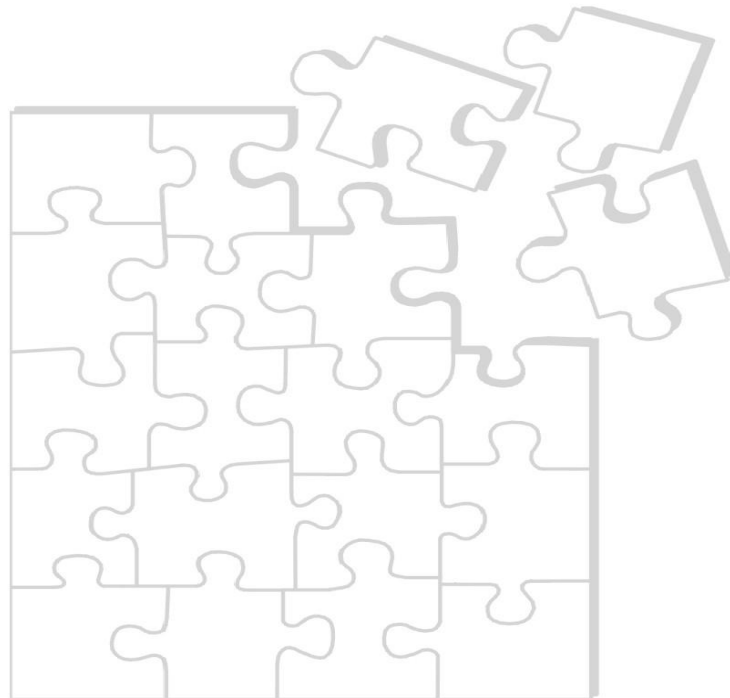




## Leveraging CA Datacom™ Improves Business Performance



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Existing enterprise technologies such as CA Datacom are often processing workhorses supporting current revenue streams and delivering high-performance operational benefits to their organizations. Yet these technologies must also prosper within rapidly changing datacenter environments which are populated with dynamic applications, new software architectures and innovative business projects. While Ptak, Noel & Associates advocates enterprise innovation that embraces and extends valuable existing technology, the suppliers of that technology must be committed to sustaining the solution's competitive advantages and simplifying its participation in innovative business projects. This paper discusses CA's commitment to improving the business value of CA Datacom through continued investment to sustain the solution's performance and availability advantages and the benefits of leveraging CA Datacom's advantages in innovative software projects.

## Improving Business Performance Requires Technology Commitments

The rapid achievement of business goals has always been the fundamental driver of enterprise technology spending. Today's business markets and industry trends are more dynamic and changeable than ever before. As a result, how enterprises use technology to increase competitiveness and improve business performance is also undergoing dramatic changes. This leads to intense pressure for computing hardware and software to adapt to new business requirements and economic realities.

Rising global competition, for example, drives the need for rapid business innovation, increasingly flexible business processes and rapid analysis of vast amounts of customer data. In response, enterprises are changing their datacenters by including new web-based applications that can be rapidly developed, quickly changed and more flexibly integrated with widely varying data sources. Another example is enterprise response to the rapidly rising cost of power. This is of particular concern for companies in densely populated areas where there is limited ability to upgrade existing power delivery systems. These enterprises are evaluating their processing workloads and platforms with power consumption in mind.

Applying new technologies to these enterprise concerns are widely discussed, and often hotly debated, by technology media and vendors. Yet this focused attention is often seen as being at odds with maintaining proven technologies, such as CA Datacom, that support and sustain current enterprise operations.

Enterprise technology executives are well aware that existing solutions cannot improve business performance nor prosper in their rapidly changing datacenters if they remain static. The usefulness and value of these solutions are extensible only when they are enhanced to perform competitively against alternative platforms as well as being effectively leveraged by new business architectures such as SOA (Service Oriented Architecture). Long-term vendor commitment to the solution is required to drive development of the necessary enhancements. In the case of enterprise databases, this concern is particularly acute as many firms directly depend on long-standing technologies to support current operations and revenue. Additionally, the continuing consolidation of technology vendors, punctuated recently by several large software mergers and acquisitions, can only add to enterprise concerns about the depth of vendor commitment to a solution portfolio.

Software vendors can, and frequently do, make promises declaring their commitment to a specific technology or solution. In Ptak, Noel & Associates (PNA)' opinion, there is only one way to accurately judge the true level of commitment to a technology – by looking for the tell-tale signs in the public track-record of:

- Delivery of enhancements that sustain and expand the solution's competitive advantages
- Delivery of enhancements that simplify its participation in innovative business projects
- Investment in supportive customer programs, and
- Additive value realized by existing customers.

Let us examine CA's investment in CA Datacom against these metrics.

### CA's Commitment to CA Datacom's Competitive Edge

CA's continued investment in mainframe technologies, such as CA Datacom, is not driven solely by long-term commitment from CA's executive management team. Its business model is also derived from specific competitive advantages, such as managing tremendously high workload processing in environments with extreme performance requirements. CA's mainframe business unit is structured to focus on the unique requirements of this market niche and perpetuating CA Datacom's advantages through ongoing investments in several different areas.

One measure of a vendor's commitment to a solution is revealed by examining the vendor's diligence in adapting the solution in response to related technology and business trends. Figure 1 represents just a small subset of CA Datacom capabilities introduced to help enterprises meet new challenges, exploit IBM's advances in System z hardware and architecture, and gain additional competitive and/or operational advantages. Figure 1 also illustrates the depth of CA's belief that high performance is vital to CA Datacom's competitive advantage.

The point is clearly made that exploitation and delivery of high performance capabilities represent a major portion of every new release. It can be as straight-forward as improving SQL command processing (such as join methods or MIN/MAX optimization) or adding support for JDBC 3.0 connection pooling to produce measurable performance gains. It can be more sophisticated, such as the addition of the Parallel Variable Log capability which is a performance boon for customers with constant database updates.

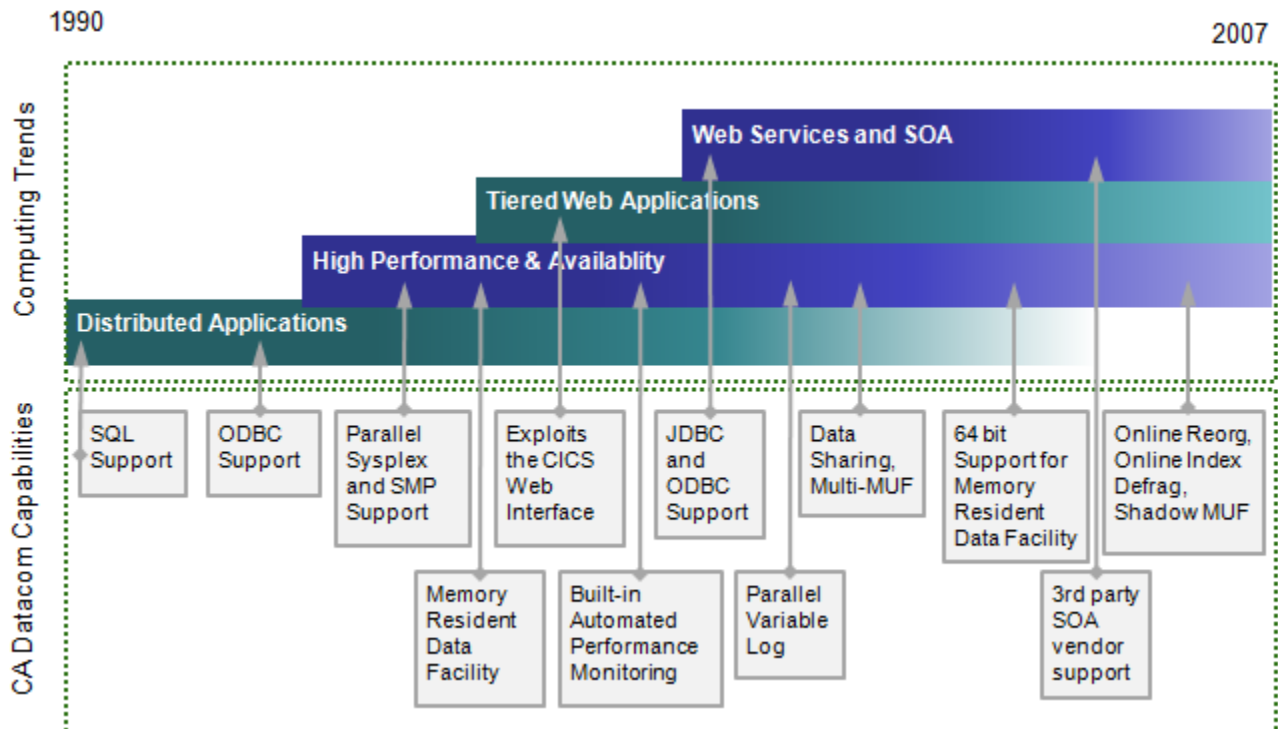


Figure 1: Timeline of CA Datacom support for major computing trends

Another area of investment is enhancing CA Datacom's underlying engine to keep pace with IBM's advances in System z hardware and architecture. For example, CA Datacom exploits the high availability and scalability features of Parallel Sysplex to run without unscheduled disruptions, even as it scales to support enormous transaction volumes. Similarly, CA Datacom's updated Memory Resident Data Facility (MRDF) leverages the introduction of 64-bit memory. MRDF allows users to store large quantities of critical data in memory, reduce I/O operations and provide tremendous performance benefits. CA's exploitation of System z' symmetric multiprocessors (where multiple processors share access to the same 64 bit memory for faster access times) and enterprise storage features, such as parallel access volume, improves transaction processing times and allows for easy scaling (up or down) as workloads fluctuate in size. Such features also allow CA Datacom to service and support larger and more workloads at the same cost.

PNA expects CA will continue these efforts with similar support for IBM' specialized processors, such as System z Integrated Information Processor (zIIP). These processors are designed to off-load processing of specialized workloads from the main processor with the expectation of delivering higher performance at significantly lower total cost of ownership.

One database manager put it this way, "We had to decide where our money would best be spent. Should we convert to a new platform, where we are not really sure what the final performance results will be, or should we invest to get the best performance out of our existing infrastructure? CA's philosophy of 'performance first' when it comes to Datacom releases made that decision easy."

### **Putting Customers in the Driver's Seat**

CA has also invested resources in customer partnership programs, such as performance monitoring and tuning support, where CA staff help customers respond to dramatic increases in database performance demands. CA also manages a Product Advisory Council, made up of technical representatives from companies and organizations which use CA Datacom as a strategic component in their IT infrastructure. This council plays a key role in prioritizing CA's adoption of new technologies and adapting its product functionality to new industry trends.

Another example is the Development Buddy program which provides customers access to pre-beta code allowing direct feedback about prospective new features. The Development Buddy program was started in 2000 with a few select customers becoming key participants in the development of CA Datacom's r10 release. Over the years CA expanded the program to include over 20 highly active customers. These customers with their real-life operational requirements and high performance demands provide significant input into the solution's roadmap as well as on solution testing and feedback.

Customers benefit from these programs in several ways. First, this increases CA's ability to respond to specific customer needs. Many enterprise customers value this aspect of partnership with their software vendors. As Madge Meyer, executive vice president, Global Technology Infrastructure, State Street Corporation noted, "Through our continued partnership with the

CA Datacom development team, we have provided input into the design and functionality of new product features delivered in CA Datacom r11.2. This relationship has enabled State Street to take advantage of performance improvements that are critical to our database environment.”<sup>1</sup>

The development of CA Datacom’s Shadow-MUF is another good example of CA’s responsiveness to unique customer needs. Although sharing data across multiple LPARs is an inherently slower approach to processing, one customer, in particular, decided to implement data sharing capabilities for continuous availability. It became apparent that this customer’s performance requirements could not be met. CA’s development teams responded by working closely with the client to develop a stronger solution. The customer started testing with the earliest versions of the new technology made available to them through their participation in CA’s Development Buddy program. As a result, the customer was able to gain early benefit with a solution to an immediate problem.

These customer-focused programs and projects also improve the quality of CA Datacom releases since they provide the opportunity for the software and its usability to be refined in actual, production customer scenarios. Customers do notice the effort. As one customer noted, “The payback for our early and extended Development Buddy testing is the knowledge that the new software will be stable from the moment it is introduced into our production environment. That comfort is critical to our company.”

## High Performance Delivered

CA’s focus on the high performance market is fueled by two realities. Database performance demands are escalating; and these increases often directly collide with cost management efforts especially painful in the form of “do significantly more with the same” infrastructure strategies. For enterprises, such demands are typically driven by the competition experienced in an increasingly global market. For example, a global consumer-goods company improved service performance and lowered costs at the same time. The company was able to delay planned hardware upgrades because of dramatic improvements in performance and resource utilization through CA Datacom feature enhancements and tuning support.

“During our [initial] search [for a database management system] our team also concluded that the vendor who supports the product would be as important as the product itself. Today, I am glad that we selected CA Datacom and that it ended up in the Computer Associates family,” said the Director of Technology.

In the public sector, such requirements are typically driven by increasing demand for more online public services and the need for improved collaboration between various agencies without increasing public funding. “Over the last several years our workload volumes have grown tremendously,” said one database manager at a large federal agency. “Seven years ago we were

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<sup>1</sup> “NEW RELEASES OF CA MAINFRAME DATABASE SOLUTIONS OPTIMIZE AVAILABILITY AND PERFORMANCE”  
CA Inc. July 10, 2006

processing about 5,000 database operations per second and now we are seeing up to 50,000 operations per second. It [CA Datacom] was able to comfortably scale up to manage that load.”

One reason CA Datacom was able to scale in that environment was its support of traditional, high-performance data navigational commands, which allow extremely fast access to a particular record, group of records, or index entries. “The majority of our users need to quickly look up one or two records out of hundreds of millions of stored records. We’ve found that navigational commands are much more efficient than using SQL commands, so it’s the best approach for those applications,” he continued. “We use SQL for applications that don’t require processing of those rapid ‘is it there?’ type requests, so it’s great that it [CA Datacom] supports both.”

Another reason for its scalability results from CA’s intense research and development focus on aggressively increasing database performance. CA’s commitment to improving performance has been documented in the awards earned by CA Datacom customers. For example, CA Datacom customers have won Grand Prize awards in each of the last three Winter Corporation TopTen contests for Online Transaction Processing workloads.<sup>2</sup> Two additional CA Datacom customers placed within the TopTen for peak workload-OLTP and one customer placed in the TopTen for database size-OLTP in the most recently completed and reported contest.<sup>3</sup>

## Continuous Availability Delivered

The pervasiveness of the Internet and eBusiness has dramatically increased the continuous availability expectations of enterprises and their customers. Online transactions combined with global operations mean that round-the-clock datacenter operation is a necessity, not an option. High performance service is expected when and where it is demanded, even in the face of ever-expanding and increasing workloads, budget freezes, over-scheduled staff and high resource utilization. In the datacenter, this translates to highly variable workloads with an expectation of zero downtime and high speed application-level recovery if, for some reason, an outage occurs.

While most enterprises expend significant effort in preventing unplanned outages, planned outages for routine database maintenance tasks can also be very disruptive. It is a significant challenge for database managers to provide even minimal levels of resource maintenance such as implementing updates, reorganizing data, and executing mandated data backup/restore procedures while maintaining continuous operations in such demanding environments.

CA responded to the pressure for continuous, seamless operations by delivering new capabilities that make important advances toward delivering continuous availability, while avoiding the need for even planned outages. For example, one large financial institution specifically called out

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<sup>2</sup> Winter Corporation specializes in consulting on the performance and scalability of the largest data management systems in use today. In addition to helping clients get maximum performance from their database, Winter Corporation surveys organizations with their TopTen Program to acknowledge those organizations operating the world’s largest and most heavily used databases.

<sup>3</sup> “2005 TopTen Award Winners” Winter Corp, ([www.wintercorp.com](http://www.wintercorp.com))

CA Datacom's Parallel Variable Log processing as being a key component of its disaster recovery operations.

Other features such as online data reorganization and index defragmentation allow CA Datacom implementations to remain open and accessible to user data requests even when it is occupied performing such maintenance tasks. This reduces the number of scheduled downtimes required to maintain peak database performance, which in turn increases the technology's return on investment by increasing productivity and raising customer satisfaction with the services supported by CA Datacom.

### Enterprise Innovation Delivered

Enterprise innovation is the lifeblood of future revenue growth and competitive advantage. Thus the need to adopt and absorb new technology into the operating environment is never going to cease or decrease. However, enterprises cannot afford to abandon proven technologies that perform effectively and efficiently to achieve today's business goals and deliver today's revenue streams. For this reason, PNA advocates enterprise innovation that embraces and extends existing infrastructure and application assets. This becomes even more important as competition for raw materials and scarce resources drives prices higher, and 'green' pressures to 'recycle, reuse and extend lifecycles' escalate.

Interestingly, the advancement of new application architectures (such as J2EE, .Net, SOA, and Web Services) has enhanced the means to leverage existing infrastructure in innovative ways. While much of the current excitement about modern application architectures revolves around creating new applications, it is important to remember that these architectures also dramatically simplify creative reuse of existing technology. "Legacy systems" become valuable "reusable assets." In other words, innovation is no longer at odds with maintaining existing technology investments, as long as those investments perform competitively against alternative platforms and they are modernized to participate in these architectures. The onus is on the technology supplier, in this case CA, to deliver superior database responsiveness to new workloads generated by the new projects and to simplify database access thereby enabling enterprise developers to use current tools and techniques to leverage existing data repositories.

For example, CA Datacom's SQL command extensions can generate standard XML documents from existing data definitions. This allows enterprise developers to reuse non-relational data repositories (such as VSAM, DL1, or TOTAL) and legacy data formats (such as array elements, redefined columns or compound fields) in new web applications with modern application development platforms. Similarly, CA Datacom managers can use familiar tools and utilities to tune both database performance and end-to-end performance of these new SOA and Web applications without sacrificing the performance of existing core applications.

For example, one European financial organization needed to expand their services internationally. This expansion is being implemented with a technology strategy involving a web-based client interface allowing international customers to easily access financial services and a Service-Oriented

Architecture to make business-critical processes ready for the new online transactions. By leveraging existing CA Datacom infrastructure and CA Ideal<sup>4</sup> applications, the organization was able to reduce development costs and achieve earlier time to market.

CA's focus on delivering higher performance delivers additional cost avoidance benefits to enterprise innovation projects. Extensive reuse of existing mainframe applications and data in new business processes and services typically result in dramatic increases in MIPS workloads. Since many organizations depend on technology outsourcing contracts where costs are determined on the basis of MIPS usage and similar measures, processing performance becomes a key factor in controlling fixed operational costs for innovative business projects. Therefore, CA Datacom's continued efforts to scale workload volumes processed by the same hardware will help enterprises keep infrastructure costs in check even as they bring new services online.

## Final Word

Any fair reading of our indicators supports the conclusion that CA has met the product commitment burden of proof. There is documented consistency in delivering CA Datacom enhancements that improved database processing performance, shown by an order of magnitude in the span of seven years at one customer site. Customers are openly supportive of and participate in CA's customer programs. Customers have been able to leverage CA Datacom's open API paths, including the CICS web interface, to deliver new value through innovative SOA projects. In each case, CA Datacom enhancements allowed customers to improve their organization's performance.

Ultimately, customers decide which technologies continue to be valuable assets in spite of other available options. Since Web and SOA application architectures facilitate and encourage business innovation that embraces existing CA Datacom implementations, customers seem to have focused on CA Datacom's performance and availability as sources of enterprise value that should be leveraged wherever possible. As one CA Datacom manager noted, "I am always impressed by the fact that whenever our company requires a large and or important performance improvement, CA Datacom has always been able to deliver it."

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<sup>4</sup> CA Ideal is an application development system that supports the entire application life cycle (including design, development, testing, production and maintenance) and is closely integrated with CA Datacom.



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