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Storage Interoperability – The Metamorphosis Begins

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Management Summary

The search for advantage traditionally has led vendors to cherish independence, proprietary products, and the differentiation that comes with that independence. With the acceptance of storage area networks, vendors of storage and related networking products are being forced from their historical roles as antisocial caterpillars, bent on pushing their own solutions, through a metamorphosis into something new, which can "play well" with its competitors. This social butterfly incarnation flies in the face of the traditional way to win business and maintain margins.

Vendors may think they have already been civilized halfway out of existence. Competition is nothing like the competition of the snake-oil era, when wild claims were unchecked by federal legislation, sales were truly local, and vendors could move on to the next town and fresh markets. Pervasive comparison information and the Internet have curtailed the lifespan of misinformation. Investors demand prompt and public articulation of unpleasant truths. Modern R&D methodologies have minimized the lifespan of true competitive edge. Vendors cannot help but see customers' demands for open systems and co-operative support as another hazard to their corporate lifespan.

And so, vendors have been understandably slow to embrace this new incarnation. They have hemmed and hawed, championing interoperability with other products on the storage fabric (from "many servers" to "my array"), or with different operating systems, but not with competitors, and never with their major competitors. This has fooled few and irritated many buyers. The openness of markets and the emergence of new players and approaches have given customers more power to demand increased interoperability from the vendors. Storage virtualization software threatens to make interoperability happen on vendor-independent terms. Ignoring the problem has not worked.

Finally, there are signs that there are meaningful efforts at interoperability – and efforts by enough major players to draw more people into the cooperation, unlike the grudging, somewhat half-hearted efforts of the past. Specifically, on June 6th, six major storage vendors announced the formation of the SNIA Supported Solutions Forum. A day later, IBM and Hitachi announced a cross-licensing agreement for several of their advanced functionality storage software products. For more details, read on.

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The SNIA Supported Solutions Forum

SNIA defines the Supported Solutions Forum as a standards-based storage system with mutually-supported interoperability. While it offers immediate solution sets, it has even greater value as a framework for future interoperability. SNIA wants to go beyond plug-fests to establishing information repositories and cooperative bases it feels are the necessary first step to broader cooperation.

The Supported Solutions, which SNIA The six companies involved in the July 6th announcement are two switch vendors:

- Brocade and
- McData

and four storage vendors:

- Compaq
- EMC,
- Hitachi, and
- IBM

Two solution sets were announced, one for each switch vendor. Until now, each storage vendor interfaced with the switch vendors in their own proprietary way. With this announcement, **each of the storage vendors interfaces with each switch in the same way, albeit in separate zones of a shared fabric.** Brocade and McData do not interoperate with each other and there is no stated similarity between their interfaces. Nothing was said about the storage software that manages the storage arrays.

This common operating protocol within a switch vendor's environment is, in itself, not a big deal to customers. It is a worthy under-the-covers baby step in the direction of interoperability. More important to the customer, however, is the cooperative support agreement endorsed by the six companies. They have agreed that the customer can pick the single point of contact and the selected vendor will contact the other signatories to resolve any support issues, however complex they are. In addition, SNIA is establishing a website to house a database of solutions and a registry of vendors and products. They will use the SNIA Interoperability Lab in Colorado Springs to support the Forum as well.

The Storage Networking Industry Association

SNIA was formed in 1997 as an umbrella organization for participants in all storage technologies. Focusing on promoting storage networking in all forms, SNIA fosters interoperability through its vendor-neutral Technology Center and other initiatives. It seeks, through its work groups, to provide a forum for incubation and development of new technologies and protocols, contributing information to standards bodies for consideration and ratification.

This is all well and good. Interacting in a mixed vendor storage environment begins with the common rules of communication. It is a good first step, but not enough to deliver real interoperability. What gives business capabilities, and differentiation in the marketplace, is not the computer systems but the applications that run on them. Read on.

The Hitachi-IBM Alliance

On the day after the SNIA announcement, IBM and Hitachi took another step into metamorphosis. **It may be more meaningful than the SNIA announcement, in that it augments the functional similarity and interoperability of two vendors' storage. Hitachi and IBM have cross-licensed the APIs for each other's advanced storage functionality software products.**

IBM has contributed *Peer-to-Peer Remote Copy (PPRC)*, *Extended Remote Copy (XRC)*, *FlashCopy*, *Parallel Access Volumes (PAV)*,

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and *Multiple Allegiances*. Hitachi has contributed its *Nanocopy* and *ShadowImage* products to the agreements. The Hitachi products will run on IBM's *ESS Shark* high-end storage array. IBM's products will run on *Hitachi's 9900 "Lightning"* product. This exchange does not apply to other, non-premium storage arrays. It does not affect IBM's agreement with Compaq (which allows Compaq to sell *Shark*, soon with the Hitachi enhancements), or Hitachi's with Hewlett-Packard (which permits H-P to OEM a version of the 9900 product without the advanced features). Still, for high level and valued customers, this is putting the customer ahead of proprietary market advantage. **It gives SAN customers a wider set of choices of suppliers for a complete set of advance functions and the advantage of using the same applications on competing platforms. The combined benefits of more functionality, fewer requirements, and potential for labor savings from common interfaces and multiple sources for arrays are very significant to the customers, as well as those vendors offering competing solutions.** The latter now have a two-headed dragon to battle.

Though this agreement has been in the works for months, results will not be immediate. The interoperability of the *Multiple Allegiance* product is available now on *Shark* and the *9900*. *Extended Remote Copy (XRC)* is available on both products; the agreement will allow Hitachi to deliver the IBM's latest release in the fall. *Parallel Access Volumes* also should be available this fall on the 9900. *Flash Copy* and *ShadowImage* on *Shark* will take longer.

You will be able to use *Extended Remote Copy* between an IBM *Shark* and a Hitachi *Lightning*. However, you cannot do the same with IBM's *PPRC* and Hitachi's *HRC*, because of underlying differences in the way each does its caching.

Agreements between IBM and Hitachi are not new. There is a history of sharing APIs, technology, and even reselling the other's products. But this is more than about sharing; it is about giving the customer what they want and leveraging resources against dominant competitor EMC.

Conclusion

These agreements involves a lot of hard work, all based on the speculation that a truly open SAN, as a mature and easily-used tool, will provide far more opportunity for vendor revenue than do today's proprietary and semi-proprietary SANs. The SNIA announcement is a small, but meaningful step. The next, and more important, step will be more interoperability of storage management systems, which will be even harder for traditional vendor cultures to accept. Consolidation and interoperability of management is the step that will reduce the customer's headaches and offer real total-cost-of-ownership savings.

The SNIA effort can be seen as an effort to unite the storage vendor marketplace, particularly in the face of blatant lust for storage revenue on the part of major telecommunications network players. The Hitachi-IBM effort is an attempt to disrupt the existing storage vendor continuum, and to put pressure on EMC, the industry leader.

Both initiatives will help the customer. Both initiatives send signals. Other players will now have to respond. As Claus Mikkelsen, Director of Storage Applications Architecture and Technology Group at Hitachi Data Systems, said "This agreement shows that these are extraordinary times."

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