

Marketplace Update

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IBM Shows the Way, Again**
By Charles King, Pund-IT, Inc.

**Pund-IT, Inc.
Hayward, CA
U.S.A. 94541**

**Contact:
Office: 510-383-6767
Mobile: 510-909-0750
charles@pund-it.com
www.pund-it.com**

Workload-Optimized Systems—IBM Shows the Way, Again

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Introduction

Over the past two years, the IT industry and market have focused increasing attention on workload-optimized computing systems—solutions which are designed for the requirements and to enhance the performance of specific business applications and processes. A quick tour through recent IT press releases and news stories suggests that vendors of every stripe are planning, promoting and/or building workload-optimized solutions of some sort, and claiming that these solutions are the greatest thing since sliced cheese.

An example: At the event celebrating the conclusion of the Sun Microsystems acquisition, Oracle executives cited workload optimization as a key factor in the deal and said that upcoming Oracle Exadata clusters (which were originally designed for HP hardware) leveraging Oracle's software and Sun server and storage systems would blow away competing systems, particularly those of the company's nemesis, IBM. Unfortunately, advertisements in the Wall Street Journal and elsewhere confused the company's claims by comparing new Exadata clusters to the IBM Power 595 systems that dominated industry tpmC benchmarks in 2008.

At best, that's the equivalent of the owner of a new America's Cup contender boasting that his craft can beat past years' winners while avoiding discussion of the ship he's about to face-off against. At worst, it qualifies as an apples/oranges comparison that ignores the differences between cluster and integrated system technologies, along with software licensing costs and other issues which inherently affect business value. In any case, while such pronouncements might provide entertaining fodder for discussion over a couple of beers they do little to help to organizations looking for assistance with critical IT challenges.

So is there any clear way to accurately judge the qualities of workload-optimized systems, along with the relative value of competing solutions? In a word, yes. As part of this discussion, we believe a look at the history of IBM's workload-optimized system efforts and the company's latest offerings can offer insight into the market as a whole.

Workload Optimization – What Is It?

Basically, a workload-optimized system is one designed and configured to provide optimal performance for specific business applications or processes. Sounds simple enough but while products like single-purpose servers might appear to qualify as workload-optimized, the term is typically reserved for systems that require significant integration to support highly complex applications. The IBM Smart Analytics Systems that debuted during the past year are good examples of true workload-optimized systems.

Why have these technologies become such hot commodities? Because they are highly efficient solutions for critical business problems. The fact is that complexity infests virtually every acre of the enterprise IT landscape. Companies continue to rapidly deploy physical servers and/or consolidate multiple systems via virtualization. Storage growth and performance have for years outstripped the precepts of Moore's Law. Networks shoulder data

and throughput burdens today that would have squashed them a few years back. And all the while, organizations want to lower costs while heightening the returns on their IT investments and information assets.

Potential Benefits for Enterprise Customers

Workload optimization is an effective approach to dealing with many of these issues, and many enterprises employ staff or system integrators with specialized skills to maximize IT performance. But as hardware, middleware and applications become ever more complex, so does the process of making them work together successfully. At the same time, economic challenges have led or forced many to examine the practical effects of IT CAPEX and OPEX on their organizations. The result? Organizations need and want help to:

1. Deploy IT solutions more quickly
2. Lower overall costs
3. Reduce risk

In essence, businesses want vendors to make IT simple, make IT affordable and make IT work.

There are some areas and processes where the potential return afforded by workload optimization is particularly notable: Transaction processing and database management leverage ever more robust network and Internet performance, making them critical to virtually every enterprise. The same can be said of business process applications which scale to meet changing or increasing demands. Spurred by advances in data storage, digital archives and records can and have become repositories of business value for able organizations. Collaboration and Web-based processes are increasingly common organizational tools. Finally, business analytics helps organizations maximize the value of numerous information and business investments.

By applying their considerable knowledge and experience to fully optimize systems for specific workloads and applications, vendors like IBM have created optimized solutions that dependably deliver higher levels of performance and are also easier and less expensive to acquire, set up and manage

But Challenges for IT Vendors

Despite these numerous benefits, developing successful workload-optimized systems is no easy thing. They require:

- Technical and strategic skills that comes from years of training and practical experience
- Highly integrated and tuned hardware components including microprocessors, servers, networking and storage
- Scalable middleware platforms, particularly databases and related assets
- Robust business applications and/or ISV partners
- Deep knowledge of businesses/markets/processes aligned with specific industries
- Significant, ongoing R&D investments

Given these points, it is fairly simple to define the characteristics of products that claim but fail to be workload-optimized solutions. These include servers and/or clusters featuring little or nothing more than factory-loaded software, and those which require a high degree of traditional on-site integration and/or integration.

Most importantly, successful workload optimization is not just a technological process but one that requires an intimate knowledge of industry and business practices. As a result, so-called workload-optimized products delivered by vendors with minimal expertise in target markets and those developed without the close collaboration of ISV partners experienced in specific vertical industries and business processes should be considered suspect.

IBM's Workload-Optimized Systems—Looking Back

If experience is a crucial requirement for building successful workload-optimized systems, it would be difficult to find a more qualified vendor than IBM. In a sense, workload optimization was simply a part of doing business at a time when systems were designed and built individually for specific clients. As a result, IBM has been developing such solutions since the 1950s, when the first Transaction Processing Facility (TPF) or Airline Control System (ALCS) was deployed. That was followed in the 1970-80s by IBM System 38 and AS/400 solutions designed for integrated application and data serving processes.

In the 1990s, IBM ramped up workload-optimized application and data serving processes via IMS, CICS, and DB2 Sysplex technologies for the company's flagship mainframes. The decade also witnessed the Deep Blue systems IBM developed to play championship-level chess. In February 1996, Deep Blue won a game against reigning world chess champion Garry Kasparov, a first for a computer of any kind, though Kasparov won the overall match. In a May 1997 six game rematch, Deep Blue beat Kasparov 3½ to 2½.

In the 2000s, IBM implemented workload optimization across numerous commercial business applications. The company's Web- and network-delivered solutions included DataPower (for XML- & Web-based service oriented architectures (SOA) and the IBM WebSphere Edge Server, which was designed for high-scale Web application serving. Workload optimization was also a critical component of the company's "Shark" enterprise storage solutions and the SAN Volume Controller for virtualized storage management. In 2008, the company introduced Cognos Now for operational business intelligence, highlighting the growing importance of the company's Information Management strategy.

In fact, it can be argued that workload optimization is deeply ingrained in IBM's DNA, from the company's research efforts from the physics of the microprocessor up through solution and service development. Even as customized scale-up systems were replaced by general purpose scale-out servers paired with increasingly complex software stacks, the company continued to create and provide its customers workload-optimized solutions, recognizing the fundamental, often unique value they provided to enterprises. The rush of attention these technologies currently enjoy indicates that other vendors have finally woken up to those benefits, and opportunities, too.

Looking Ahead...

IBM continues to leverage numerous acquired and internally-developed technologies to address the growing need for workload optimization. 2009 proved to be a particularly busy year for these efforts with the launch of the Lotus Foundations business collaboration suite, the DB2 pureScale on PowerHA for scalable database management and the Guardium solution database security management. The company also began utilizing workload optimization in strategic efforts, with solutions like IBM Cloudburst for cloud computing deployment and management and the Smart Analytics System 7600, a Power-based solution

which triples the performance of business analytics and data warehousing processes while requiring 1/3 the floor space of competing products.

This year, IBM is taking workload optimization to the next level. The new Smart Analytics System 5600 and 9600 respectively leverage the company's System x (x64) and System z mainframe servers for maximally efficient business analytics. In addition, IBM's new POWER7 processors and attendant servers leveraging PowerVM virtualization, Active Memory Expansion and related technologies should lend further punch to the company's workload-optimized portfolio. The same is true for IBM's new fifth generation Enterprise X Architecture (eX5) solutions, which leverage Intel's latest Xeon 7500 chips.

IBM also announced the pureScale Application System, which combines POWER7-based servers with WebSphere Application Server and DB2 pureScale software to handle heavy transactional workloads, such as those required by smart utility grids. Additionally, the company introduced a Partner Enablement program around workload optimization, which includes new solutions designed for sale by company business partners, and IBM Global Financing announced a related \$500 million effort to encourage Sun Microsystems partners to become IBM resellers.

Later in the year, IBM plans to introduce additional new workload-optimized systems. These include the Business Analytics Optimizer, a hybrid system featuring both IBM System z and BladeCenter technologies, and the InfoSphere Pack for improving customer insight via data modeling technologies and Cognos reporting tools, and the Information Archive (for information lifecycle management (ILM)) paired with the complementary IBM SONAS integrated high-scale tiered storage solution.

Bottom line—IBM has considerably more experience in workload optimization than any other vendor, offers the industry's broadest portfolio of workload optimized systems and is forging ahead in the development of next-generation technologies solutions.

Summary Conclusions

The increasing focus on workload-optimized systems by both IT vendors and their customers is entirely practical and eminently sensible: such systems can deliver higher performance, lower set-up and management expenses, better ROI and TCO, and improved customer satisfaction. In short, workload optimization answers what businesses fundamentally want from vendors: To make IT simple, make IT affordable and make IT work.

But confusing claims and rhetoric have clouded just what constitutes true workload optimization. We believe these systems require proven expertise in hardware, middleware and application integration, years of significant investments, continuing R&D commitments and deep knowledge of businesses, markets and processes in specific industries. What workload-optimized systems are not are simple servers with factory-loaded software or products delivered by vendors with little experience or expertise in the industries they target.

IBM's workload optimization efforts began with the company's first Transaction Processing Facility (TPF) or Airline Control System (ALCS). Since then, IBM has built a wide variety of systems, from IMS, CICS, and DB2 Sysplex technologies for mainframes to 2009's IBM Cloudburst for cloud computing and the Smart Analytics System 7600 whose performance is designed to meet specific customer requirements. While workload optimization has been

an essential part of IBM's DNA for decades, other vendors finally appear to be waking up to its benefits, too.

This year, IBM is taking workload optimization to the next level with the new Smart Analytics System 5600 (System x) and 9600 (System z), and the pureScale Application System. IBM plans to introduce additional new workload-optimized systems later in 2010, including the Business Analytics Optimizer, the InfoSphere Pack and the Information Archive with complementary IBM SONAS storage systems.

Bottom line—IBM has considerably more experience in workload optimization than any other vendor, offers workload-optimized solutions addressing a broad range of enterprise business and computing challenges and is working hard on next-generation workload-optimized systems and technologies. Enterprises considering the potential value that these offerings might offer their organizations are well-advised to investigate IBM's current and upcoming workload-optimized systems.

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About Pund-IT, Inc.

Pund-IT emphasizes understanding technology and product evolution and interpreting the effects these changes will have on business customers and the greater IT marketplace.