

NIMBUS DATA SYSTEMS INC. Q/A EXCHANGE NOTE

SSD VENDOR NIMBUS POISED FOR BIG YEAR

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DELL, EMC, NTAP

The market for SSD storage is growing rapidly, with Gartner projecting a 54% increase in 2012 and all the major storage vendors incorporating SSD drives in their own arrays.

*Enterprise Technology Senior Editor Nancy Piccin recently conducted this interview with **Nimbus Data Systems Inc.** CEO Thomas Isakovich. Nimbus <http://www.nimbusdata.com/> was founded in 2006 and designs and manufactures its own SSD modules and arrays for maximum performance and efficiency, incorporating software that eliminates inefficiency to increase usable capacity and decrease cost. The vendor has systems that are fine tuned for specific uses including VDI, database and unstructured data, and offers multiprotocol systems supporting 10GigE, fibre channel and Infiniband. The company's highest-profile customer is **eBay Inc.**, which installed 100 TB of its flash memory storage for virtualization. Nimbus recently announced a new partner program aimed at broadening its distribution channel.*

Q. What are the most significant changes you expect to see in the storage market during 2012?

A. I think flash is the big one. What the effect is on tiering and hybrid solutions could be interesting. One of the things that has some buzz is this automated tiering concept. If flash accelerates in the market as we think it will, that makes tiering a bit obsolete. You won't have all that spinning disk, just flash. I also think what's happening in the primary storage deduplication area is interesting. It's a case where the hype is a bit higher than actual reality. That should come down to earth this year. I think primary storage deduplication is one of the areas that has gotten a lot of attention but not a lot of life. We'll see how that plays out this year.

Q. What are the current drivers for flash adoption?

A. Customers have reached a breaking point from a pain perspective in storage performance and power consumption. Customers dealing with data growing more than 100% per year don't have power budgets to accommodate it; and even if they could, the data center can't get enough power to do it. Facing that challenge, they need to consider lower power, greener technology, and planned obsolescence. So power is one factor.

Second, all these virtualization deployments on the server side and now moving into the desktop work create such a storm of i/o to the storage that disk arrays can't keep up. It's bringing down virtualization performance overall and limiting how broadly end users can virtualize their environments.

Those pains are combined with costs coming down and greater comfort around durability of flash technology. That's still one of the main questions: how do you address the finite durability of flash? How do you ensure it will last five years? We have invested a lot of technology in hardware and software ensuring flash is durable in the enterprise – and that it's more durable than disk.

Power is a big part of it. A lot of times it's impossible to use that many HDDs, and rack space is another big consideration. We see a lot of customers with full racks of spindles for performance, and they are only using 10% of capacity so they're just buying drives for speed. That's a pretty poor way to improve performance. It's more economical to go all-flash than to buy 10x more spindles than you need to get better performance.

[For example] We have one customer who swapped 150 spindles – a \$150,000 array powering their **Oracle [Corp.]** database – for an entry level system that cost them about 1/10 as much in dollars, power and rack space and gave them 10x performance.

Q. How has customers' attitudes toward flash changed?

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A. In 2010, customers were dipping their toes into flash – using it as caching or tiering. Now, in 2012, they are very much looking at flash as a way to replace disk, instead of just accelerating performance – they want to replace disk. And with the rising drive prices because of the situation in Thailand, and falling flash prices, economies of scale kick in.

Q. Tell me a little about your progress to date.

A. 2011 was a very exciting year. In mid-2011 we came out with our second generation product, and announced a substantial deployment at eBay – about 100 TB of flash. Now, we have more than 200 customers using our technology – and we are profitable. That's amazing. Last year we did about 5x as much revenue as in the previous year.

Q. Why announce this channel program now?

A. Now that we have eBay and other customers, it has awakened the channel. The solution providers have been looking at flash, and asking "When is the time to strike?" With the market warming up to flash, this market is getting hot. We drove all of our business in Q411 through solution providers. It makes sense to make public our desire to work with partners. It's such a great mutual fit. We chose not to build a field sales organization – instead we built a development team to build the brand, find opportunities, etc. Now we need someone to close the gap and get the product sold. It's a very mutually beneficial relationship. It's a tall order – a high bar – to go out and say you're going to build the next generation of primary storage. That's the land of **NetApp [Inc.]** and **EMC [Corp.]**, their prized products. So the functionality you have to deliver along with hardware makes that very challenging. We've been out since 2006, and we have such a broad list of software features built into our product that we've achieved feature comparability with these vendors so customers can strongly consider using us.

Q. What's your competitive advantage?

A. Our core advantage is we offer a multiprotocol platform. No one else has that. What's out there are PCIe cards that go in servers, and external flash boxes with single protocols. But there's nothing out there that's multiprotocol, and has the breadth of software capabilities when it comes to data protection or scaling the infrastructure or securing data thru encryption or other technologies. So the multiprotocol, and the associated software that powers our system are huge differentiators, and I think that gives us a huge 2-3 year head start.

Q. Is being a smaller, less-known vendor a disadvantage in this market?

A. That's not so much of a disadvantage anymore because we announced profitability. We've been self-sustaining for more than two years, without needing outside financing. Last year was a very successful year, and the market is very hot right now. Also, when you get someone like eBay to spend substantially on your product, the assumption is correct that they've thoroughly vetted us. We went to 17 trade shows in 2011. By the end of the year, nine out of ten times when somebody came by our booth, they knew who we were. You can do it with public relations work, but there's nothing that beats being with customers face to face.

Q. Have you seen any direct impact on your sales from the HDD issues stemming from the Thai floods?

A. It's hard to tell if that's what's driving sales but it's definitely forcing customers to become more comfortable with SSD. Also, the proliferation of consumer devices with flash make people more and more comfortable with it. They might have a new laptop with SSD and it works great so it makes people more comfortable. Storage is one of those markets where people are extremely conservative. It regards their most valuable asset – it's where their data lives.

Q. You mentioned desktop virtualization – how does the desktop virtualization adoption curve look?

A. I am definitely seeing it pick up. More and more people are talking about it. One study said about 1/3 of CIOs plan to start VDI deployments in 2012; storage has

been one of the reasons it hasn't. When customers try to scale to 500 or 1000 desktops, the bottleneck quickly becomes apparent. So yes, we have customers who are deploying us for their VDI projects. A VDI vendor I can't wait to name is running their own VDI on our storage on the back end. Finding the right balance of compute and storage with a virtualization platform is an art. Ebay did it – they combined **Dell [Inc.]** blades with **VMware [Inc.]** and Nimbus storage into their own virtualization 'pod,' as opposed to buying Vblocks or something else proprietary. We are starting to see similar interest in VDI pods – this amalgamation of servers and storage that can handle x number of users. Then for databases, we are increasingly seeing the approach of "shared nothing" away from large database clusters, . Those use servers and really fast storage to run this Oracle database, as opposed to buying, for example a proprietary Exadata solution. The whole pod notion is definitely catching on. Customers are looking for best of breed, as opposed to monolithic.

Q. When you say "shared nothing" do you mean the approach where there are farms of commodity servers with storage packed inside, running Hadoop or some other big file system?

A. Yes, lots of servers, each with their own storage, and data is replicated across them.

The challenge we're seeing with some large customers is the databases are getting so large they can't fit all the storage they need inside a server. And furthermore, packing it inside has limitations. It's not hot swappable or serviceable as it would be in a storage array. So you can use very high-performance server, very high-performance storage, connect them over Infiniband, and then those two units will be your pod.

This report was researched and written by Nancy Piccin, with additional research by Elizabeth Frey for OTR Global LLC.

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