Billing & Payment Application Strategies

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Netezza Turbocharges Reporting and Analysis for Communications Carriers

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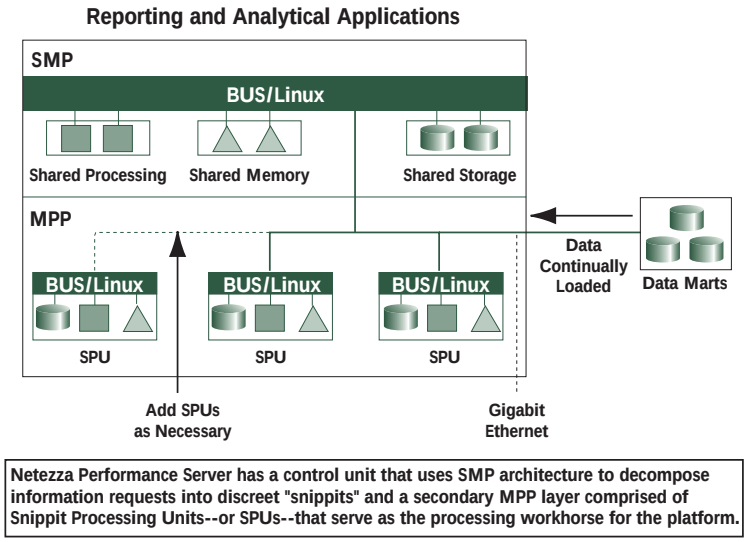
Founded in 2000, Netezza markets a data warehouse appliance called the Netezza Performance Server or NPS optimized to perform business intelligence queries on large amounts of data—generally in the 1 terabyte range. The company is headquartered in Framingham, Mass., with about 90 employees. Since its inception, Netezza has managed to attract US$53 million in venture funding.

NPS enables communications carriers to analyze more data in less time. To do this, the company integrated storage, hardware, operating systems, and DBMS into a single platform. NPS combines SMP and MPP architectures to create an AMPP architecture that uses SMP for query decomposition tasks and MPP for processing of decomposed tasks and for platform scale (see Exhibit 1).

Exhibit 1.

Netezza's AMPP Architecture Combines SMP and MPP



Source: Netezza and the Yankee Group, 2004

Since the introduction of a commercial product in 2003, Netezza has inked deals with four carriers in the United States and Europe including three Tier 1 carriers. The carriers use NPS primarily for CDR and click-stream analysis for marketing segmentation, revenue assurance, and cost management.

The communications industry arguably produces more data than any other because of the amount of detailed network information that it produces for billing. Most of this data is discarded or stored off-site. Netezza promises to make it possible to do the types of analysis that previously would have been either impossible or financially impractical.

Strengths and Opportunities

Netezza offers significant price performance advantages in data intensive environments:

- The SPUs use commonly available components. The processors and storage devices are common, low-cost components used in many computers and electronic devices.
- Multi-vendor purchases are consolidated. Existing data analysis structures commonly include separate payments to database vendors (IBM, Oracle, Teradata), hardware vendors (Sun, HP), and storage vendors (EMC, Veritas).
- Higher performance than conventional relational database management structures.
- Claims less administration than other MPP architectures because the SPUs are integrated and managed in one platform rather than clustered and scattered across a data center or enterprise.

NPS allows ad-hoc analysis of CDR data: Perhaps the most significant opportunity is also the most generic. The CDR stream represents the lifeblood of a communications carrier's information system and is an undeveloped natural resource. Because analysis of significant volumes of this data has proven time consuming, carriers typically discard most of this information at the mediation source or store the information in an inaccessible location (such as switch backups performed in the field). Allowing business unit owners such as engineering, finance, marketing, and customer service access to this information reduces the demand on the corporate data warehouse and gives the business users better access to data.

Data services will only increase the need for billing event analysis. As communications providers expand their data service offerings, the resulting event information will only increase the amount of information generated via the billing process. In these cases, carriers will be managing a wider portfolio of services—voice, data and content—and must have the analysis tools to measure service up take, bundling what-if scenarios, profitability, quality of service, segmentation, and so on.

NPS has computing torque designed for revenue assurance and cost-management applications: Large dataset comparisons such as switch-to-bill and SS7-to-bill reconciliation require substantial performance. In fact, one of the first applications of the Netezza product came from a partnership with Vibrant Solutions where Netezza is used to reconcile interconnect billing records in support of a cost management installation. We see Netezza as an attractive partner for any revenue assurance partner looking to increase the speed of the product and enable departments to perform real-time drill downs into data to investigate revenue leakage.

Weaknesses and Threats

Netezza is not needed for every data analysis project: The performance Netezza brings is only necessary in high-transaction volume environments. In lower volume environments, conventional RDBMS platforms like Oracle provide adequate performance. For example, the average wireless subscriber generates approximately 5,500 usage records per year—a clear opportunity for Netezza. However, that same subscriber generates little more than 6 customer contact event-records in the same timeframe. Analysis of this data by extending conventional RDBMS structures would be adequate.

Competition to come along soon?: Netezza's price/performance is predicated on three distinct advantages:

- Uses many low-cost processors and storage for distributed processing of analytic requests.
- Combines the hardware, operating system, and database software into a single platform.
- Integrates the software and hardware, and optimizes processing efficiency for large-scale reporting and analysis type tasks.

Large hardware vendors such as HP or Dell could theoretically replicate the first two performance advantages. However, the third depends more upon whether the intellectual property can be easily replicated and, assuming it can, whether Netezza's patents can effectively defend against the would-be competitors.

Recommendations

- **To succeed in the communications segment, Netezza must target specific business needs and initiatives that carriers are unable to accomplish today because they are unable to analyze large data sets quickly.** The trick is to convince carriers that NPS has the horsepower to do the job.
- **Netezza must be careful not to disturb existing carrier relationships with hardware, storage, and database vendors.** From a strategic standpoint, we think the best way to do this is analyze the needs of communications business users—finance, customer service, network operations, marketing, sales. Use these needs to drive initiatives with vendors on the business intelligence, analytics, and reporting side. We see revenue assurance and customer profitability as being two such areas where the need for high performance will be critical.
- **Netezza should also form partnerships with vendors whose applications produce or transform large amounts of information for the carrier.** Billing and mediation systems are obvious targets. However, displacing their dependency on Oracle (or, to a lesser degree, Sybase) will be challenging. Netezza also could focus on being a business intelligence enhancement for large billing outsourcers such as Convergys or CSG Systems, whose data centers contain massive stores of billing and customer contact data.

