



Business Opportunity is Fleeting — Seize the Day with HP Neoview

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Management Summary

Technology has added speed to business processes. It has produced a wealth of data about the business. It has hooked supplier and customer information into the business operations of a business, allowing it, at least in theory, to function better. Suppliers can be alerted to changes in requirements. Customers can be more specifically targeted with relevant products. Employees can multi-task effectively. Business operations can be better optimized. All these give a business the competitive edge it needs to survive. **Getting the information to the right people in the context of the relevant business process, however, is not a simple task.**

Data centers have addressed the need for data support of business processes and decision making in two ways – *data warehouses* that contain with historic data that can be analyzed to spot trends and *operational data stores* that contain the information needed to track day-to-day business and to prevent inventory outages and other problems. Business information and sources of business information have both continued to grow quickly. Consequently, **there are often *too many un-coordinated data repositories, and too few people getting the access to and analysis of the information they need to make decisions based on the current state of the business and all the relevant factors.*** They need to innovate, taking into consideration the current state of business as a whole, and not just of their own bailiwick. **A hybrid approach is needed to utilize the whole spectrum of business information, and to satisfy a wide spectrum of users.** As with hybrid cars, we want the richest of functionality, and the frugal consumption of resources to make it affordable.

With *HP Neoview*, Hewlett Packard has developed a hybrid-style solution that can do both at the same time – and more, besides. While new to the business intelligence space (BI), HP has been in the business of enterprise systems and online transaction processing (OLTP) for decades. Their infrastructure is purchased and used for business intelligence by hundreds of thousands of businesses. Their hybrid solution is an appliance-like in ease of use, enterprise-like in scale, and always available – something it derives from the *Tandem Non-Stop* architecture so beloved by banks. HP has tapped the brains of HP Research Labs, the BI expertise of their Knightsbridge acquisition, and their own deep pockets to come up with a solution targeted at the needs of today and the ambitions every business has for the coming years. The result is a system totally tuned for massively-parallel performance and architected for simultaneous processing of different kinds or workloads. Neoview has been a cornerstone of HP's internal IT transformation. Neoview is not your usual server-and-storage combination. Please read on for more details.

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The Requirements

Business data is now an asset of critical operational importance. It demands an analysis and delivery vehicle that can ingest it quickly and support the queries that will allow it to present the right information to the right people – and the right business processes. The broader use of business information must be affordable – so volume-priced hardware needs to be part of the solution. The immediacy of the business decision timeframe has winnowed out solutions that take too long to make information usable. The competitive nature of today's markets is eroding the appeal of solutions that cost too much.

Centralization is needed to bring together the information documenting all the variables and all the dependencies that pertain to a given business situation. Breadth is needed to include information from partners and suppliers that may be stakeholders. The information has to be made usable – and quickly. This has driven the following requirements for the Neoview platform.

- **The System must be continuously available.** *Neoview's redundant architecture is helpful in this regard.*
- **The system has to be able to do multiple things concurrently.** *Neoview's shared-nothing architecture supports this.*
- **The system must support multiple usage profiles.** *Some workloads will be more time critical than others – and the relative priorities may change over the course of a day.*
- **Data freshness and availability must have service levels commensurate with the rest of the operational environment.** *Neoview can load a terabyte of information in an hour and scan a terabyte in 30 seconds.*
- **Because of the immediacy of the need for this analysis, the system must never be offline.** *The Tandem architecture is of relevance here, as is the research by HP Labs.*
- **The system must scale as use and needs increase. Large data volumes must be**

loaded quickly. High volume of complex queries demands massive parallelization. *Neoview does all of this.*

- **It must not come at a high cost. Many existing solutions are so expensive that they are frugally used. This is not what the rapid evolution of today's business operations demands.** *Neoview breaks out of the high-cost mold.*

HP Neoview

Neoview is a new product from a new division of HP – *HP Business Information Optimization* – charged with developing business intelligence and information lifecycle management (ILM) solutions to help companies capitalize on the business information they produce, capture, and retain. With their background and depth of experience, HP has built a tightly integrated and balanced system that can meet the needs of a data warehouse appliance.¹ But their customers asked for more, and they offer a system that, functions well as an enterprise data warehouse, meeting the many requirements of that market:

Resilience

Neoview uses *HP Integrity rx2620* server nodes², featuring dual high-speed *ServerNet* internal switches³, and standard HP StorageWorks disk drives⁴. Each processor addresses a specific chunk of stored data. Neoview comes as a black box⁵, pre-configured by HP, and can be up and running in 24 hours. Its heritage is NonStop, a system that has been built and evolved for decades to support continuous operations.

The Neoview system is optimized for queries, rather than for transaction processing,

¹ HP Neoview performs very well against data mart appliances in benchmarks using un-tuned databases and no indexing.

² Over time, as server performance improves, HP can replace Neoview server nodes with new ones and redeploy the older nodes in other HP equipment.

³ HP will evaluate 10-Gigabit Ethernet and Infiniband to see when their price/performance will make their use appropriate. HP is bent on keeping the economics of the solution in the volume (commodity-price) model.

⁴ There are two disk configurations. Model C configurations use 146 GB disks, and Model E configurations use 300 GB disks.

⁵ No one can log on with root privileges.

NonStop's traditional workload. The operating system and database are tightly integrated, making the operating system invisible, allowing a DBA to manage the system.

Massive Parallelism

Unlike the redundant processing supported for OLTP use of Non-Stop architecture and operating system, Neoview has a shared-nothing architecture designed to support up to 1024 processors. The latest release is available in configurations of up to 256 processors. Information loading runs concurrently with queries. A high-performance data-mart in the database management system captures runtime statistics and supports tuning the concurrent workloads while keeping overall performance up to service level agreements.

Ready for Business Information Optimization

In Neoview, there is enough brute force available to minimize the need for pre-constructing views. At this release, Neoview has an optimizer to optimize query processing, and a tool to resolve skew issues that can affect massively parallel architecture. With data that is used repeatedly, database administrators have the tools to optimize tables, indexes, and workloads as is appropriate. HP Labs continue to work on business optimization and database optimization and tuning.

HP Pricing

After considerable internal use, Neoview was quietly introduced to selected betas in October of 2006. Several large enterprises have tested it and are beginning to put Neoview into production. HP's pricing includes site assessment, solution design, set-up, initialization, some tuning, and training. HP will install *Neoview* and make sure folks are trained to get the most out of what they have acquired, at least for the next several months. Prices start at \$645,000 for three terabytes in the smaller-drive, higher-performing C model and \$695,000 for six terabytes in the larger-drive E model.⁶ Both models scale very large by adding additional balanced increments of nodes and storage. HP will provide basic service and support, and offers additional professional services in strategy and planning,

information quality, information integration, and information delivery. For customers who want it, there is secure remote support.

Down the Road

In 2008, HP plans to move Neoview to Integrity blades, which will reduce the floor space needed, improve price performance, and support lower environmental costs.

Neoview represents a new design approach – one targeted particularly at broad, operational use of business intelligence. It offers a new price point to those very large companies already leveraging business intelligence, and offers an on-ramp for the mid-size companies that are big enough to need complex queries to bring the right business information in front of the right people in a timely fashion, but who have eschewed data warehouses until now. By dramatically upping the ratio of processors to drives while scaling large, it offers another alternative approach to the urgent task of wringing usable knowledge out of organizational data. By fully embracing support for concurrent workloads, it allows an enterprise to prioritize the need for immediate access across different sources of data and thus to add another dimension to its information strategy.

Conclusion

With the expansion of business intelligence into real-time operations and the growth of business data, this is a great time for new ideas in information solutions. HP has come up with an appliance-style, data warehouse-scaled database solution that demands attention from any enterprise using their business information to stay a step ahead of the competition. Check it out!



⁶ This is user space, not raw storage.

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