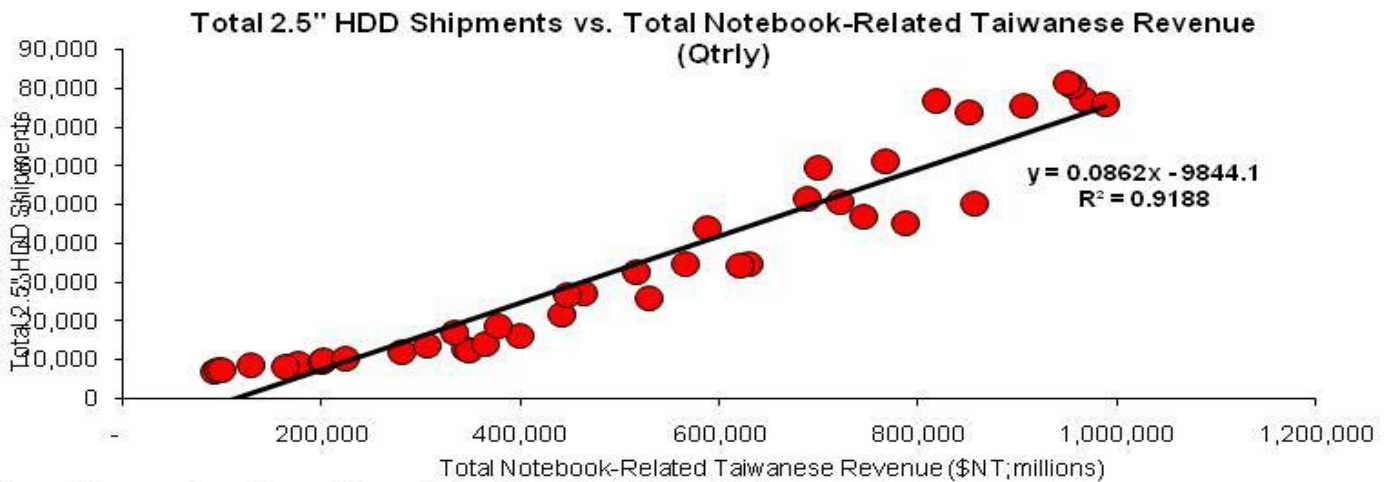
Total Notebook PC Shipments vs. Notebook-Related Taiwanese Revenue (Qtrly)



Source: Company Data; Gartner Quarterly Statistics; Stifel Nicolaus Estimates



Source: Company Data; Gartner Quarterly Statistics; Stifel Nicolaus Estimates



Source: Company Data; Gartner Quarterly Statistics; Stifel Nicolaus Estimates

Quanta and Compal Report September Notebook Shipments; Implies Notebook PC Shipments Slightly Below our Expectations but Leaves Ongoing Questions on HDD Demand vs. Production Levels

- News** – Quanta and Compal, the two largest notebook ODMs, announced their revenue and notebook shipments for the month of September. **Quanta shipped approximately 5.0 million notebooks during the month, which implies no change on a MoM basis and is also flat yr/yr.** This compares to an average MoM increase of approximately 11% in the month of September over the past eight years for Quanta. For C3Q11 in total, Quanta shipped approximately 14.5 million notebooks, which is up 11.5% yr/yr and up 1% sequentially. Previous estimates from the company had called for an expectation of shipments to be flat on a sequential basis during the quarter (~14.3 million units), which was down from original guidance of shipments increasing 5%-10% sequentially. The flat sequential quarterly estimate implied shipments of roughly 4.8 million in the month of September. **Compal reported September shipments of 3.4 million notebooks, which was up 4.6% MoM but down 26.1% yr/yr.** This compares to an average MoM increase of approximately 12% in the month of September over the past eight years for Compal. For C3Q11 in total, Compal shipped 9.85 million notebooks, which is down 2.5% sequentially and down 15.5% yr/yr. Compal had originally called for an expectation of seeing shipments increase 5%-10% sequentially in the September quarter, although we would point out that several industry sources of late have noted that C3Q11 shipment growth for Compal was likely to be 5% sequentially. Combined Quanta and Compal September shipments totaled approximately 8.4 million, which represents a decline of 12.5% yr/yr but an increase of nearly 2% MoM. **Total shipments for the September quarter came in at approximately 24.4 million, which is flat on a sequential basis and down roughly 1% yr/yr.**

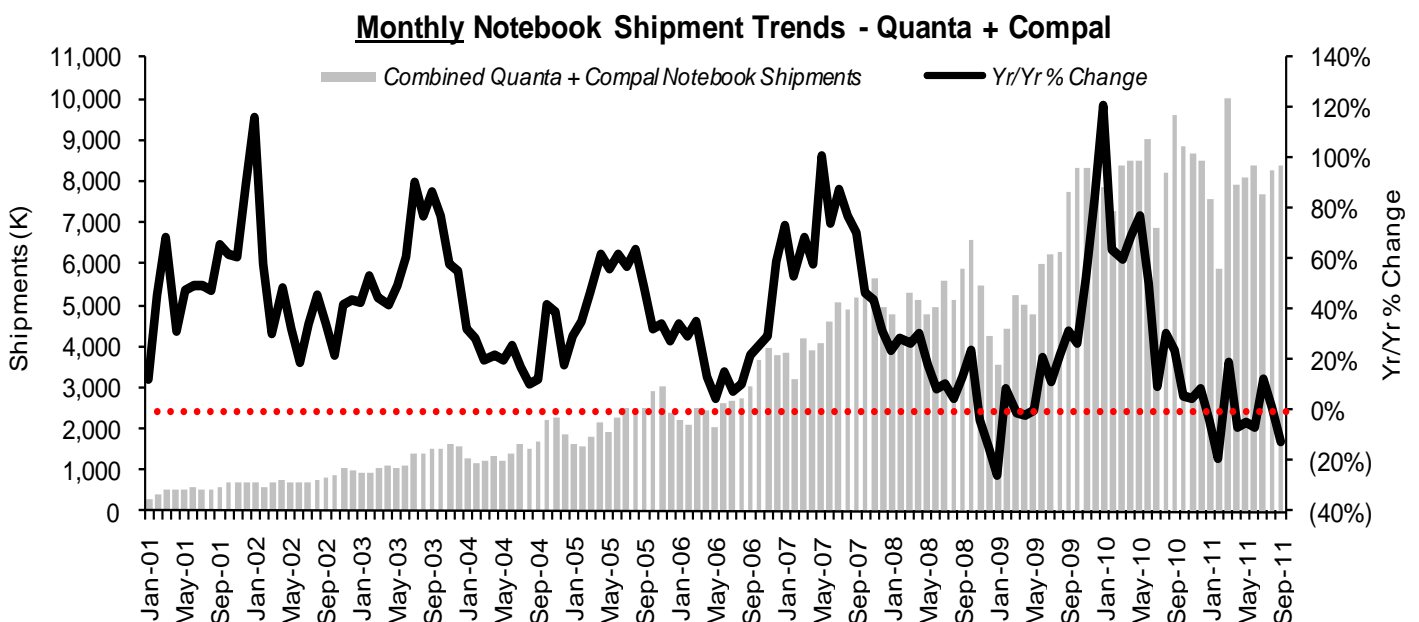
From a revenue perspective, total revenue for the month from Quanta was NT\$88,595 million, which is down 4.8% MoM and 8.4% yr/yr. As a mere proxy, using these figures, we would see that implied pricing declined in the high-single-digit yr/yr range in September vs. a decline in the mid-single-digit yr/yr range from the data reported for August by Quanta (note: PC pricing reflects one of the more significant variables in our PC model assumptions going forward). Compal reported revenues of NT\$54,292 million, which was down 32.3% yr/yr and 1.5% sequentially. We see that pricing for Compal also declined in the high-single-digit yr/yr range compared to a decline in the low-single-digit range in August.

- Forward Expectations.** We would note that a prior article from *DigiTimes* (9/1/11) states that Quanta expects shipments to be up 5% in 2HC2011 over 1HC2011, which implies total shipments of ~28.8 million, or 56.2 million shipments for C2011 (implies 14.5 million shipments in C4Q11 or up 1% sequentially and essentially flat yr/yr). We would point out that **Quanta reported during their C2Q11 earnings release that they expect shipments in 2HC2011 to grow 5%-10% over levels seen in the first half of the year, which is down from original guidance of 10% growth - clearly we see ongoing signs of downward pressure in PC shipment expectations for 2011.** This implies total shipments of 28.8-30.1 million shipments in 2HC2011, bringing total 2011 shipments to 56.2-57.5 million. This is in line with original C2011 guidance of approximately 57 million shipments. In addition, Compal disclosed during its C2Q11 earnings call that it expects 2HC2011 shipments to be flat when compared to the first half of the year. This would imply total shipments of approximately 20.5 million in 2HC2011, or 40.9 million, which compares to guidance of 42 million.
- Stifel Thoughts – Trends Indicated Shipments Below Our Estimate for C3Q11.** With both Quanta’s and Compal’s September shipments being lower than historical monthly seasonality, we view the results as implying overall notebook PC shipments to be a bit below our expectations for the September quarter. That said, we maintain our +1% total PC shipment growth estimate for 2011 (note: we lowered our PC estimate to +1% yr/yr from +4% yr/yr in early/mid September). We view this as continuing to be primarily driven by consumer PC weakness, but also gauge what could become a more stagnant corporate demand environment - we see investor focus shifting to 2012 impacts from Windows 8 and the launch of new Intel Ultrabooks.

In using Quanta’s and Compal’s reported September shipments, we arrive at combined shipments for the September quarter of approximately 24.4 million units (-1% yr/yr; flat seq.). In using our historical correlation ($R^2=98\%$) to combined Quanta and Compal shipments and notebook PC shipments, **the 24.4 million units shipped by Quanta and Compal would imply 50.9 million notebook shipments for the September quarter, which we estimate is up roughly 3% sequentially – below our 6% sequential growth estimate. Historically, total notebook/netbook PC shipments have increased approximately 14% on average for C3Q.** Gartner had fairly recently updated its PC shipment growth estimate to 4% yr/yr in 2011 (estimating +10% yr/yr in 2012), down from its prior 9% yr/yr estimate.

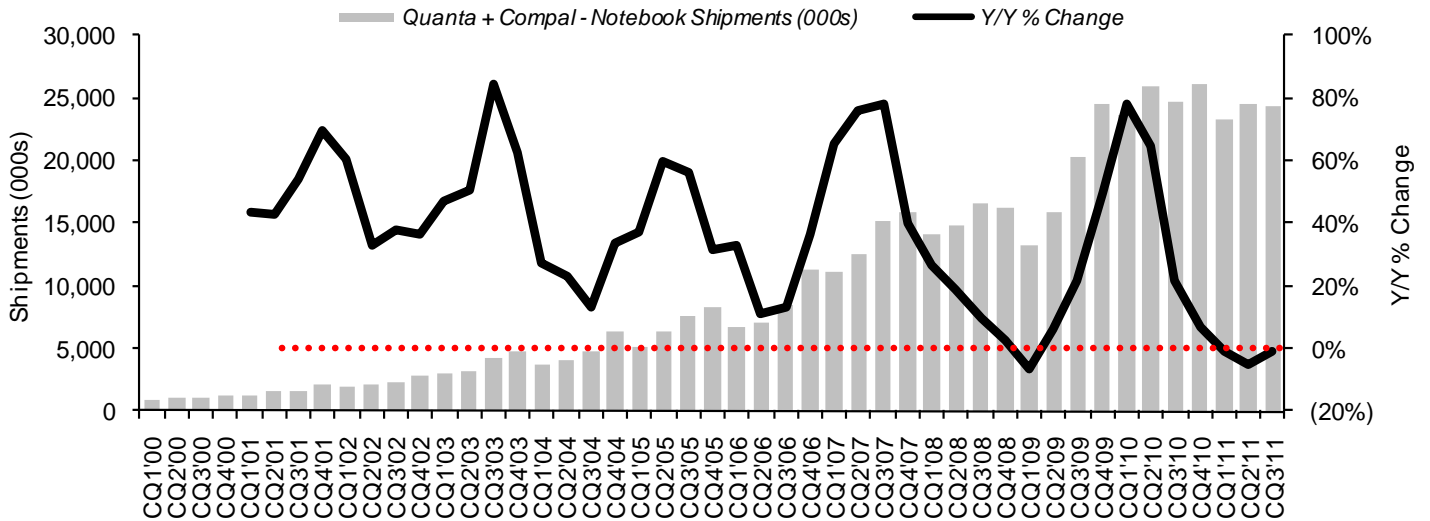
From an HDD demand perspective, from which we also see an extremely high historical correlation ($R^2=98\%$) to combined Quanta and Compal shipments, these PC demand data points leave us to further question demand versus production levels (and inventory) during the September and into the December quarters. As a reminder, Seagate has called for a TAM of 165-170 million units for the September quarter while Western Digital’s guidance calls for the industry TAM to be 170-175 million units (vs. a TAM of ~166 million units in C2Q11). **Using our estimate of 24.4 million notebooks shipped by Quanta and Compal in the quarter, this would be approximately 78.4 million 2.5” HDDs shipped during the quarter, which is down roughly 6% on a sequential basis.** This compares to last week’s reports from third-parties that 2.5” mobile HDD shipments stood at ~90 million, or up as much as 8% sequentially - clearly highlighting the question over demand versus production levels, in our opinion. Our model/estimates for Western Digital currently call for a sequential decrease of 2% in notebook drive shipments for the September quarter while our estimates for Seagate call for a decline of 3% sequentially in notebook drive shipments.

The first two charts below highlight monthly and quarterly notebook shipment trends from both Quanta and Compal. The third chart below highlights combined Quanta and Compal notebook shipments as it relates to total industry notebook shipments while the fourth chart highlights the correlation as it relates to 2.5” mobile HDD shipments.



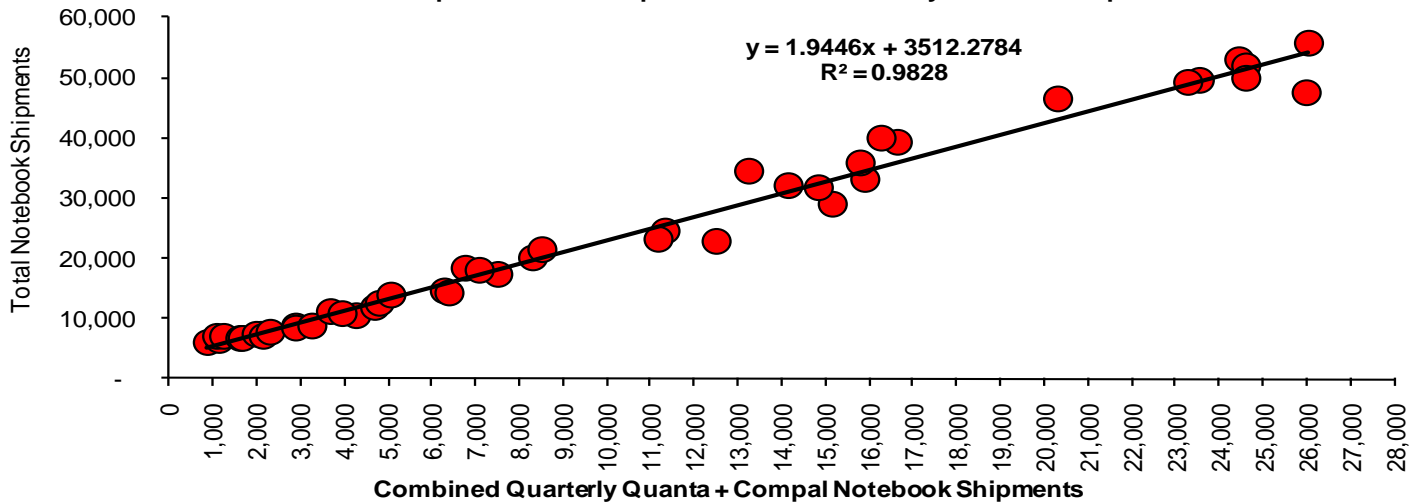
Source: Company Data; Stifel Nicolaus

Quarterly Notebook Shipment Trends - Quanta + Compal



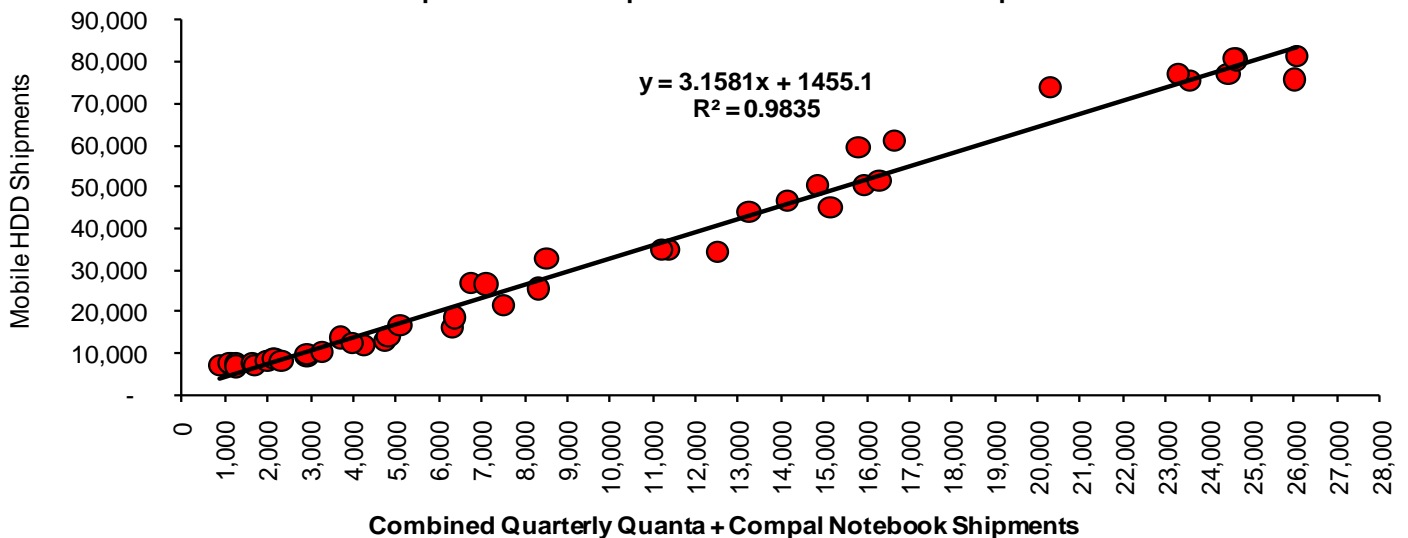
Source: Company Data, Stifel Nicolaus

Quanta + Compal Notebook Shipments vs. Total Industry Notebook Shipments



Source: Company Data, Stifel Nicolaus Estimates

Quanta + Compal Notebook Shipments vs. 2.5" Mobile HDD Shipment Correlation



Source: Company Data, Stifel Nicolaus Estimates

Gartner Estimates PC Shipment Growth at 3.2% Yr/Yr in 3Q11 – Below Prior Estimate, but Ahead of our Expectation

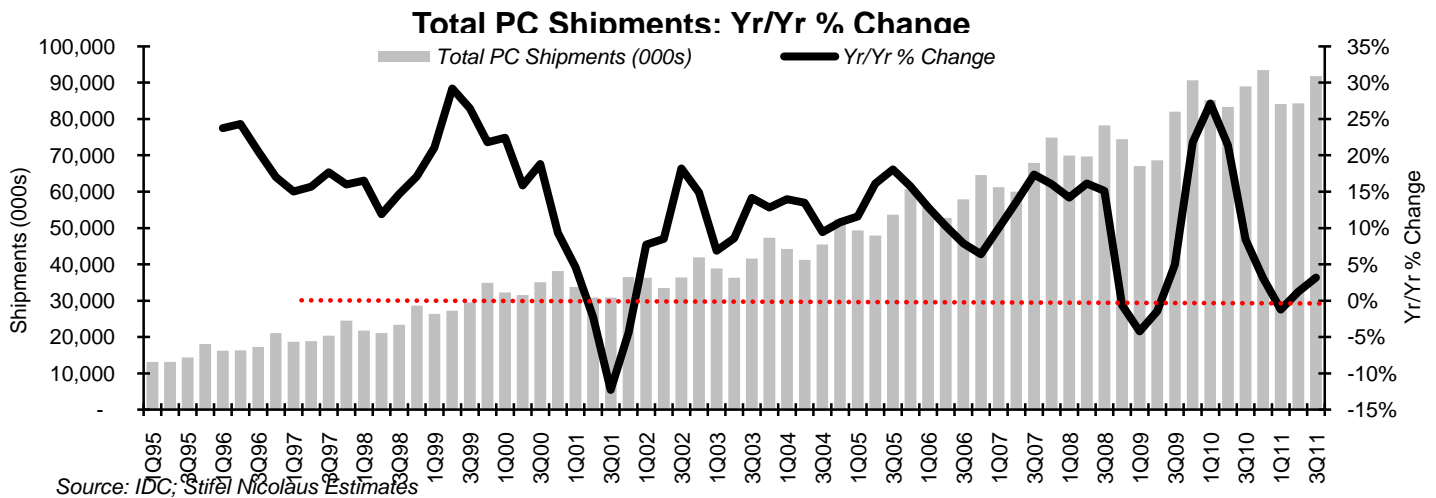
Gartner last week reported preliminary total PC shipment estimates at 91.8 million in 3Q11 – up 3.2% yr/yr and up 8.8% sequentially. While this was below the firm’s prior +5.1% yr/yr estimate, this was better than our below-consensus expectation of only 1% yr/yr growth in the September quarter (we had modeled 4% sequential growth, or approximately 88.1 million given our analysis of an array of monthly data throughout the quarter). As a reminder, the table below highlights the average, maximum, and minimum sequential shipment growth rates for the PC industry over the past sixteen years – highlighting the 9% sequential shipment growth as being slightly below the historical average.

From a market share perspective, Gartner’s estimates would imply HP’s market share at approximately 17.7%, up from 17.6% in the prior quarter, while Dell’s shipment share for 3Q11 fell to an estimated 11.6% from 12.5% in the prior quarter. Lenovo overtook Dell as the #2 vendor with an estimated 13.5% shipment share, up from 12.1% in the prior quarter and reflective of an all-time high and ongoing momentum driven by the company’s strong positioning in emerging markets. Acer’s shipment share was estimated at 10.6% versus 11.0% in the prior quarter and 12.9% in the year ago quarter. In total, we believe investors could question Dell’s implied shipment share loss and the lack of any material changes given the uncertainties in the HP PSG segment; however, we do not see this data as a meaningful surprise. **We maintain our 1% yr/yr PC shipment growth estimate for 2011, though note that this would reflect a total PC shipment level of only 92.5 million for the December quarter (or only 1% sequential shipment growth).**

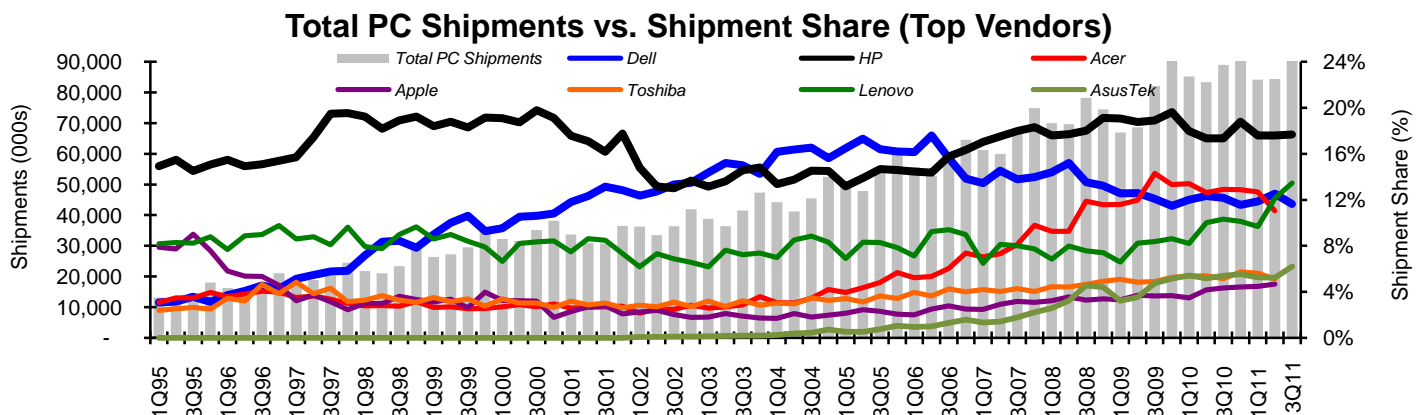
PC (Ex-Tablets) Shipments - Historical Seq. Growth Rates (Past 16-Years)

| | C1Q | C2Q | C3Q | C4Q |
|------------------|--------------|--------------|--------------|--------------|
| Desktop | -8.6% | -2.8% | 7.4% | 13.9% |
| Max | 0.2% | 3.6% | 13.2% | 26.1% |
| Min | -14.4% | -9.2% | -0.1% | -10.3% |
| Notebook | -3.9% | -0.7% | 14.2% | 12.6% |
| Max | 7.5% | 4.3% | 29.2% | 18.0% |
| Min | -12.4% | -6.0% | -0.4% | 0.5% |
| Total PCs | -7.9% | -2.4% | 10.1% | 14.3% |
| Max | -0.4% | 3.4% | 19.6% | 22.7% |
| Min | -11.7% | -8.6% | -0.1% | -4.8% |

Source: Gartner; Stifel Nicolaus



Source: IDC; Stifel Nicolaus Estimates



Source: Gartner Quarterly Statistics (1Q02-3Q11). Stifel Nicolaus Estimates

Intel Plans MLC-based PCIe SSD Introduction in 2Q12? Focus on Competitive Concerns for Fusion-io, OCZ, and STEC

According to an article published by Tom's Hardware, citing other industry reports, Intel's Solid State Drive (SSD) product roadmap has surfaced for its 700-series (enterprise), 500-series, and 300-series (consumer) solutions. In this, we are particularly focused on Intel's competitive positioning in the enterprise-class SSD market. The company's roadmap highlights its current 2.5" 3Gbps SATA (Lyndonville) SSD and an anticipated launch of its first SLC-based PCIe SSD (Ramsdale PRQ) in the December quarter (consistent with industry reports earlier this year). The company's initial PCIe offerings are expected to be available at 400GB and 200GB capacities, but no performance/latency metrics have been provided. Reports in mid-June highlighted the initial PCIe offering using 34nm SLC NAND would offer up to 180,000/56,000 random read/write IOPs (using 4K). Reports in September noted that Intel's SLC-based PCIe SSD would offer a sequential read/write transfer speed of up to 2.2GB/s and 1.8GB/s. This compares to Fusion-io's current 400GB SLC-based ioDrive2 solutions offering read/write performance of 351,000/511,000 (though quoted based on 512 byte performance). Fusion-io currently quotes read/write transfer speeds of 1.5GB/s and 1.3GB/s with the SLC-based ioDrive2 SSDs. OCZ's newest MLC-based PCIe SSD, Z-Drive R4, offers a quoted random read/write IOPs of up to 410,000/275,000, transfer rates of up to 2.8GB/s. Intel's apparent product roadmap also highlights a planned launch of **25nm MLC-based PCIe SSDs (Ramsdale MLC PRQ) in 2Q12**. The company's 6Gbps SATA enterprise-class 2.5" SSDs (Taylorsville PRQ) are expected to be introduced in 3Q12.

As we look at the expanding competitive landscape in PCIe SSDs, we would continue to highlight the architectural differences in Fusion-io's solutions relative to the other vendors (including EMC's Project Lightning, we believe to utilize Micron's P320h PCIe SSDs; STEC is also expected to commence OEM volume shipments of its Kronos PCIe SSDs in 2Q12). We would also question the time-to-qualification (up to 9+ months, according to our conversations), as well as the go-to-market strategy (Fusion-io's and OCZ's expanding direct model versus OEM-driven go-to-market). We would also continue to point out that Fusion-io and OCZ are currently shipping the majority of their PCIe SSDs using MLC NAND. Without standardization, we would not rely solely on quoted performance metrics and we would be interested in latency differences as important in enterprise data center deployments.

The company's 500-series solutions (currently consisting of the 120GB/250GB MLC-based 2.5" 6Gbps SATA SSDs) are expected to expand to 60GB/120GB/180GB/240GB/480GB capacities in 4Q11 (*Cherryville PRQ*). The company's *King Crest PRQ* 2.5" 6Gbps SATA SSDs are expected to be introduced in 2Q12. In the consumer market, the company's 300-series SSDs, the company highlighted an expected 4Q11 launch consisting of MLC-based mSATA SSDs (*Hawley Creek*) SSDs in 4Q11, followed by new MLC-based *value* solutions launched in 3Q12 (*Lincoln Crest*).

HDD Makers Gearing Up for HAMR in 2015?

Last week an article by *EE Times* discussed the future of HDD makers preparing for a generational shift to heat-assisted magnetic recording (HAMR) technology. While there are disagreements as to which technology, HAMR or bit-patterned media, both technologies will assist in delivering drives that are capable of including multiple terabits of data on a square inch of disk space. This compares to current technology of perpendicular recording, which allows for 1-1.5 terabits per square inch. The article noted that the president of the disk drive trade group (IDEMA) stated that there is a general consensus that a shift from perpendicular recording is about 3 years away, with mainstream products shipping in 2014 or 2015. Additionally, the president noted that the consensus is a switch to HAMR and then eventually to bit patterning in the distant future. HAMR challenges include finding the correct recording materials, in addition to solving a range of engineering challenges, which include issues with integration of the laser diodes and recording heads. Although HAMR has some challenges, at this point in time it represents a better alternative than its alternative of patterning multiple terabits of data uniformly on a platter, which currently cannot be mass-produced at a cost-efficient level of output. The article also notes that last year drive makers formed the Advanced Storage Technology Consortium, which is made up of a 13-member group, led by Hitachi GST, Marvell, Seagate and Western Digital. The group works pool resources needed to advance technology from perpendicular recording. This past July, the group began funding pre-competitive research at universities and institutes for advancing HAMR technology.

Toshiba Introduces 300GB 2.5" 15,000 RPM Enterprise SAS Drives

Toshiba last week introduced its newest enterprise-class HDD – a 15,000 RPM 2.5" enterprise drive with a capacity of up to 300GB. This would equate to 455Gb/in², or 150GB/platter areal densities. This solution, as expected, is a 6Gbps SAS solution focused on the enterprise server/storage market. This drive is also available at the 147GB capacity point. The solution offers an average latency of 2ms (2,000μs), which compares to PCIe SSD offerings capable of latency times as low as 15μs. *TrendFocus* notes that this is a logical move as the enterprise-class HDD industry looks to increase areal density, now competing with these solutions against Seagate's Savvio drives. According to *TrendFocus* estimates, Toshiba has roughly a 10% shipment share in the enterprise-class HDD market, which compares to Seagate and HGST at approximately 53% and 35% shipment share positions in the September quarter, respectively.

Lenovo-Compal Joint Venture to Begin Volume Production by End of 2012?

Cited in an article by *DigiTimes* last week, it is expected for Lenovo and Compal's joint venture to start producing volumes at the end of 2012. This joint venture agreement will mainly produce notebooks and all-in-one PCs. It is expected that the annual plant capacity will reach 10 million units. It is noted that this joint venture is expected to attract related upstream suppliers to establish plants and form a cluster in China. The article references this joint venture as an attempt to gain more market share, noting that 90% of the world's notebooks are manufactured by Taiwan's top-5 ODMs. It was also noted that this joint venture may allow Lenovo to strengthen its China-based upstream suppliers' capabilities.

Branded Notebook Vendors Cut Orders for 4Q11

In an article by *DigiTimes*, it was reported that with the exception of Apple and Lenovo, other branded notebook vendors have cut their orders to ODMs by 5-10% for 4Q11. The article notes that this is compared to a sequential increase of 6% in 3Q11. In the previous quarter most ODMs experienced over 20% sequential growth in notebook shipments. The article also suggests that shipments of Apple's MacBook Air and iMac from ODMs have been strong, likely to exceed 2 million units shipped a month during September to November.

ASUS Announces Release of New Zenbook Laptop

Last week ASUS announced the release of its new line of lightweight laptops, Zenbooks. There are two laptops currently offered from the Zenbook family, the 11.6 inch UX21 and the 13.3 inch UX31. Weighing in at 2.4 and 2.9 pounds, these notebooks specs include 4GB of RAM, USB 3.0, Bluetooth 4.0, a SATA III SSD (starting at 128GB), stereo speakers with Bang and Olufsen's ICEpower technology, ultra low voltage Core i5 and i7 processors and a two-second resume time. The Zenbooks are priced at \$999 for the 11.6 inch and \$1,099 for the 13.3 inch and are currently available for purchase in the U.S.

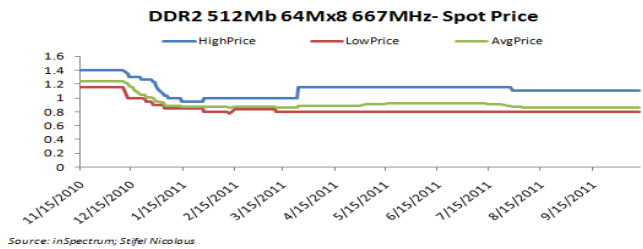
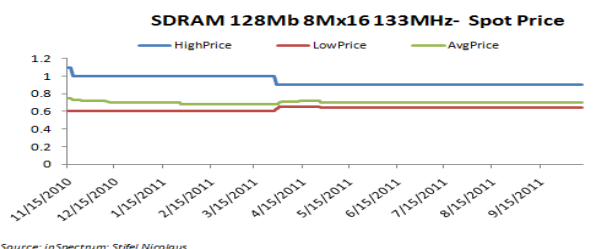
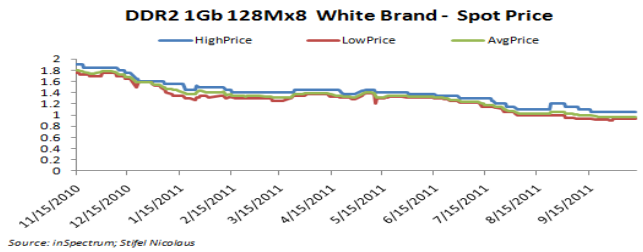
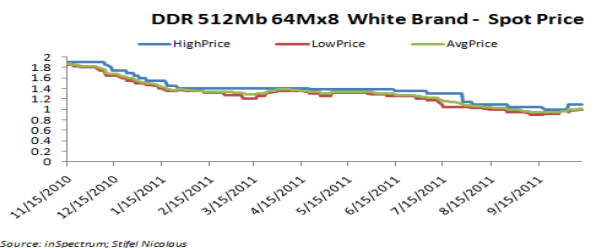
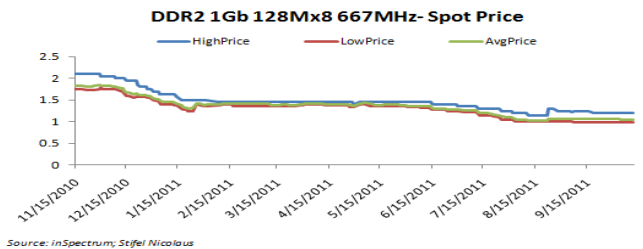
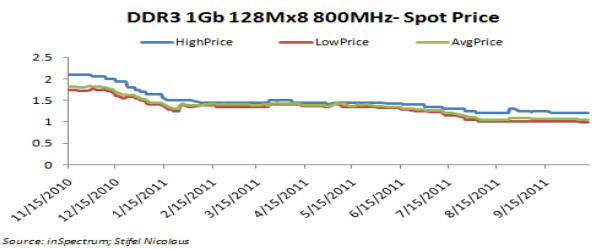
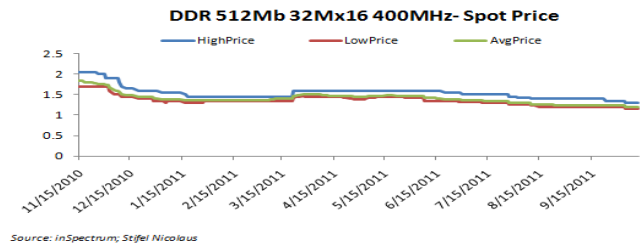
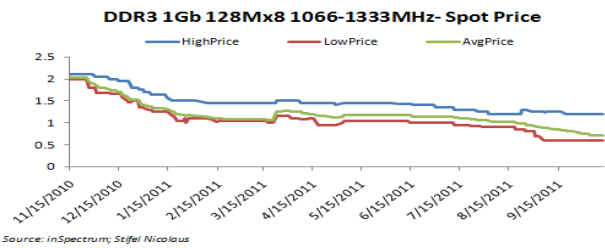
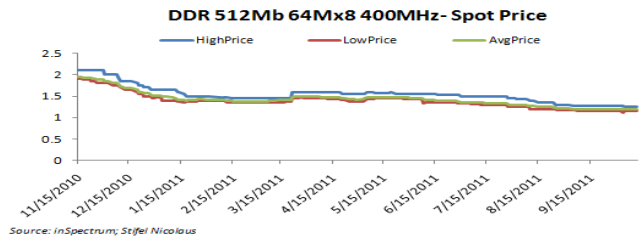
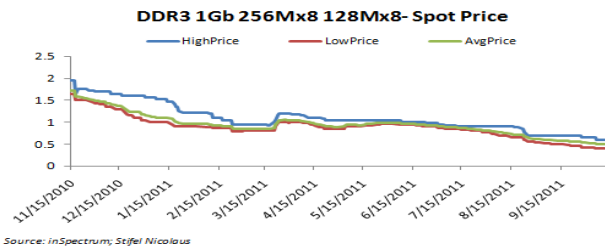
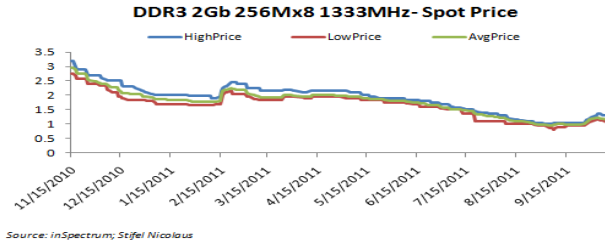
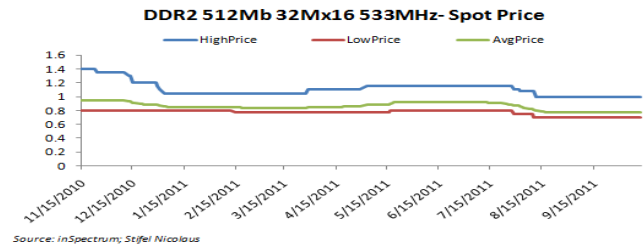
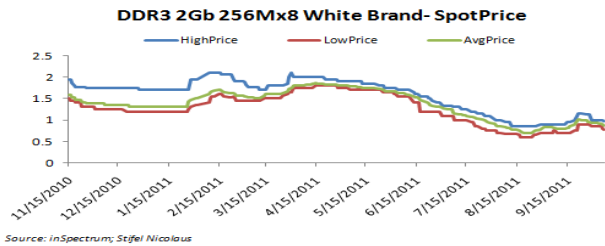
IBM Announces 25 New Storage Solutions – Expanding Support for Solid State Drives

Early last week, IBM introduced several new storage-related solutions (under the moniker of *Accelerating the Journey to Smarter Computing*) – company noting that enterprises should expect more from their storage with a focus on cloud and business analytical capabilities. Below we highlight what we view as the key announcements below:

- **Solid State Drive Expansion - Wow, eMLC-based SAS SSDs are Still VERY Expensive.** Aside from a deep array of product introductions, we believe a notable thing that sticks out in IBM's introductions is the company's expanding support for SSDs – including the company's support of new eMLC-based SSDs for the company's Storwize 7000 solutions. The new SSDs range from 200GB to 400GB 2.5" SSDs ranging in price from \$8,999 to \$17,999, or what would equate to approximately \$45/GB. This compares to the company's introduction/support for next-generation 3TB 7.2K RPM 3.5" SAS HDDs with a list price of \$1,899, or what would equate to approximately \$0.60/GB – clearly highlighting the significant differential in \$/GB for HDDs and SSDs. We believe the usage of eMLC solutions would be indicative of IBM's usage of SSD suppliers outside of STEC.
- **Storwize V7000 now Supporting File-Level Storage (Unified Storage), DS8000 (High-End) and XIV Enhancements, and Scale-Out NAS (SONAS).** The company continues to leverage/expand its portfolio of Storwize 7000-series solutions – now introducing the Storwize V7000 to support unified storage (i.e., support for both block and file-level storage). This offering also enhanced drive capacity options (including SSDs), as well as improved remote mirroring. *The Register* characterized the addition of file-level storage support as IBM's inclusion of a SONAS-like filer head. In addition to Storwize V7000 – we believe the key focal point of the company's production introductions, IBM also introduced enhanced *Easy Tiering* capabilities for the DS8800 high-end solutions – focused on improving application performance via better tiering capabilities (positive for SSD adoption; competing against EMC's FAST technology). The company also introduced expanded capacity for the XIV platform with a 50% increase. The company's SONAS strategy continues to evolve with the company introducing the Active Cloud Engine for support of SONAS deployments in multi-site cloud environments. The company notes a 10x increase in SONAS replication and scalability to support a 50% increase in capacity management under a single namespace (i.e., looking to expand competitive positioning against EMC's Isilon solutions, as well as NetApp's Data ONTAP 8/8.1 operating system).
- **Cloud Infrastructure; Analytics.** The company introduced the IBM BladeCenter System (converged solution) focused on the evolution toward the cloud network, as well as introducing next-generation networking solutions (including several solutions from Cisco). With a focus on cloud deployments, the company introduced the IBM Starter Kit for Cloud (Power Systems and System x), as well as zEnterprise Starter Edition for Cloud. The company also made announcements in its SmartAnalytics Systems, which we view as a sign of how analytics is evolving as an importantly relevant solution set sitting adjacently (and we believe over time integrated) with storage solutions.

DRAM Contract Prices Stable in First Half of October

In an article by *DigiTimes* last week, it was discussed that the prices of DRAM contract prices have seen a 2% decrease to flat growth during the first half of the month of October. This report is consistent with our tracking of DRAM pricing; we would further note prices have decreased about 50% cumulatively in 2011 as seen in the charts below. The article notes that this decrease in DRAM price has equated to a decrease in the cost of PC memory of 3.8%. Additionally, the article noted that PC OEMs have started replenishing their inventories from September, but still expressed caution in regard to their shipments for Q4, given the uncertainty in the world economy. Currently, the market for DRAM remains in a state of oversupply despite previous supply-side cuts. The article references ultrabooks, which use 4GB of RAM, as a possibility for acceleration in memory content per PC demand. Additionally, many DRAM suppliers are aggressively pushing 4GB modules; it is thought that 4GB parts are likely to exceed the 2GB parts in the 4Q11.



Enterprise Hardware & Hard Disk Drive Coverage Summary

| Ticker | Price 10/14/2011 | Market Cap. | Ent. Value | Share Performance | | | | | Valuation on Consensus/Trailing | | | | | | |
|---|------------------|-------------|--------------|-------------------|-----------------|----------------|---------------|--------------|---------------------------------|-----------------------|---------------------|---------------------|----------------|----------------------|-------|
| | | | | % Ch. YTD | % Ch. 12-Months | % Ch. 3-Months | % Ch. 1-Month | % Ch. 1-Week | Forward P/E (C2011)** | Forward P/E (C2012)** | EV/Sales (Trailing) | EV/Sales (Trailing) | EV/Sales C2012 | EV/EBITDA (Trailing) | |
| EMC (Hold to Buy = 1/4/10) | \$23.09 | \$47,680 | \$46,685 | 0.8% | 13.7% | -14.5% | 3.1% | 15.44 | 13.53 | 2.57 | 2.52 | 2.32 | 9.38 | | |
| NetApp (Hold to Buy = 12/20/10) | \$39.23 | \$14,453 | \$10,998 | -28.6% | -20.9% | -23.4% | 6.6% | 16.39 | 13.57 | 2.70 | 2.05 | 1.83 | 10.76 | | |
| Hewlett-Packard (Buy to Hold = 5/17/11) | \$26.11 | \$51,880 | \$65,018 | -38.0% | -38.1% | -26.3% | 15.0% | 5.63 | 5.43 | 0.41 | 0.51 | 0.52 | 3.87 | | |
| Dell (Buy = 1/5/10) | \$16.62 | \$30,322 | \$22,930 | 22.7% | 17.6% | 0.5% | 15.6% | 8.34 | 8.16 | 0.49 | 0.37 | 0.37 | 4.27 | | |
| Super Micro Computer (Initiate Buy = 2/23/11) | \$15.24 | \$615 | \$973 | 32.1% | 33.6% | -4.6% | 18.0% | 13.67 | 11.16 | 0.65 | 0.61 | 0.57 | 8.92 | | |
| Brocade (Buy to Hold = 2/23/10) | \$4.51 | \$2.213 | \$2,579 | -14.7% | -22.6% | -23.1% | 15.6% | 9.91 | 9.43 | 1.03 | 1.20 | 1.21 | 7.66 | | |
| QLogic (Buy = 3/25/09) | \$13.90 | \$1,445 | \$1,045 | -18.3% | -21.6% | -12.9% | -0.4% | 9.31 | 8.83 | 2.40 | 1.72 | 1.69 | 5.74 | | |
| Emulex (Hold = 3/25/09) | \$7.02 | \$620 | \$452 | -39.8% | -32.2% | -19.6% | 2.6% | 13.10 | 10.29 | 1.37 | 1.00 | 0.95 | 3.85 | | |
| CommVault (Buy to Hold = 7/13/10) | \$41.80 | \$1,861 | \$1,607 | 46.1% | 55.8% | -5.0% | 23.0% | 8.0% | 46.24 | 41.84 | 5.46 | 4.73 | 4.25 | 34.34 | |
| Xyratex (Upgrade to Buy = 6/24/09) | \$12.49 | \$354 | \$227 | -23.4% | -18.8% | 27.3% | 46.6% | 13.29 | 11.31 | 0.24 | 0.16 | 0.16 | 4.44 | | |
| Seagate (Buy to Hold = 10/28/10) | \$11.80 | \$4,951 | \$5,210 | -21.5% | -7.4% | -29.9% | 3.5% | 10.2% | 9.05 | 5.71 | 0.46 | 0.47 | 0.45 | 3.37 | |
| Western Digital (Hold to Buy = 4/22/10) | \$28.34 | \$6,609 | \$3,413 | -16.4% | -4.5% | -24.0% | -2.7% | 8.02 | 6.96 | 0.69 | 0.36 | 0.35 | 2.45 | | |
| STEC (Hold = 3/26/09) | \$10.84 | \$559 | \$346 | -38.6% | -24.2% | -38.6% | 13.5% | 2.7% | 13.20 | 9.64 | 1.56 | 0.97 | 1.04 | 4.85 | |
| OCZ Technology (Initiate Buy = 4/19/11) | \$5.30 | \$274 | \$209 | 10.0% | 86.6% | -48.4% | -3.6% | 64.56 | 11.43 | 1.02 | 0.78 | 0.69 | N/A | | |
| Fusion-io (Initiate Buy = 9/22/11) | \$25.21 | \$2,099 | \$1,880 | N/A | N/A | -18.4% | 20.7% | 15.4% | 77.27 | 98.64 | 10.37 | 9.53 | 6.92 | 168.66 | |
| IBM (Buy, David Grossman) | \$190.53 | \$227,546 | \$245,639 | 29.8% | 35.7% | 9.3% | 16.6% | 4.5% | 14.31 | 12.93 | 2.18 | 2.35 | 2.27 | 9.48 | |
| Apple (Not Covered) | \$422.00 | \$391,232 | \$362,837 | 30.8% | 40.6% | 17.9% | 9.7% | 14.1% | 14.51 | 12.31 | 3.90 | 3.61 | 2.88 | 11.17 | |
| Cisco (Hold, Sanjiv Wadhvani) | \$17.55 | \$94,469 | \$66,739 | -13.2% | -24.3% | 12.7% | 7.3% | 5.3% | 10.61 | 9.89 | 2.21 | 1.54 | 1.54 | 6.11 | |
| Juniper (Buy, Sanjiv Wadhvani) | \$21.56 | \$11,491 | \$9,021 | -41.6% | -31.9% | -30.5% | 0.4% | 13.2% | 16.84 | 14.28 | 2.59 | 2.04 | 2.04 | 9.80 | |
| F5 Networks (Hold, Wadhvani) | \$90.07 | \$7,271 | \$6,686 | -30.8% | -6.9% | -20.1% | 12.2% | 6.0% | 23.26 | 19.88 | 6.66 | 6.13 | 5.90 | 17.91 | |
| Riverbed (Hold, Sanjiv Wadhvani) | \$23.41 | \$3,638 | \$3,101 | -33.4% | 0.7% | -41.3% | -0.3% | 12.4% | 27.54 | 21.09 | 5.62 | 4.79 | 4.32 | 29.78 | |
| | | | | Average Return: | -9.3% | 1.5% | -15.1% | 10.7% | 6.9% | 20.50 | 16.97 | 2.60 | 2.26 | 2.01 | 17.84 |
| | | | | Median Return: | -17.4% | -7.2% | -19.6% | 9.7% | 6.0% | 13.67 | 11.31 | 2.18 | 1.54 | 1.54 | 8.29 |
| S&P500 | | | | | | | | | | | | | | | |
| S&P Computer Hardware | SP500 | \$1,224.58 | \$10,958,907 | N/A | -2.6% | 3.9% | -7.1% | 4.4% | 6.0% | | | | | | |
| S&P Computer Hardware | SP757 | \$862.24 | \$457,183 | N/A | 15.5% | 21.1% | 9.2% | 10.6% | 12.7% | | | | | | |
| S&P Computer Storage & Peripherals | SP761 | \$442.46 | \$81,154 | N/A | -8.6% | 2.3% | -13.9% | 5.9% | 4.4% | | | | | | |
| S&P Communications Equipment | SP749 | \$100.99 | \$235,025 | N/A | -5.9% | -8.0% | 2.5% | 5.7% | 7.0% | | | | | | |
| S&P Systems Software | SP733 | \$659.38 | \$362,867 | N/A | -1.0% | 8.6% | -0.4% | 8.5% | 5.0% | | | | | | |
| S&P IT Consulting & Services | SP721 | \$141.66 | \$294,769 | N/A | 24.1% | 30.6% | 5.3% | 16.4% | 5.1% | | | | | | |
| S&P Semiconductors | SPT74 | \$342.11 | \$244,216 | N/A | 1.0% | 13.4% | -0.7% | 7.8% | 6.0% | | | | | | |

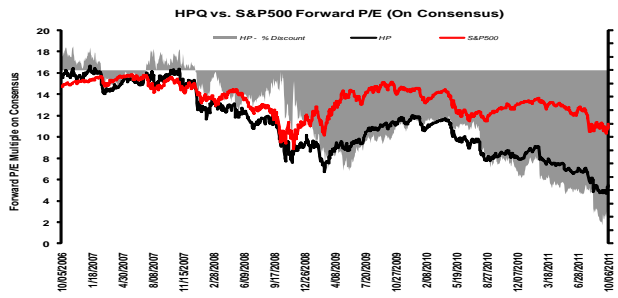
Highlighted = Stifel Buy Rated Stocks

* Forward P/E = On Next 12-Month Consensus Estimate

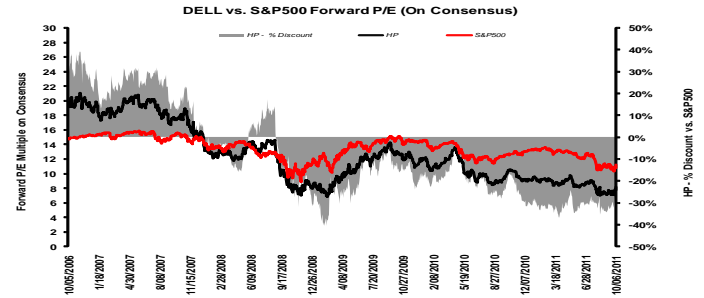
** Forward P/E on C2011, C2012 = On Stifel Estimates (Except Stocks Not Followed)

Source: FactSet, Stifel Nicolaus Estimates

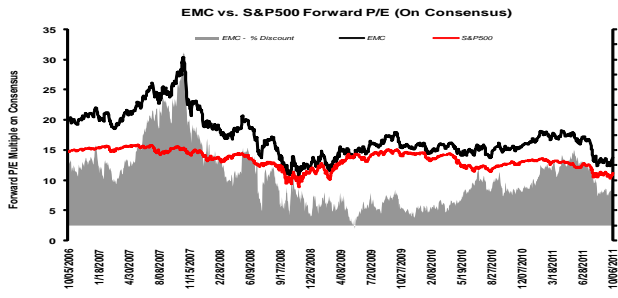
ENTERPRISE HARDWARE COVERAGE - LARGE/MID-CAP FORWARD P/E (NTM; CONSENSUS) VS. S&P500



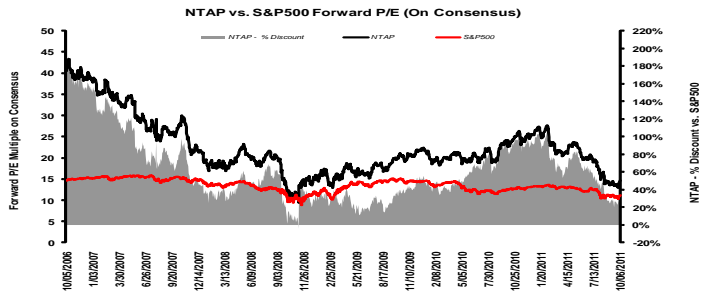
Source: FactSet and Stifel Nicolaus



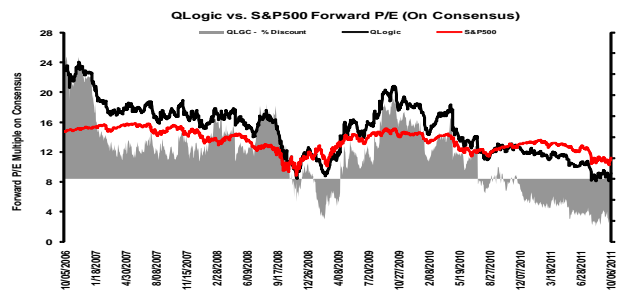
Source: FactSet and Stifel Nicolaus



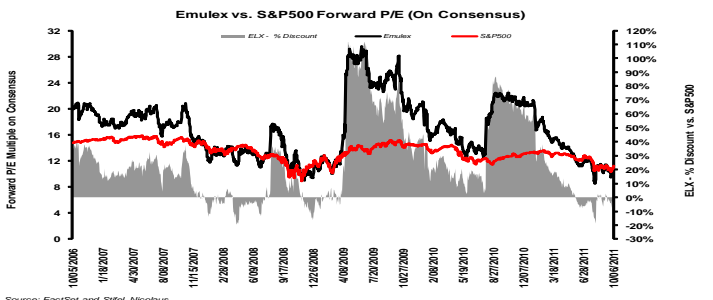
Source: FactSet and Stifel Nicolaus



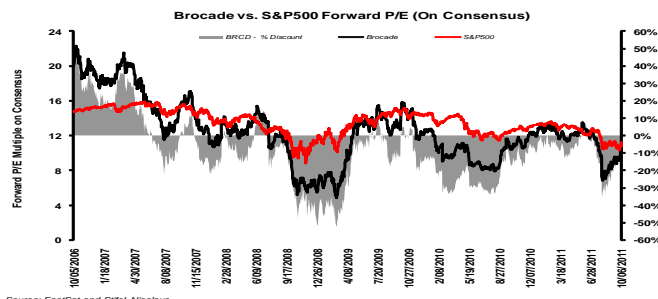
Source: FactSet and Stifel Nicolaus



Source: FactSet and Stifel Nicolaus



Source: FactSet and Stifel Nicolaus



Source: FactSet and Stifel Nicolaus

Noteworthy News/Thoughts Review

EMC Corporation

(EMC – NYSE - \$23.09– Buy)

10/14/11: EMC Executive Chuck Hollis Blogs about the Changing Storage Landscape

We found a blog written by EMC Executive, Chuck Hollis, to provide interesting insight in how EMC and others may be thinking about the storage industry going forward. Key takeaways include:

- The article points out that the storage market is about information growth, and more importantly how the industry is evolving to extract more value out of this information. In this, it notes that in IT infrastructure technologies, storage is the only persistent technology (networks nor do CPUs retain information) – arguing for the underlying secular growth trends in the storage industry.
- Storage Technologies. Mr. Hollis discusses the changing technological trends in the storage market – noting that the industry is currently in the midst of two fundamental media changes – **noting that NAND Flash is in the process of replacing both spinning disk drives and DRAM-based storage caches (though we would bet EMC would retain its view on the place of high-capacity SATA drives in the storage market going forward)**. These trends are noted to be driven by intelligence within the software – the extraction of value of these new technology transitions (Mr. Hollis notes Data Domain and EMC’s FAST technology as key examples).

In this discussion, Mr. Hollis also touches on the trend toward common/standard components (Intel-based architectures) and the industry’s move toward scale-out architectures (storage is no longer being deployed on a standalone basis). He ties in EMC’s *Project Lightning* as an industry move to how storage will now project up and into the server/compute layer and into the server hypervisor and leverage NAND Flash. **He points out that the industry will see an ongoing blurring in the construct of what is a storage array and what is a server going forward. The article points out VMware’s *soft* storage array capabilities running as a virtual machine – we believe an example of why EMC’s maintained +80% ownership of VMware makes sense.**

- **Application Demands.** Under the topic of convergence, Mr. Hollis highlights the industry’s increased requirements from the application layer and whether storage is intelligent enough under specific application requirements. Under this context, the article points out that storage is no longer an isolated discussion, but rather a discussion under the infrastructure as a whole – storage increasingly touches everything in the infrastructure.
- **Cloud.** Mr. Hollis notes that the world is going to the cloud and IT is becoming a service. EMC believes that large enterprises will utilize storage-as-a-service before too long and that EMC’s solutions are already being utilized at the service provider level for these deployments (though we would continue to question the EMC Atmos relationship at AT&T; we point out IBM’s announced OEM agreement with cloud storage provider Nirvanix, which leverages a *truly* global namespace).

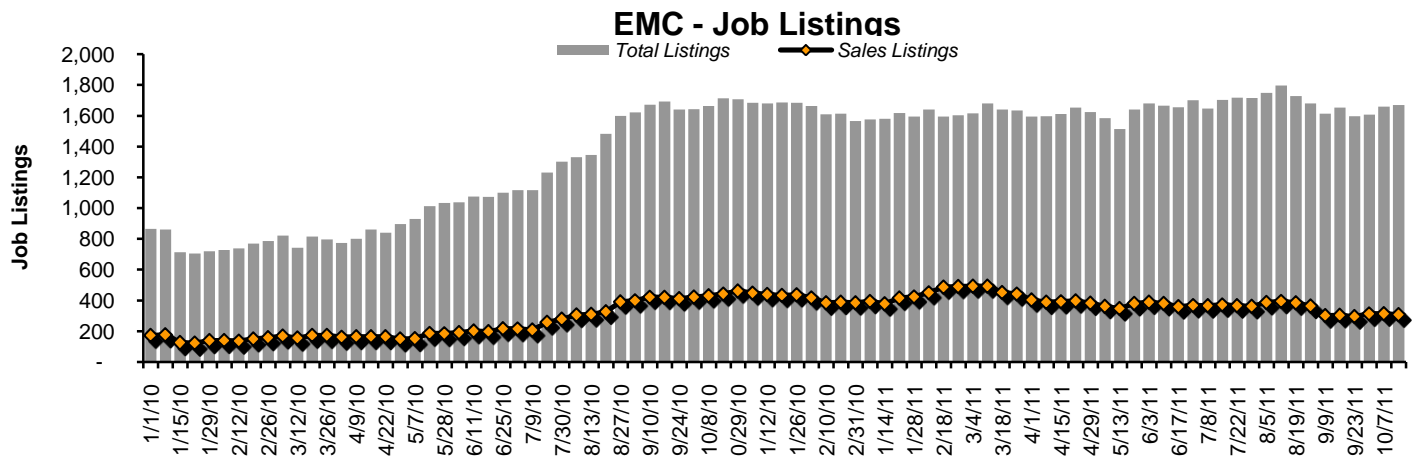
10/13/11: EMC Announces New Partner Programs and Channel-Only Products

EMC has announced the availability of the new EMC Data Domain DD160 deduplication storage system that is available exclusively through the channel, enhancements to the channel-only EMC VNXe unified storage technologies, and new programs for Velocity partners that are intended to drive market expansion. The DD160 will be sold through EMC’s Velocity Solution Provider Partners or Authorized Resellers and offers Data Domain system efficiency and scale to small enterprise data centers and remote offices. The enhancements to the EMC VNXe include new support of 100GB flash drives on the VNXe3300, and new DC-powered models that are certified to meet NEBS Level 3 requirements. In addition, the VNXe includes a new EMC Storage Integrator for application-aware storage provisioning for Windows and SharePoint and EMC is enabling companies to add memory to the VNXe3100, which now offers 8GB of system memory per controller.

The new programs for Velocity Partners include the VNXe “Try and Buy” Program that allows qualified partners to deliver VNXe products to customers at no risk and no cost for 45 days. The VNXe “Quick Ship” Program that helps partners accelerate time-to-delivery with six pre-configured VNXe solutions to ship globally within two days after order placement. Each configuration includes the base operating software and VNXe Unisphere, iSCSI, CIFS, NFS, File Deduplication, Snapshots, Thin Provisioning, and the VNXe Total Protection Suite. The last program is the “U Sell U Earn” Training Incentive Program that gives partners selling training services with the opportunity to earn free VNX readiness training for themselves.

EMC Job Listings Update

As of last week, EMC’s job listings totaled 1,670, which are up 11 openings from 1,659 last week and now up 105 from levels at the beginning of 2011. In this, there were 341 total core EMC listings, down 12 compared to last week and up from 311 at the beginning of January. In terms of total sales listings, there were 307 openings, decreasing by 7 over the same time frame and down from 385 at the beginning of the year. Total professional services listings were 169 at the end of last week, which increased 9 openings from last week, while software engineer listings totaled 271, increasing by 15 over the same time period. EMC’s Data Domain job openings came in at 1, unchanged when compared to the prior period. The Data Computing Division (Greenplum) now has 7 openings – unchanged from last week. EMC’s Isilon job openings came in at 55, unchanged from our previous check last week. The figure below highlights EMC’s job listings over the past several months.



Source: Company Data

NetApp Inc.

(NTAP – Nasdaq - \$39.23 – Buy)

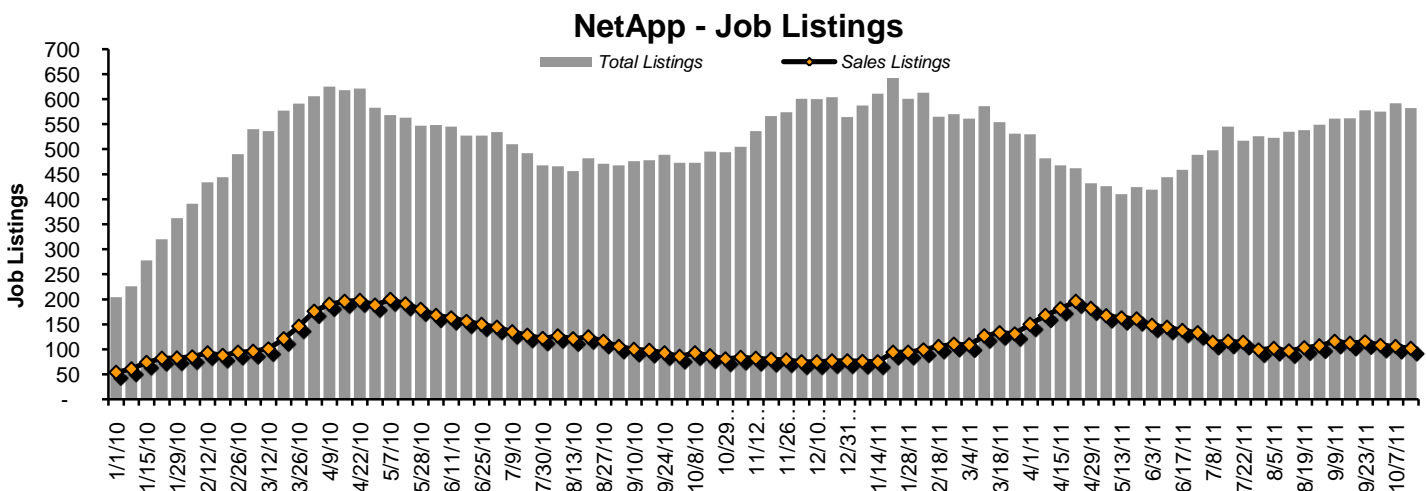
10/10/11: NetApp Already Commenced Availability of Data ONTAP 8.1

According to an article posted by *The Register*, NetApp has already quietly commenced the availability of its new Data ONTAP 8.1 operating system – focus on the company’s ability to offer a full suite of feature/functionalities in a scale-out (clustered) operating system. According to the article, the new operating system, which has been shipping since 9/22, can support both a cluster mode and traditional Data ONTAP 7G deployments (i.e., likely to leave some investors to continue to question the integration of a single operating system). Data ONTAP 8.1 is said to support up to 24 individual FAS-series nodes and V-Series nodes under a single global name space, including new support for SAN deployments (note: clustered SAN support scales up to four nodes). This compares to the scalability of up to 12 high-availability nodes under the Data ONTAP 8 operating system. The release of Data ONTAP 8.1 includes enhancements for deployment/management in virtual server environments, as well as the company’s management capabilities such as SnapMirror between clusters. *The Register* article also references sources noting that NetApp is not planning on supporting Flash incorporation in the server (e.g., competing against EMC’s *Project Lightning* or Fusion-io, OCZ, other PCIe SSD implementations). The article notes that NetApp questions the ability to move workloads across multiple servers via the incorporation of Flash in the server – noting that the company’s FlashCache has a much broader use case in enterprise customers.

Our Thought. While it appears that NetApp’s widely anticipated Data ONTAP 8.1 release may not involve a media blitz, we believe the company’s downplaying of this launch could be viewed as a positive (i.e., keeping investor expectations tempered).

NetApp Job Listings Update

NetApp’s job listings decreased by 10 opening over the prior week, continuing to illustrate a steady increase in listings over the past several weeks – job openings came in at 582 vs. 564 at the beginning of January 2011. We would point out that NetApp has guided for non-GAAP operating margin of 19% for F2012, in which the company will continue to focus on increasing sales capacity and expanding the channel and overall go-to-market strategy. The company’s current listings have 102 sales openings, which is down 4 openings compared to last week and is up 25 from 77 listings at the beginning of 2011. The company has 177 openings for software engineers, which is up 2 compared to the prior period but down 35 from 212 listings on 12/31/10. Customer support engineering listings increased to 55 from 52, which is down 15 compared to levels in the beginning of the year. The figure below highlights NetApp’s employee job listing trends over the past several months.



Source: Company Data

Hewlett-Packard**(HPQ – NYSE - \$26.11 – Hold)****10/12/11: HP Collaborates on Digital Content Distribution; Announces Instant Ink Pilot Program**

HP has announced that it is collaborating with Condé Nast, a worldwide media publishing company, on a digital content distribution medium that is designed to merge rich content and digital-to-print service. The program is called On-Demand Content and will feature print-to-home services for subscribers to schedule content delivery of specific brands (e.g. *Allure*, *Details*, *Epicurious*, *Glamour*, *Golf Digest*, *Self* and *Wired* publications) directly to the subscriber's personal printers through the use of HP's print tools.

In addition, HP plans to launch a pilot subscription service called HP Instant Ink that will automatically deliver replacement ink to customers both at home and at the office with the idea that this will result in savings for customers coupled with an increase in convenience. The plan will allow for users to receive up to 50% annual savings on ink cartridge purchases for a monthly fee (plans range from \$5.99-\$10.99/month depending on product line). The initial pilot program will begin in the northeastern U.S. at select retail locations.

10/11/11: HP PSG Spinoff Might Not Make Financial Sense

According to the *Wall Street Journal*, recent analysis performed by HP and its advisors indicate that the costs of spinning off the PSG business might outweigh the benefits. While new CEO Meg Whitman hasn't made a final decision about whether to spin off the PC business, she has noted a desire to make a decision by the end of October. The *Journal* notes that the analysis suggests that separating the PC division would significantly diminish HP's buying power with component makers, complicate its supply chain, and reduce product margins on some products.

10/10/11: HP's Memristor Memory Technology to Launch in 2013?

In an article by *The Register* it was discussed that HP, partnered with Hynix, may release its Memristor memory product, which it has been working on since 2008, in the summer of 2013. A senior executive at HP Labs, Stan Williams, was quoted at a presentation in Spain that HP plans to launch a replacement for flash memory in the summer of 2013, as well as address the SSD market. Additionally, it was noted that HP will address the DRAM market in 2014 or 2015 with the SRAM market to follow. Mr. Williams noted that HP believes that Memristor could replace NAND, mainly due to price, energy usage, read and write times, retention and endurance. The Memristor takes less than 10 nanoseconds to read a bit, while possessing endurance cycles beyond 10^{12} and retention time that is counted in years. Mr. Williams noted that it was possible to layer Memristor memory on top of processor cores, which could offer 2GB of memory per core on the processor chip. Additionally, he noted that this could put HP 20 years ahead of Moore's Law. HP currently has over 500 patents around the Memristor since 2008.

Dell, Inc.**(DELL – Nasdaq - \$16.62 – Buy)****10/14/11: Dell Comments on Modular Data Centers and Flash-Enhanced Servers**

Last week at Dell World, Michael Dell gave a keynote speech on the topic of modular data centers and flash-enhanced servers. Mr. Dell noted that Dell believes it delivers over half of the world's modular data centers, highlighted that Sun's Blackbox opened the market for this business. Mr. Dell highlighted that next year Dell's PowerEdge R910 will be more powerful than the current model, equipped with 2TB of main memory. He additionally noted that the 12th generation PowerEdges next year will have more IO bandwidth and faster processors as well as flash storage directly in the server, which Dell refers to as tier zero. He stated that the use of this flash could equate to speeds of 60x compared to the current PowerEdge server. Mr. Dell also spoke of Dell's Fluid Data Architecture extending across EqualLogic and Compellent, including tiering extended from HDD and flash in the array into the server, which would be related to new technology from Dell's RNA Networks acquisition. Mr. Dell commented on data center racks, specifically single racks that could contain 1,024 cores linked by 10GbitE to a Force 10 switch. He further noted that the rack would contain 40TB of DRAM and 40TB of flash.

10/12/11: Dell Launches First Ocarina Data Compression Product

In addition to its DX6000 storage product line, Dell announced the launch of its first Ocarina data compression product. As a reminder, Dell acquired Ocarina in 2010 for an undisclosed amount. The DX6000G server is a clusterable storage compression node that works with DX6000 storage, and uses software from Ocarina. This software is designed to look at files and compress them by removing duplicated and unwanted information, and then recodes them in a more efficient manner. The DX6000G works with existing DX6000 environments through the DX6000 interface, using metadata collected by those systems. Additionally, users can specify policy-based compression, optimized either for performance or capacity. There can also be single or multiple cluster nodes. The DX6000Gs contains up to 8TB of disk capacity for scratch files using SATA or nearline SAS disks. The file reduction capabilities for Microsoft Office files are up to 80% and up to 92% for XML files, while DPX files are up to 58%. The DX6000G has a starting price of \$25,000 and will be available on October 18th.

In addition to this announcement, Dell noted that Compellent storage arrays and Force 10 networking products will be made available in existing vStart configurations starting in 2012. The vStart configurations are pre-sized, pre-racked, pre-wired, and pre-tested configurations for virtual environments.

10/11/11: Survey Indicates that Dell Could Benefit from Ongoing Issues at HP

Dell issued a press release last week that highlighted a survey administered by Technology Business Research (TBR) which indicated that a majority of respondents to a survey of 130 HP customers in the U.S. with at least 500 employees have become concerned with the direction that HP is taking and noted that Dell would most likely be their provider of choice if they decide to make a change. The survey noted that 46% of respondents are now less likely to purchase HP products and services and that this number increased to 53% for companies with 1,000-4,999 employees. In addition, 47% of respondents using HP PCs or mobile devices and 23% of those using HP servers indicated that they were investigating alternatives to HP.

10/11/11: Dell Extends Optimized Deployment Services through Dell KACE and SCCM Customers

Dell has announced that it is now providing new options to customers in how they choose to migrate and deploy their PC environments. Any organization that uses laptops, desktops, and associated operating systems can now use Dell Optimized Deployment services in addition to Dell KACE and Microsoft System Center Configuration Manager (SCCM). Dell notes that the images created through the Dell KACE K2000 Appliance and SCCM are not tied to a specific system, which allows customers to transition from HP, Lenovo, or Acer to Dell more easily. The K2000 Deployment Appliance streamlines image creation and maintenance by eliminating manual steps from the deployment process while the Optimized Deployment services reduce the amount of technician labor and complex logistics required for PC and OS deployments. Dell notes that the new service can save customers up to 55% on IT deployment costs while also minimizing end-user disruption.

CommVault Systems

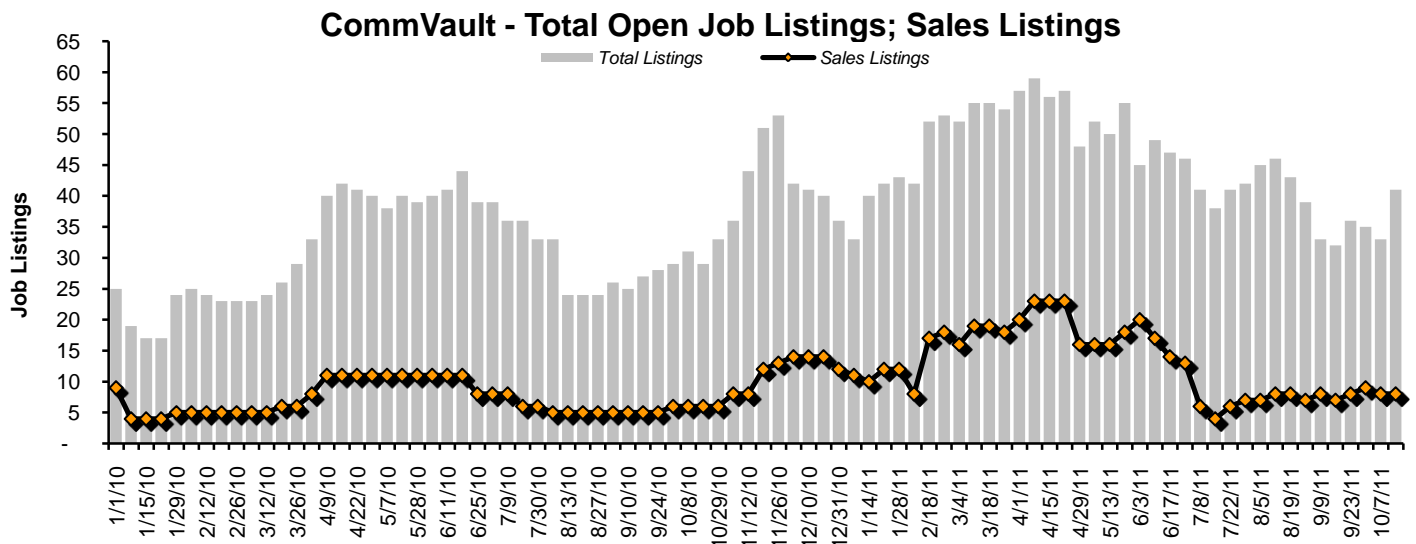
(CVLT – Nasdaq - \$41.80 – Hold)

10/13/11: CommVault Integrates SnapProtect Technology with Dell Compellent Storage Arrays

At last week’s Dell World conference, CommVault announced new API integration between its SnapProtect snapshot technology and Dell Compellent storage arrays. Customers now have the ability to combine Dell Compellent pointer-based snapshots called Replays with Simpana software from CommVault under a single end-to-end protection policy and management interface without requiring customization or scripting to allow for improved SLA delivery, reduced internal IT costs, and the elimination of production backup windows. As a reminder, the SnapProtect technology is designed to simplify and automate data protection as well as improve rapid recovery operations by integrating data protection policies to control the Replay technology within Dell Compellent SANs. The snapshots provide high-speed recovery in order to meet service-level commitments while also automatically tiering secondary retention copies to lower cost storage pools in enterprise IT environments. This integration also brings full snapshot support for Dell’s entire family of storage arrays, including the EqualLogic PS Series, Dell PowerVault MD storage arrays, and DL Backup to Disk Appliance.

CommVault Job Listings Update

CommVault’s total job listings increased by 8 openings over the past week when compared to our prior checks. In this, total listings were at 41 exiting last week, up 5 from the beginning of 2011 (total listings ranged from 45-59 over C2Q11). In this, the company has 8 sales openings, 4 openings in professional services, no openings in technical services, and 4 listings in technical support. This compares to 9, 4, 0, and 2 openings last week, respectively. We would point out that management noted on its F1Q12 (June 2011) earnings call that the company would continue to add headcount going forward, most likely as it pertains to its enterprise sales force as well as some in marketing. The figure below highlights CommVault’s job listing trends over the past several months.



Source: Company Data

QLogic Corporation

(QLGC – Nasdaq - \$13.90 – Buy)

10/11/11: NEC Selects QLogic 3GCNA Technology for 10GbE iSCSI Connectivity

QLogic has announced that its 8200 series 3rd generation 10GbE CAN is now shipping as an embedded target controller solution in NEC Storage M Series arrays. The company notes that its 3GCNA single-chip based products allow customers to transition from 1GbE iSCSI to 10GbE while still preserving their existing IT environment.

Emulex Corporation

(ELX – NYSE - \$7.02 – Hold)

10/13/11: Emulex Required to Pay \$387,922 in Patent Trial with Broadcom; Some Modules Infringe One Patent

Emulex has announced the completion of the patent infringement lawsuit filed by Broadcom in which the resulting partial verdict determined that Emulex is to pay \$387,922 to Broadcom. This award was based on U.S. sales by Emulex from the filing of the original lawsuit (9/14/09) through 8/27/11. Exiting the June 2011 quarter, Emulex had \$183.35 million in cash on hand (no debt), of which this award represents 0.2%. Emulex notes that although the trial was completed, only a partial verdict was reached involving two patents out of the six patents included in the trial (Broadcom had originally asserted 12 different U.S. patents against Emulex, but by the time of trial, only 6 remained due to Emulex’s defense prior to the trial). Of these two, the jury awarded \$387,922 in damages related to one patent and reached a unanimous verdict of non-infringement on another patent relating to Emulex FC switch products. A mistrial was declared concerning the remaining four patents for which no unanimous verdict was reached. The Broadcom lawsuit only involves U.S. patents and not worldwide patents. Emulex did note that it intends to continue to defend its products, including a potential appeal of the trial verdict.

As a reminder, this trial focused on serializer/deserializer (SerDes) modules, which Emulex does not design but obtains from several different suppliers (e.g. Applied Micro Circuits, LSI, Renesas, and Toshiba). Emulex notes in its press release that Broadcom SerDes patents are not specific to Ethernet, Fibre Channel or any other protocol and maintains that SerDes modules in Emulex products are commodity designs used in many other products by many other companies.

10/10/11: Emulex Introduces World’s Fastest Fibre Channel (FC) Adapters

Emulex has announced its new 16Gbps FC HBAs, which is the company’s 9th generation of FC adapters. These HBAs can deliver over 1,000,000 IOPS on a single port (5x the IOPS and 2x the data throughput of 8Gbps FC) and are based on the Emulex Engine XE201 I/O Controller (IOC), which is the industry’s first and only quad-port converged fabric controller that supports 10GbE, 16Gbps FC, and up to 40GbE-based network convergence. It offers vScale workload-based performance and scalability with an eight-core architecture that supports pooling of resources for dynamic allocation to multiple protocols. In addition, it supports vPath virtual I/O support for emerging I/O virtualization standards that allow data to be forwarded between collocated VMs while ensuring I/O traffic isolation.

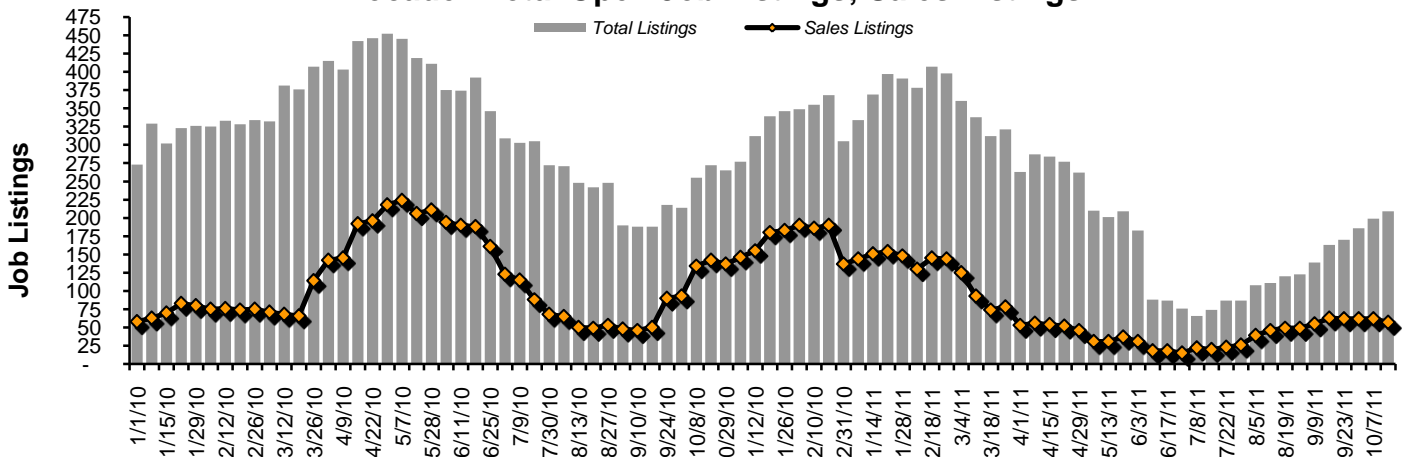
Brocade Communications Systems

(BRCD – Nasdaq - \$4.51 – Hold)

Brocade Job Listings Update

As of last week, Brocade’s overall job listings totaled 209, which were up 10 from last week and are now down 96 openings from levels at the beginning of the year. In this, there were 57 total sales listings, which was equal to the number of openings to last week. We would note that after seeing a steady increase in job openings from September 2010 through February 2011, Brocade’s overall job openings had been on a steady decline, but have rebounded over the past month and a half. We would point out that management did note on its April 2011 earnings call that it had essentially completed its investment in the sales force at that time, but on the July 2011 earnings call noted that it would continue to make some investments going forward. Services openings remained flat when compared to levels in the prior week, while support listings increased by 2 openings compared to last week’s level of 10 openings. Engineering listings came in at 55 openings, which were up 3 openings from last week. The figure below highlights Brocade’s job listings over the past several months.

Brocade - Total Open Job Listings; Sales Listings



Source: Company Data

Western Digital**(WDC – NYSE - \$28.34 – Buy)****10/12/11: WD Provides Update on Thailand Operations; Notes Constrained Production**

Western Digital reported it expects its HDD production levels to be constrained in the current (December) quarter due to the flooding in Thailand. The facilities are operational; however, production has been temporarily suspended to protect employees and equipment. Western Digital operates in two facilities in Thailand - Navanakorn, Thailand (~226,000 sq. feet), which it uses for assembly of hard drives and HSAs, and facilities in Bang Pa-In, Thailand (~1,031,000 sq. feet), which it uses for slider fabrication, the assembly of hard drives, HGAs and HSAs, and research and development. Both of these facilities appear to be close to the impacted areas. Western Digital reports that it had shipped approximately 53.8 million HDDs from its facilities in Thailand and Malaysia during the June quarter, **of which approximately 60% were manufactured in its Thailand operations.** The company also notes that its Thailand facility sources much of the key component supplies for its HDD production. As expected, WD notes that the extent of the impact cannot be fully determined at this point; we have historically seen WD execute very effectively through these types of disruptions.

As a reminder, HGST lists two facilities in Thailand – Prachinburi, Thailand where it focuses on server, mobile, desktop, and CEO HDD and HSA manufacturing, and Chonburi, Thailand where it manufactures mobile HDD and HSAs. Both of these facilities appear to be fairly distanced from the impacted area.

Seagate Technologies**(STX – Nasdaq - \$11.80 – Hold)****10/13/11: Seagate to Release 5TB Drive?**

Last week in an article by *The Register*, it was discussed that Seagate could possibly release a 5TB drive in the next 3 months. The article references a video filmed at a recent technology event in Dubai. The video conducts an interview with a Seagate channel sales manager for the Middle East and Africa regions. In the video, the sales representative discusses the ability of each platter to hold 1TB per disk. He further states that now a drive can hold up to 5 disks, which would equate to a 5TB disk. He then begins to comment on Seagate's R&D spending, noting that Seagate invests a lot in R&D to be first to market with its products. He further noted that within three months a 5TB disk will be on the market. To note, Seagate currently has a Constellation ES.2 3.5 inch drive that holds 3TB on its five platters, in addition to a similar 5-platter 3TB Barracuda XT.

10/13/11: Seagate Provides Update on Thailand Flooding

Seagate has also now reported on the impact to its own operations in Thailand given the reports of facility closures impacting industry supply-chain/production. Seagate, as we have previously reported, operates two facilities in Thailand - Seagate Teparuk (closest to impacted areas; ~362,028 sq. feet) and the other being Seagate Korat (appears to be farther away from impacted area; ~1,162,846 sq. feet); both focused on head stack and head gimbal assemblies (HGAs). The company has reported that all of its factories in Thailand are currently operational and that there are no logistical issues with employees reaching these facilities at this point. However, as expected, supply chain disruption in certain components (most notably in HDD spindle motors and upstream component suppliers) will be constrained. The company states that the impact of these fluid issues is unclear at this point in time – though noting that it would expect HDD supply to be constrained through the December quarter.

While it is clearly hard to gauge the impact of this flooding, in speaking with many investors and based on our own pure guesstimate, we believe expectations for 4Q11 shipment TAM guide could now be in the ~165-170 million range and that issues lingering beyond two weeks could put downward pressure on production/shipment expectations into the ~160 million range (note: using ~180M/qtr production levels two weeks would equate to ~20-25 million drives). We estimate ~4 weeks of total distribution channel inventory and would assume ~2 weeks of OEM JiT inventory levels – from which a burn-down of inventory could be viewed as a net-positive for the HDD industry.

10/13/11: Seagate Announces New GoFlex 3TB Drive

Last week, Seagate announced the release of the newest addition to its GoFlex line of HDDs. This new drive, called the GoFlex Cinema, allows for connection to home entertainment systems. Its capacity is up to 3TB in size. Additionally, it is equipped with an HDMI, composite, and S/ PDIF hookups. Currently, the GoFlex Cinema is available in Europe for €99 (\$136) for the 1TB version and €179 (\$246) for the 3TB version. Currently, there is no information regarding its release in the U.S.

Xyratex, Inc.**(XRTX – Nasdaq - \$12.49 – Buy)****10/12/11: Xyratex Elects Jonathan Brooks as Chairman of Board of Directors**

Last week, Xyratex announced that its current chairman, Andrew Sukawaty, will retire from his position on December 1, 2011. Mr. Sukawaty has held the position of chairman since October 2004. Additionally, Xyratex named Jonathan Brooks as the new Chairman of the Board. Mr. Brooks has been a director of Xyratex since May 2004. He is also currently a director of e2v Technologies plc, which develops sensor technology, and Aveva Group plc, a software provider to the plant, power and marine industries. Additionally, Mr. Brooks is Chairman of Picochip Inc., a venture capital backed company developing semiconductor solutions for wireless applications, and a director of Skrill Holdings plc, which provides e-wallet platform and payment systems on the internet. Prior to his time at Xyratex he was CFO and a director at ARM Holdings plc.

OCZ Technology Group, Inc.**(OCZ – Nasdaq - \$5.30 – Buy)**

10/13/11: OCZ 10-Q Tidbits – U.S. and Europe SSD Growth, Inventory, Purchase Commitments, and More

Last week, OCZ published its 10-Q for the August quarter from which we highlight the few following tidbits:

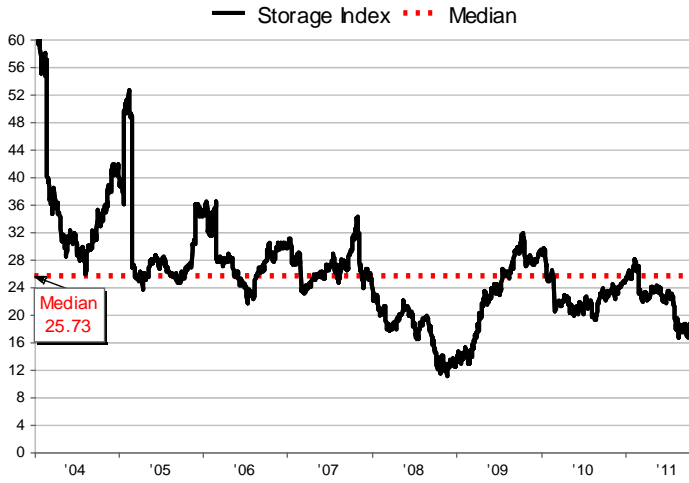
- **Top Ten Largest Customers.** OCZ's *initial* 10-Q filing disclosed that its ten largest customers had accounted for ~64% of total revenue during the six months ending August; **however, the company did file an amended 10-Q in which this was corrected to a ~42% contribution for both the three and six month periods ending August.** The company's filing does not disclose whether the company had a greater than 10% customer during the August quarter.
- **Geographical Disclosure (Incremental – U.S. and Germany Disclosures).** OCZ's 10-Q provided a more detailed breakdown of revenue by geography, including: (1) **United States** – reported revenue totaled \$22.619 million, up 33% yr/yr and 29% sequentially. The company reported that its SSD revenue in the U.S. was up 141% yr/yr for the August quarter (versus 187% reported yr/yr growth in the May quarter; reported 159% yr/yr SSD revenue growth for the six months ending August). (2) **Canada** - disclosed \$3.276 million in revenue, implying ~56% yr/yr growth and roughly flat sequentially. (3) **Germany** – revenue totaled \$16.226 million, up 254% yr/yr and up 5% sequentially. (4) **Other EMEA** – revenue totaled \$25.615 million, up 158% yr/yr and roughly flat sequentially. The company reported total EMEA SSD revenue growth at +338% yr/yr for the August quarter – primarily driven by Germany. SSDs accounted for ~52% of total EMEA revenue vs. 42% in the year-ago quarter. Total EMEA SSD revenue grew 630% yr/yr in the prior quarter. (5) **Rest-of-World** – as previously disclosed, ROW revenue totaled \$10.718 million, down from \$11.949 million in the prior quarter.
- **Inventory Balance – Increase Entirely Driven by Raw Materials (NAND Flash).** OCZ's filing discloses the company's inventory balance breakdown exiting the August quarter – (1) **Raw Materials (primarily NAND Flash)** - \$47.450 million, up from \$18.332 million exiting the prior quarter. The company also reports that the inventory increase relates to a strategic initiative to ensure proper continuity of supply of key components (NAND Flash) to prepare for current and potential future increases in sales. (2) **Work-in-Process** – inventory balance stood at \$10.296 million exiting the August quarter, down from \$13.287 million exiting the prior quarter. (3) **Finished Goods** - \$6.062 million exiting the August quarter, down from \$9.762 million exiting the prior quarter. (4) **Inventory Reserve** – totaled \$4.805 million exiting the August quarter, down from \$6.742 million exiting the prior quarter. The company's filing discloses the ~\$2.0 million in increased inventory reserves taken over the past six months related to significant R&D prototyping effort.
- **Purchase Commitments.** OCZ's filing also discloses that the company exited the August quarter with approximately \$30 million in outstanding non-cancelable purchase commitments with certain suppliers. This is up significantly from a \$7.4 million disclosed balance exiting the May quarter. **We believe this relates to a continuity of supply agreement with a key controller supplier.**
- **Warranty Expense.** OCZ's filing discloses the company's warranty accrual during the August quarter at ~\$278,000, up from \$104,000 accrued during the May quarter. Warranty costs incurred during the August quarter stood at approximately \$249,000, up from approximately \$79,000 incurred costs exiting the prior quarter. The company's total ending warranty liability balance stood at ~\$621,000 exiting the August quarter, up from ~\$592,000 exiting the prior quarter.
- **Other.** (1) The company's 10-Q discloses that all standby letters of credit related to securing credit lines for inventory purchases were irrevocably released as of the end of August (vs. a maximum potential payment of \$1.4 million secured by restricted cash exiting the May quarter). (2) The company's filing discloses that on October 6, 2011, the company signed a five-year operating lease commencing on November 15, 2011 related to a new manufacturing facility in Taiwan – focusing on further production expansion (part of the 2x production capacity increase the company has discussed to be completed in the current quarter). (3) The company's filing disclosed that its diversified global distribution channel current supports the sale of approximately 200 products (down from prior disclosures of over 250 products) to over 400 customers. (4) OCZ's filing reiterates the company's acquisition of an engineering team from PLX Technology (no financial terms disclosed; ~40 engineers), which is expected to be completed by the end of October.

10/12/11: OCZ Announces SSD with Power Fail Protection

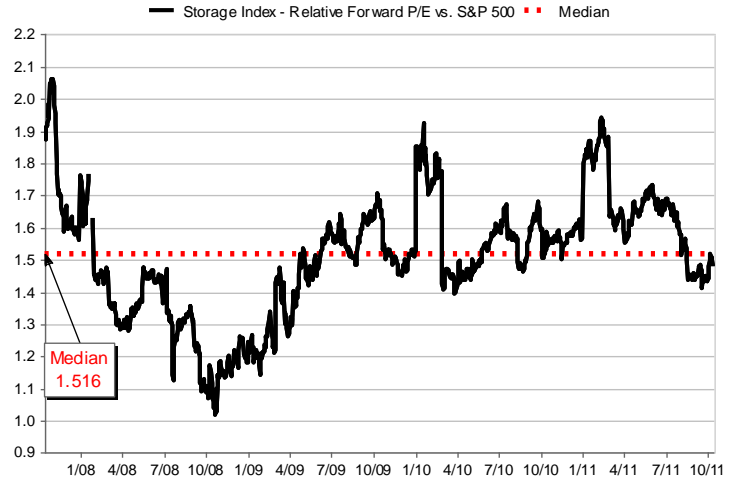
Last week, OCZ announced that it had upgraded its Deneva Series, making it available in MO-297 format with complete power fail protection. This new update is designed to deliver performance solutions for a persistent data protected cache, metadata storage unit, or high end-storage device. Additionally, it is designed to meet the new JEDEC MO-297 form factor of 39mm x 54mm and is just 4mm thick. It is available in capacities up to 128GB. The Deneva MO0297 allows for reduced lookup times in metadata storage, which results in improved performance as well as a persistent cache in applications where data path protection is mandatory. The SSD is currently in production and available to customers for sampling.

Enterprise Storage Industry Indices

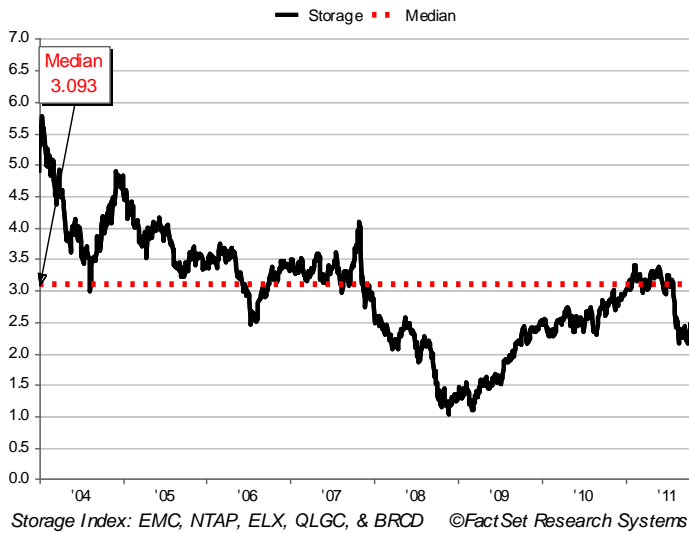
Storage Index - Forward P/E - 2004 - Present



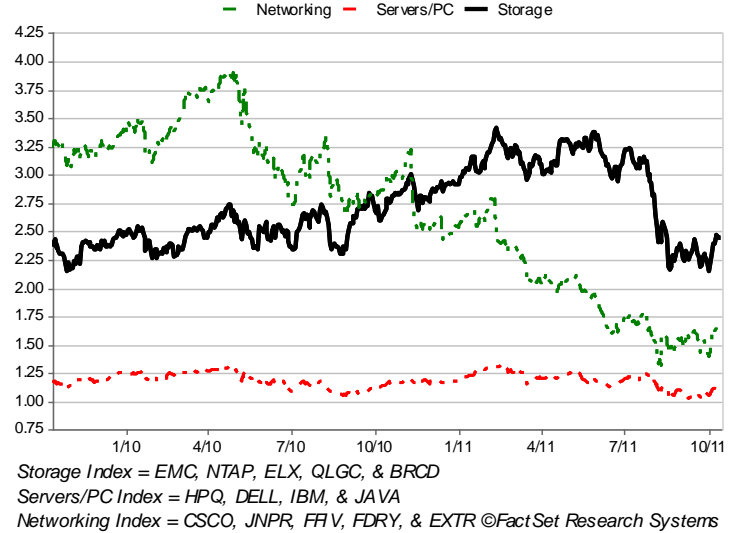
Storage Index - Relative Forward P/E vs. S&P500



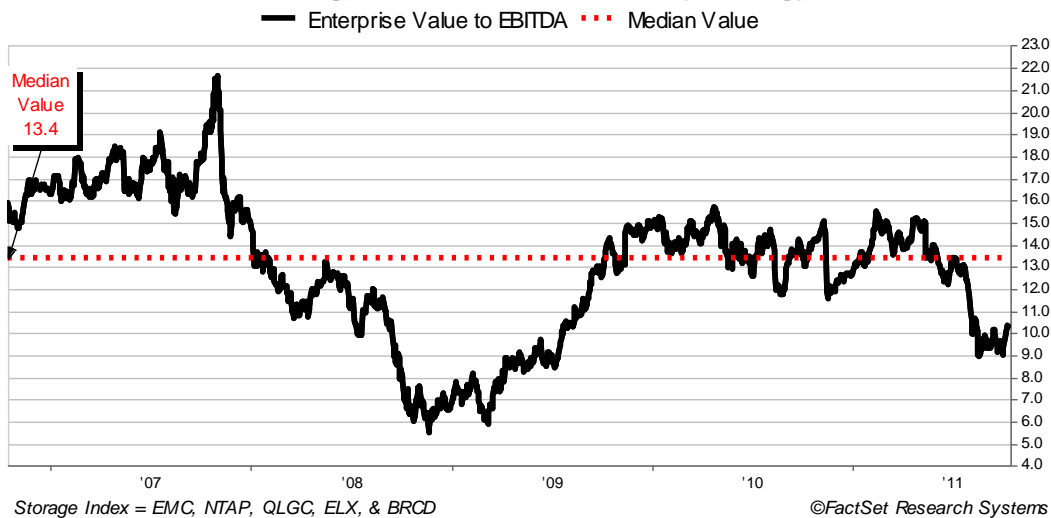
Storage Index: EV-to-Sales - 2004 - Present



Storage, Servers/PC, & Networking Index - EV-to-Sales - 2-Years



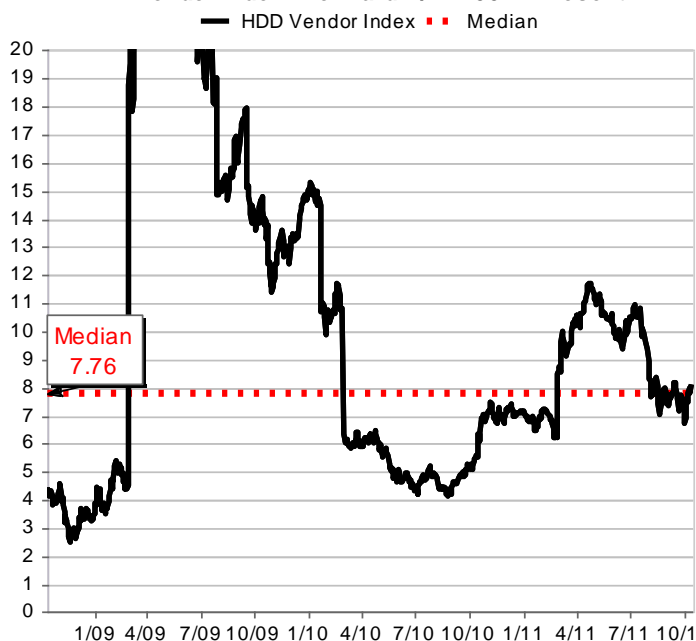
Storage Index - EV-to-EBITDA (Trailing)



Source for All Charts: FactSet and Stifel Nicolaus
Past performance should not and cannot be used as an indicator of future performance

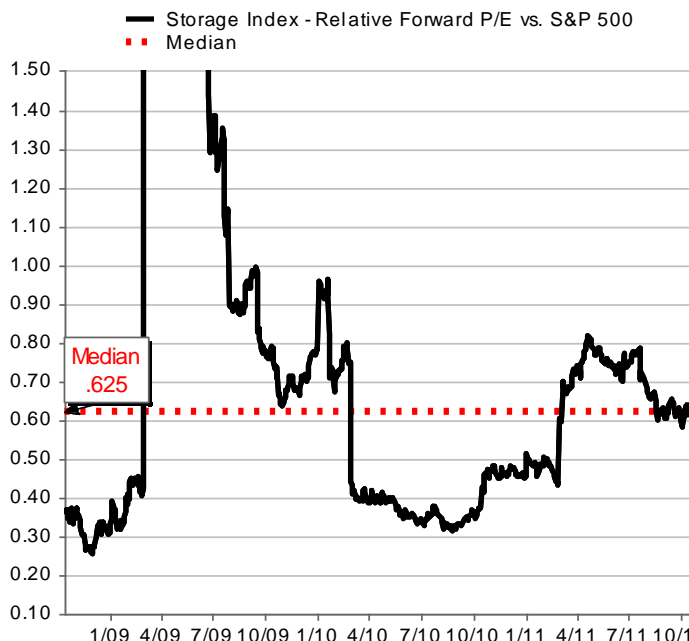
Hard Disk Drive Industry Indices

HDD Vendor Index - Forward P/E - 2004 - Present



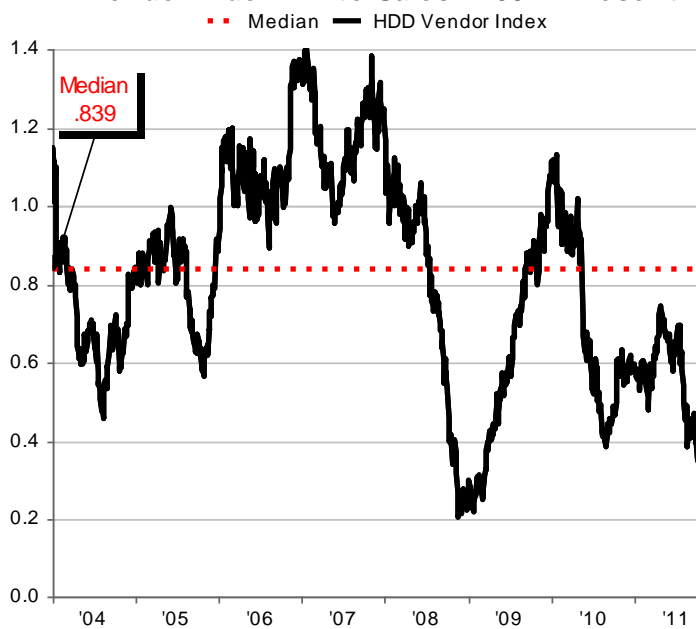
Storage Index: STX, WDC, & MXO (legacy)

HDD Vendor Index - Relative Forward P/E vs. S&P500



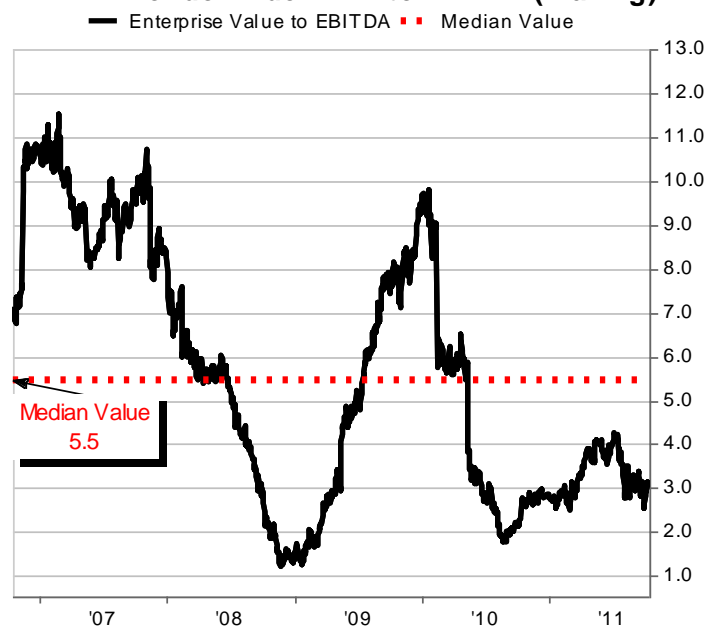
Storage Index: STX, WDC, & MXO (legacy)

HDD Vendor Index: EV-to-Sales - 2004 - Present



Storage Index: STX, WDC, & MXO (legacy)

HDD Vendor Index - EV-to-EBITDA (Trailing)



HDD Vendor Index = STX, WDC, & MXO (legacy)

Source for All Charts: FactSet and Stifel Nicolaus

Past performance should not and cannot be used as an indicator of future performance

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