



Equity Research

October 31, 2007

Hitachi Storage Review

High End Strength Vs. EMC; Positive On CQ4 2007
HDD Segment Continues To Underperform STX and WDC; Profits Coming?

Sector Rating: Hard Disk Drives, Market Weight

Sector Rating: Enterprise Storage, Overweight

Company Name	Stock Rating	Price 10/31/07	FY CASH EPS 2007E	FY P/CASH EPS 2008E	FY P/CASH EPS 2007	FY P/CASH EPS 2008
Hard Disk Drives						
Seagate Technology Inc. (STX)	1	\$27.74	\$1.47 A	\$2.65	18.9x	10.5x
Western Digital Corp. (WDC)	2V	25.75	1.94 A	2.01	13.3x	12.8x
Enterprise Storage						
Brocade Communication Systems Inc.	2V	9.50	0.56	0.60	17.0x	15.8x
EMC Corp. (EMC)	1	25.29	0.75	0.87	33.7x	29.1x
Emulex Corp. (ELX)	1	21.34	1.13 A	1.20	18.9x	17.8x
Isilon Systems Inc. (ISLN)	2V	5.50	(0.23)	(0.13)	NM	NM
Network Appliance Inc. (NTAP)	1V	31.00	1.11 A	1.22	27.9x	25.4x
QLogic Corp. (QLGC)	2	15.46	0.95 A	0.88	16.3x	17.6x
Xyratex Ltd. (XRTX)	2	16.87	1.15	1.98	14.7x	8.5x

Source: Company data and WCM, LLC estimates NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful
1 = Outperform, 2 = Market Perform, 3 = Underperform, V = Volatile

- Hitachi Enterprise Storage (EMC Implications)** - Total revenue of 91 billion Yen, up 7.1% yr/yr and 9.6% sequentially (vs. EMC Information Storage revenue up 8% yr/yr). Our conversations suggested that the company continues to see a ramp in its new USP-V platform (integrates Thin Provisioning, as well as incorporates a back-end switched architecture), and ongoing relatively healthy growth in the midrange market (though we did see some refreshes during CQ3 2007). Hitachi did report strong double-digit sequential growth in its high-end USP sales with an expanding installed base from 6,000 controllers to 7,300 controllers exiting CQ3 2007. While we believe Hitachi's results provide ongoing comfort in EMC's competitive positioning, we believe high-end momentum warrants monitoring as it appears Hitachi did take some modest share during CQ3 2007.
- Stable Pricing; Healthy Backlog Trends** - Hitachi noted that it had seen stable pricing dynamics in the storage market in CQ3 2007; has not seen a meaningful slowdown related to recent macro-related concerns. In fact, Hitachi was upbeat with regard to its backlog build and overall spending trends looking into CQ4 2007.
- Hitachi HDD Operations - PROFITABILITY COMING?** - Revenue growth of 9% yr/yr to \$1.45 billion (+19% seq.) continues to underperform yr/yr growth trends at Seagate and W. Digital. Operating loss is the key focus - improving to a loss of only \$58 million, versus \$150M and \$174M losses in CQ1 and CQ2 2007, respectively. Hitachi is guiding to operating profitability in CQ4 2007, a positive for the overall HDD industry (providing some comfort with regard to rational pricing trends). HGST total shipments of 24.3 million units grew 22% yr/yr, which compares to Seagate shipments up 20.5% yr/yr and our estimate of 30% yr/yr growth out of Western Digital. HGST did report healthy shipment growth of +14% yr/yr (+25% seq.) in 1.8"/2.5" HDDs (most notably in notebook PCs), as well as 44% yr/yr growth in 3.5" HDD shipments (+21% seq.) - implies another quarter of modest share expansion for Seagate in 2.5" drives; stable share trends vs. Seagate in desktop drives on a sequential basis.

Enterprise Hardware

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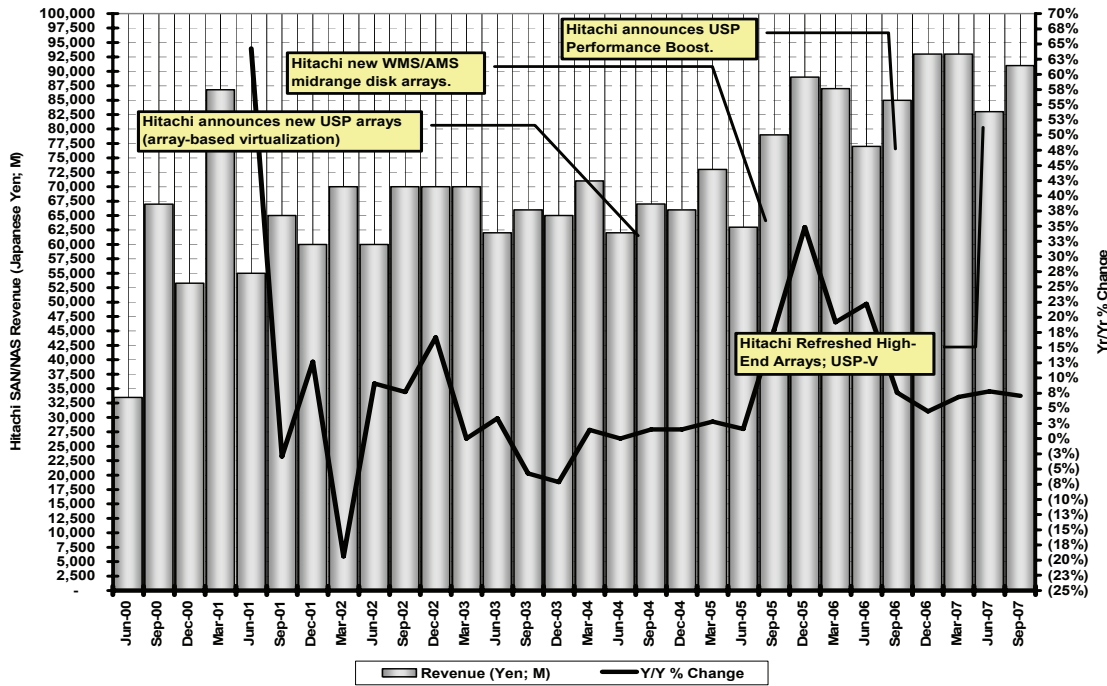
Discussion

Below we highlight Hitachi's reported storage results for CQ3 2007 (Storage Solutions, or Enterprise Storage, and Hard Disk Drives), which has implications for our coverage in the Enterprise Storage space (most notably EMC) and Hard Disk Drive vendors such as Seagate and Western Digital.

Storage Solutions (Hitachi Data Systems + Hitachi Storage Japan)

Hitachi reported revenue of ¥91 billion, which was up 7% yr/yr and up 10% sequentially (see Figure 1). Using the company's conversion ratio of 115 ¥/US\$, this equates to revenue of approximately \$790 million, or up 9% yr/yr. This compares to EMC reporting total revenue growth of 7.5% yr/yr and 3.8% sequentially within its Information Storage segment (hardware, software, and services). EMC's overall revenue grew 17% yr/yr (+12% yr/yr excluding VMware) during CQ3 2007. IBM, on the other hand, reported a decline of 3% yr/yr in its disk storage business during CQ3 2007, in which it had noted particular weakness in its midrange solutions and some relative strength in the high-end products. Therefore, it appears that both EMC and Hitachi reported similar growth in their enterprise storage businesses, while IBM likely lost some share (although we would expect share gains during CQ4 2007 given typical year-end growth trends at IBM).

Figure 1: Hitachi Storage Solutions – Total Revenue (¥;B) versus Yr/Yr % Change

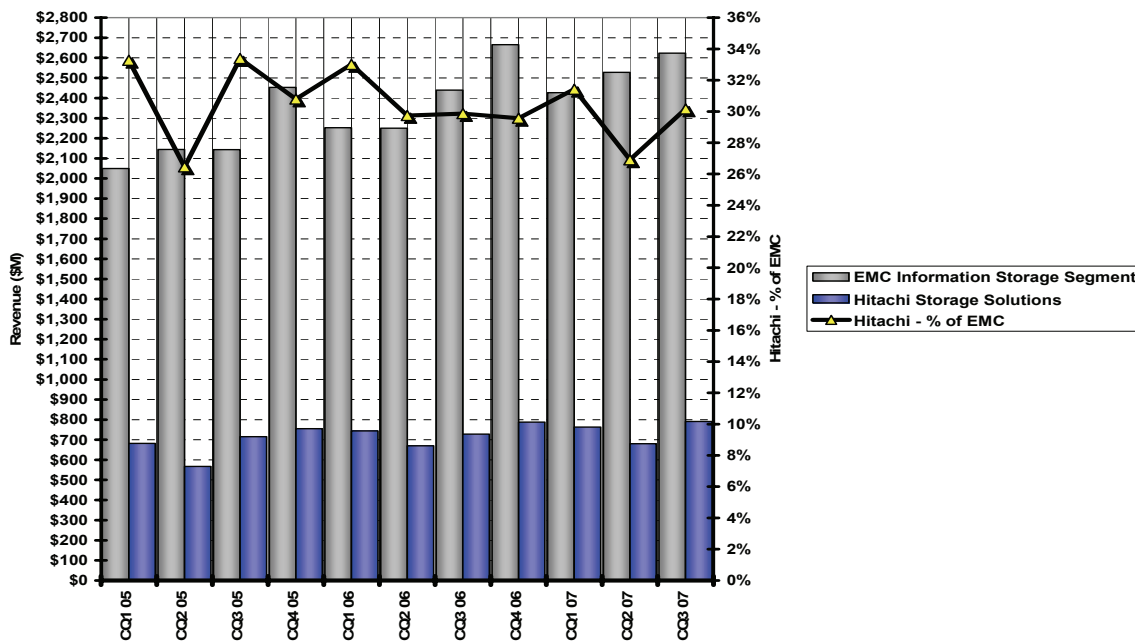


Source: Hitachi; Wachovia Capital Markets, LLC

Although the company does not quantify the operating profitability trends in its storage solutions segment, Hitachi Ltd's press release does state that hardware operating margin did benefit from healthy earnings in the company's disk array subsystems. In the past, Hitachi has guided its storage solution operating margin to be in the 8% range (versus EMC in the low/mid-teens range).

Storage Solutions Guidance – With regard to guidance, Hitachi is expecting its 2H'F2007 (ending March 2008) storage solutions revenue to be approximately ¥186 billion, flat yr/yr, which equates to total F2007 revenue to be ¥360 billion, up 3% yr/yr (likely conservative, according to our conversations). This compares to our estimate of EMC's total revenue growing approximately 17% yr/yr over this comparable timeframe; or seeing approximately 10% yr/yr growth within the company's Information Storage segment. Figure 2 provides a comparison between EMC's Information Storage segment revenue and Hitachi's storage solutions revenue (US\$) over the past several quarters.

Figure 2: Hitachi Storage Solutions versus EMC Information Storage Segment Revenue (US\$)



Source: Hitachi; EMC; Wachovia Capital Markets, LLC

With this, we would highlight the following thoughts with regard to Hitachi's storage solutions results:

- Geographical Growth** – Hitachi reported high-double digit growth in its Asia-Pac revenue, followed by double-digit growth in EMEA and high-single digit yr/yr revenue growth in the Americas. With regard to recent concerns over economic-related slowdowns in spending, the company stated that it has not seen any meaningful impact, and in fact, it believes it has a very strong backlog looking into Q4 2007.
- High-End Growth** – Hitachi reported that it had seen solid double-digit sequential growth in its high-end USP-series solutions during Q3 2007. On a yr/yr basis, high-end revenue grew in the low-single digit range. This compares to our estimate of EMC's Symmetrix revenue growing approximately 6% sequentially, or down 3% on a yr/yr basis. This implies that Hitachi is seeing a healthy ramp in its new USP-V series solutions, which commenced shipments in May with enhanced performance and the integration of Thin-Provisioning (a feature EMC has stated it would add to its Symmetrix and CLARiiON arrays in early 2008; already available on the Celerra NAS solutions). The company also noted that it currently has an installed base of approximately 7,300 USP-series controllers in the market, up from 6,000 exiting the June 2007 quarter. Additionally, the company sees more than 50% of these solutions utilizing the UVM (Universal Volume Manager; Virtualization) software, up from less than 50% a few quarters ago. In this, the company estimates that 25-30% of these solutions provide virtualization in heterogeneous environments. It does appear that Hitachi gained some share in the high-end disk array market during Q3 2007; an interesting trend to monitor as EMC looks to fully ramp its new DMX-4 solutions in the current quarter (commenced shipments in August).
- Midrange Growth** – Hitachi also announced that it had seen strong double digit growth on both a yr/yr and sequential basis in its midrange solutions during Q3 2007. We estimate that midrange, in which the company has made new announcements with its enhanced AMS/WMS offerings in late September and new Simple Modular Storage Systems in mid-October, accounts for approximately 20-25% of the company's total revenue, which compares to EMC's CLARiiON accounting for approximately 40-45% of its total systems revenue over the past few quarters.
- Software/Services** – Hitachi reported that its storage software revenue grew in the mid/high-teens sequential range during Q3 2007, which compares to EMC reporting that its Information Storage

software license revenue grew approximately 5% sequentially (+4% yr/yr). IBM did report positive momentum in its Tivoli business during CQ3 2007. Hitachi's service revenue grew in the mid-single digit sequential range. This implies that the company did see a higher hardware mix during CQ3 2007; we had estimated that software and services accounted for 15-20% of total revenue each over the past few quarters.

- **Strong Backlog Looking Into CQ4 2007**– As noted above, the company stated that it saw a strong uptake of its UPS-V series solutions, lending itself to a “strong backlog” looking into CQ4 2007. We view this as a positive both for Hitachi, as well as for the overall storage segment as we look into an always seasonally stronger year-end spending dynamic. The company noted that it did not see any cancellations/deferrals of orders during the quarter.
- **Steady Pricing Dynamics** – Hitachi reported that it had not seen any meaningful change with regard to pricing dynamics during CQ3 2007; coinciding with other industry checks and the fact that EMC's hardware gross margin actually improved on a sequential basis during the quarter (we estimate more than 150bps).
- **Other** – Other highlights include: **(1) SATA Drives** – Hitachi does not see any risk of capacity shipments outstripping demand with the ongoing adoption of high-capacity SATA drives; a trend we have been monitoring, **(2) The company saw no supply shortages in the HDD industry during CQ3 2007**; some other enterprise storage providers had noted this, and **(3) The company agrees with our belief that recent product announcements out of IBM should not have a meaningful impact on the competitive landscape going forward**; still focused on a more meaningful architectural refresh looking into 2008. Hitachi believes that much of EMC's recent announcements in storage have been focused on catching up to Hitachi's technology position.
- **Derivative** – Given the company's relative strength in the hardware business, we believe Hitachi's results could be viewed as a positive derivative data point for the SAN switching space, in particular Brocade.

Hard Disk Drives (Hitachi Global Storage Technologies; HGST)

Hitachi reported total HGST revenue of \$1.45 billion, up 9% yr/yr and 19% sequentially. As noted above, this compares to Seagate reporting revenue of \$3.285 billion, or up 18% yr/yr, during its September quarter, and our estimate of Western Digital reporting revenue of \$1.673 billion, up 32% yr/yr when it reports CQ3 2007 results tomorrow (11/1; after close). Hitachi's total shipments grew to 24.3 million units, up 22% yr/yr and 20% sequentially. This compares to Seagate reporting total shipments of 47.18 million, up 21% yr/yr and also up approximately 20% sequentially. We estimate that Western Digital will report total unit shipments of approximately 29.6 million during its September quarter, up 30% yr/yr and 19% sequentially. Below we highlight Hitachi's shipment growth trends within the key HDD segments:

- **Enterprise (3.5” and now including 2.5”)** – Total shipments stood at approximately 1 million units during CQ3 2007, which was down from 1.1 million units shipped in both the prior and year ago quarters (-5% yr/yr and -6% sequentially). This compares to Seagate's enterprise shipments growing 11% yr/yr and 6% sequentially during CQ3 2007. We continue to believe that Seagate is very well positioned for the ongoing adoption of 2.5” enterprise (small form factor; SFF) drives into the blade server market. During CQ3 2007, Seagate reported that nearly 40% of its total enterprise shipments were into this market.
- **3.5” Desktop** – Shipments totaled 10.4 million, which was up a very strong 44% yr/yr and 20% sequentially. This builds on HGST's healthy desktop unit growth trends of more than 50% yr/yr over the past two quarters. This compares to Seagate's desktop shipments growing 19% and 22% on a yr/yr and sequential basis, respectively. We conservatively estimate Western Digital desktop shipments to be up 13% yr/yr and 20% sequentially. The company reported that desktop inventories were relatively low at just over 4 weeks in the channel (vs. ~6 weeks exiting the June quarter). This segment does include high-capacity SATA drives shipped into the enterprise-class market.

Hitachi Storage Review

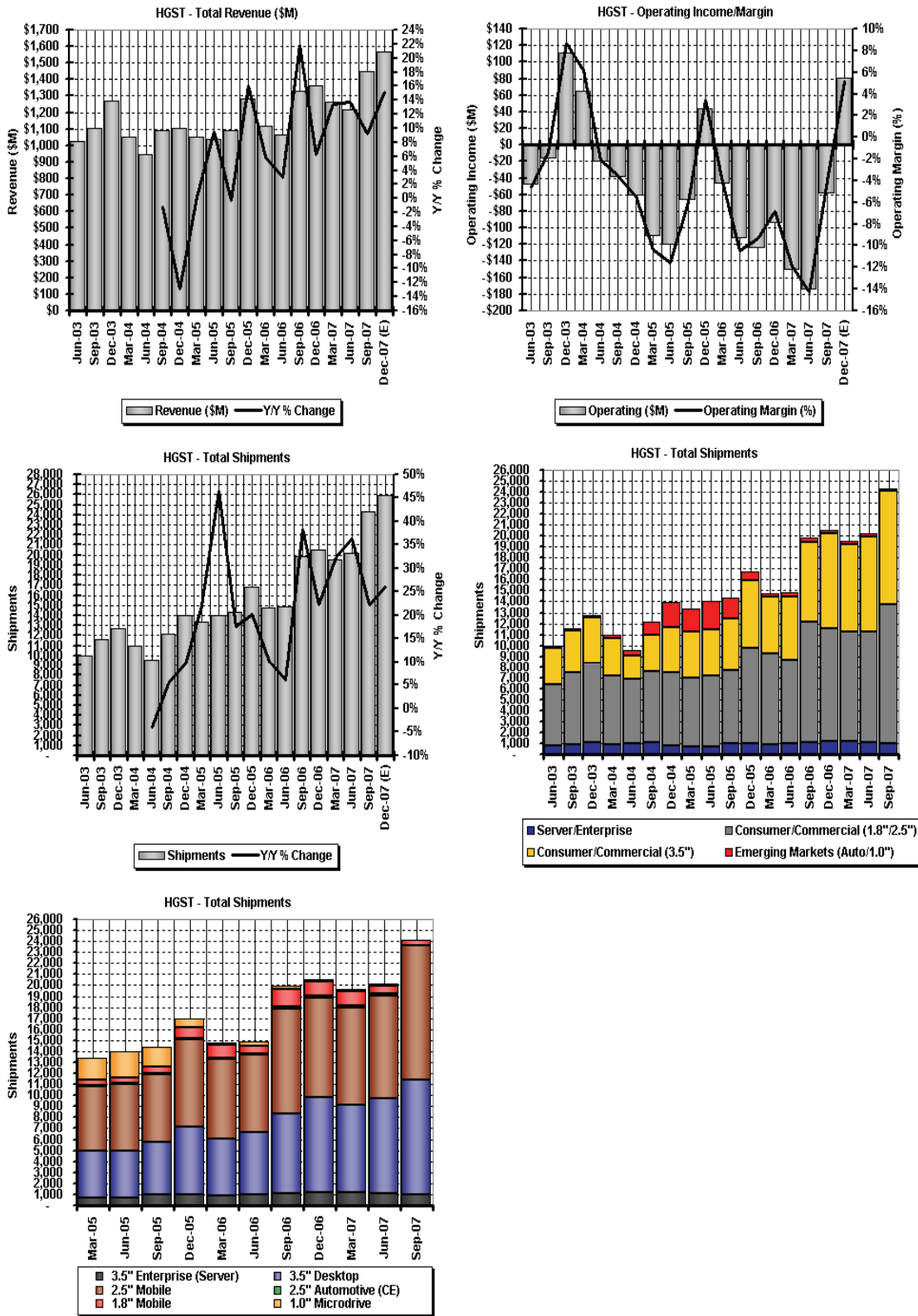
- **2.5" Mobile (Notebook)** – Shipments totaled 12.2 million units, up from 9.6 million and 9.4 million in the year ago and prior quarter, respectively (+27% yr/yr and 29% sequentially). This compares to Seagate's 2.5" notebook HDD shipments growing an impressive 87% yr/yr and 28% sequentially. We estimate Western Digital 2.5" notebook shipments to grow 118% yr/yr and 25% sequentially. We believe this data continues to support the notion that Seagate gained another percentage point or two in 2.5" notebook shipments during CQ3 2007 (~21-22% share). Our conversations clearly suggested that Hitachi saw demand outstrip supply in this segment during CQ3 2007; causing inventory levels to exit the quarter lower than normal (versus exiting the June quarter at approximately 5 weeks; 4 weeks in the Mar 07 quarter).
- **2.5" Automotive** – Shipments totaled 180,000 units, which was up 46% yr/yr and 13% sequentially.
- **1.8" Mobile** – Shipments declined 64% yr/yr and 25% sequentially as this market continues to be driven by the Video iPod, in which there has been increased competition from Samsung. Seagate has downplayed the importance of this market opportunity over the past several quarters.
- **1.0" Microdrive** – Shipments totaled only 3,000, down 99% yr/yr as this market has essentially gone away.

More important than the above revenue and shipment details, is Hitachi's operating loss dynamics, in our opinion. During CQ3 2007, Hitachi reported an operating loss of \$58 million. This represents a significant improvement from the \$150 million and \$174 million operating losses reported during CQ1 and CQ2 2007, respectively. As a reminder, in early 2007 the company had laid out a restructuring effort focused on attaining breakeven trends by the end of 2007. It appears that the company's efforts are finally moving in the right direction, which we again view as a positive for the overall HDD industry (i.e. a greater sense of pricing rationality).

HGST Guidance – Hitachi is guiding its HDD revenue to be approximately \$1.57 billion during CQ4 2007, up 15% yr/yr and 8% sequentially. This compares to our estimate of Seagate revenue growing 16% yr/yr and 6% sequentially, and Western Digital revenue growing 21% yr/yr and 4% sequentially during the current quarter. The company is estimating total shipments to grow 26% yr/yr to 25.9 million units (up 6% sequentially). Given recent demand trends, and our checks thus far during CQ4 2007, it currently appears that these growth trends could prove somewhat conservative overall, in our opinion. More importantly, HGST is expecting to report operating income of \$81 million during CQ4 2007, representing the first quarter of operating profitability since the Dec 05 quarter.

As a reference, Figure 3 summarizes HGST's operating metrics over the past several quarters.

Figure 3: Hitachi Global Storage Technologies (HGST) – Key Operating Metrics Summary



Source: Hitachi company reports and estimates; Wachovia Capital Markets, LLC

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