IBM

Electronics Value Chain Management and IBM @server zSeries servers

A technology framework to help your electronics business compete in an increasingly global, on demand world

Create an open, integrated IT infrastructure to facilitate enterprise collaboration.

Electronics firms around the globe are transforming the way they do business in the new, on demand era. As the e-business world evolves at a staggering pace, change remains the only constant. During this challenging time—and in these days of intense economic pressure—the success of your company may actually hinge on your ability to create an open, well-integrated IT infrastructure.

You need an IT infrastructure that has the flexibility, resiliency and reliability to help make your organization more responsive and more cost-effective. The key to this transformation is enterprise collaboration, which can connect business processes, systems and functions—both within your organization and outside it—to help create a networked business designed for optimum performance.

Enterprise collaboration can lead to a flow of work, ideas, transactions and opportunities that spread immediately among the employees throughout your company and out to business partners, customers and suppliers. This integration can help you respond with speed and flexibility to marketplace fluctuations and dynamic customer demands, as well as unpredictable—even unknown—business challenges that may lie ahead.
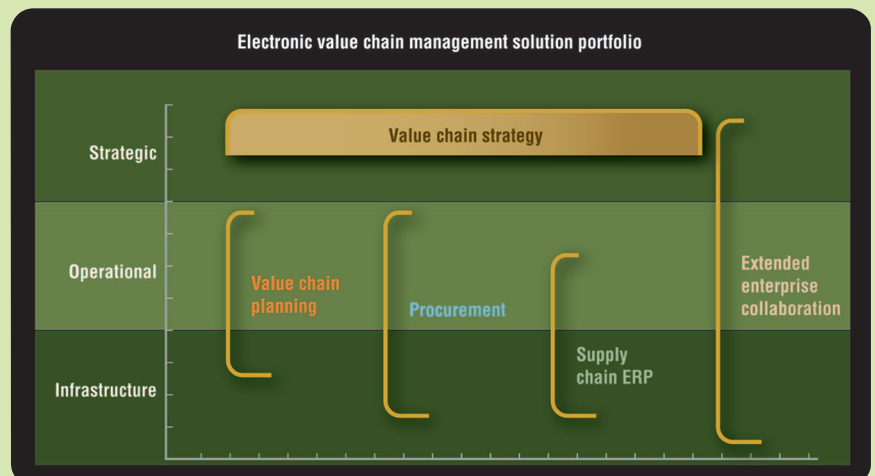
How can you evolve your electronics business and help secure its future? By creating business processes and systems that are integrated end-to-end, delivering new functionality that can transform your business into a leading-edge company well positioned to compete and win in the marketplace.

Enterprise collaboration

Recently, "enterprise collaboration" has become something of a catchphrase in the marketplace. Is it simply a buzzword for something that already exists, or is it the next wave in e-business evolution? Put simply, it represents one approach to reinventing 20th-century business structures and best practices, and it could lead to a major shift in the way the electronics industry does business.

What is enterprise collaboration?

Enterprise collaboration, through the integration of a full range of processes, gives you the means to connect partners along the value chain and significantly reduce your costs. Ideally, enterprise collaboration can unlock benefits previously "frozen" in the value chain. Each partner on its own would not be able to achieve these benefits—only by working together and frequently

Electronic value chain management solution portfolio

Strategic	Value chain strategy			
Operational	Value chain planning	Procurement		Extended enterprise collaboration
Infrastructure			Supply chain ERP	

EVCM solutions from IBM address the infrastructure, operational and strategic needs of your enterprise.

exchanging data, information and knowledge can the door be opened to the potential of mutual cost-savings, process optimization, inventory reduction and flexibility improvement. Enterprise collaboration is meant to be an iterative, bi-directional process to take costs out of the entire value chain.

It is crucial in enterprise collaboration to understand what types of information or data are needed—and when they are needed—by value chain partners. A demand forecast sent today but needed tomorrow might change in the interim and have to be re-sent. A poor understanding of partners' information needs and timing can lead to work that could have been avoided.

Virtually unlimited, continuous collaboration could conceivably become the norm in many industries. In the electronics industry, insiders are claiming that information will flow freely, decisions will be made jointly, rewards will be shared, industries will be reshaped and companies will change their structures

What is EVCM?

Electronics Value Chain Management (EVCM) is a technology framework that enables electronics companies to more efficiently integrate and manage business processes along their entire value chain. EVCM helps IT organizations proactively monitor and respond to on demand requests and deliver industry solutions— quickly, consistently and cost-effectively.

EVCM solutions from IBM bring together a portfolio of software and hardware products, as well as world-class IBM services, research and financing capabilities. These solutions are built around open technologies, allowing you to address changing needs and integrate new processes with current business systems. By helping align business units with IT processes, EVCM solutions from IBM can help your organization reduce costs, increase quality and accelerate return on investment.
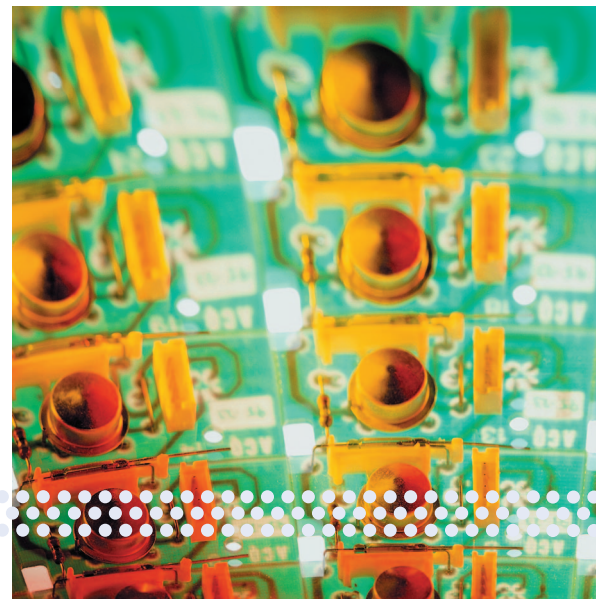
as a result. Others believe that this process will take years rather than months and that it will not be as clearly delineated. Even the most skeptical observers may be converted by the simple fact that collaboration aims to increase business value in companies[1].

During the recent recession, numerous electronics companies have deployed effective collaboration techniques to improve operations. The next big differentiator for technology companies may be the ability to harness collaboration for new product development. With the recession gradually coming to an end, corporations with collaborative supply chains and collaboration experience will

Optimize and integrate your business processes with EVCM.

be better positioned to benefit from applying this approach to the design and development of their products. Needless to say, they will also stand to reap the benefits for years to come.

The IBM Electronics Value Chain Management (EVCM) solution
The electronics industry is a truly global market. It's now common to have an original equipment manufacturer (OEM) located in Europe with suppliers in Asia and customers all over the world. Electronics manufacturers are also shifting from traditional, vertically integrated structures to disaggregated, horizontal competition. And those manufacturers face mounting pressures to produce more innovative products, faster, at lower price points, with higher quality, all while increasing revenues and extending their existing distribution channels.

Many electronics executives are attempting to manage these challenges by treating their ecosystem as if it were

one virtual enterprise, with the ultimate goal of being fully transparent within the value chain and synchronized at every point in time. This may be accomplished only through common processes as well as constant communication and close coordination with the partners in the ecosystem: collaboration among the enterprises.

The IBM Electronics Value Chain Management (EVCM) is a technology framework developed to help businesses address the management of value chain management processes, from sourcing to fulfillment, in today's highly outsourced environment of the electronics industry. EVCM is designed to enable critical business processes using standardized technologies and services so you can develop, enhance, integrate and orchestrate different processes, applications and collaborations in efficient, operationally tuned environments.

EVCM is designed to enable an electronics client's IT organization to proactively monitor and respond to on demand requests and deliver industry solutions in a fast, consistent and low-cost manner. EVCM supports existing technology investments, as well as relevant open software and industry standards, accommodates heterogeneous physical infrastructures and interoperates with best-of-breed applications.

EVCM brings together a portfolio of proven, function-rich software and hardware products and services, as well as research and financing capabilities that make IBM an ideal long-term strategic partner for the IT environment of electronics enterprises.

EVCM represents the technology framework that supports solutions through their entire plan, build and run phases. It is built around common platforms, reusable patterns and technology services that address challenges for electronics solutions. At the same time, it

IBM zSeries system architecture supports open technology standards, enabling effective application and business process integration.

underpins the transformation of the IT organization into a service-oriented organization utilizing standard assets, supporting a proactive approach to IT enablements. It also inherently supports an early alignment of business units and IT, helping to reduce costs and risk, accelerate time-to-value, and increase quality.

EVCM includes e-procurement, advance inventory management, B2B, ERP and integrated supply chain solu-tions, as well as the collaboration and integration services required for these offerings.

In the end, EVCM can bring together technology and services to help ensure a successful implementation for your business. The *technology* consists of highly reliable architectures and underlying technologies that are secure and scalable. A portfolio of EVCM *technology services* allows an optimal configuration to fit your specific requirements.

Creating an on demand operating environment

The vision of the on demand environ-ment is for every employee or customer to have every application and process

IBM @server z990

at their fingertips at any given moment. This drives the need for an on demand infrastructure that is:

- *Integrated* to help enable multiple platforms, technologies and applica-tions to work together so information can flow freely throughout the enterprise

- *Open* to encourage diversity, better enable integration of technologies and provide flexibility to choose the best mix of applications and tools
- *Autonomic* to help improve systems management and gain efficiencies in complex environments
- *Virtualized* to help increase systems utilization, maximize uptime and allo-cate resources effectively

Achieve security-rich, on demand computing with zSeries servers.

How can you deliver this flexibility to your electronics business? You need a closely integrated IT infrastructure in which the application environment is based on open standards that can enable rapid deployment and integration of the applications that support your business processes. And you need a system environment that can allow for true virtualization within the infrastructure, helping to deliver IT capabilities on demand. Finally, you need to build this environment on a highly reliable, secure and scalable server platform.

Since EVCM is a technology framework that supports solutions across all of the key phases of the product lifecycle, one can expect to deploy applications on a variety of IBM platforms, including IBM @**server**® pSeries®, xSeries® and zSeries® servers. This brochure will focus on the characteristics and benefits that make the zSeries platform—both in part or in its entirety—ideally suited for the critical demands of the electronics environment supported by EVCM.

Why zSeries servers are the right choice for EVCM
The functionality of zSeries servers makes them ideal for your on demand business. zSeries has historically set the standard by which many other server platforms are measured. There are profound characteristics in architecture and system design that distinguish zSeries servers as a cornerstone for an on demand operating environment in your EVCM solution:

- zSeries servers promote on demand computing with their inherent ability to pool resources and apply them dynamically whenever and wherever they're needed.
- zSeries servers provide a fluid yet security-rich environment in which applications, data and business processes have access to the various resources managed with greater flexibility, to help achieve higher utilization levels and lower overall cost.

- zSeries servers support open standards and are able to run Linux alongside traditional operating systems, so you can run and integrate new applications quickly and easily with virtually unmatched reliability.
- zSeries servers offer self-healing, self-managing features so your system can constantly fine-tune itself to provide optimized levels of performance for today's demanding requirements.

Whether you need to scale up for growing workloads or use virtualization to scale out and integrate various systems—zSeries servers are designed to help you integrate your business processes, lower costs, optimize your IT investments and drive your core business. Virtualization technology on zSeries servers can make it possible to consolidate and efficiently manage ten to hundreds of virtual servers on one platform, and can also help you rapidly deploy new virtual Linux servers in minutes. Running Linux on zSeries servers can help you reduce the costs and complexity associated with managing server farms.

zSeries architecture supports a broad range of strategic software and middleware, including the Linux and z/OS® operating systems; select IBM WebSphere®, Lotus® and Tivoli® products; and the IBM DB2® database server. WebSphere Application Server for z/OS, a Java™-compatible Web services application server, is specifically designed to utilize the unique qualities of service provided by zSeries hardware and the z/OS operating system.

Here are some more reasons the zSeries platform is the right choice for EVCM:

Systems management and workload controls: Installations today process different types of work with different resource requirements. Effective systems management makes the best use of resources and can help maintain the highest throughput while promoting the best possible system responsiveness. z/OS Workload Manager (WLM) makes this possible by allowing you to define performance goals and assign a business importance to each goal. You prioritize the business goals and the system is designed to dynamically allocate and monitor resources such as CPU and storage to meet those goals. These workload priorities can change over a 24-hour period—the zSeries platform is able to manage that change, re-prioritizing work dynamically as the workload shifts.

The zSeries Intelligent Resource Director (IRD) then directs the physical resources to the logical workload. The workload and self-management capabilities provided by WLM and IRD are designed to allow z/OS to handle unpredictable workloads and meet response goals. These capabilities can effectively manage CPU and I/O resources—with limited human intervention for setup and operation—making it one of the most advanced self-managing systems on the market.

IRD and WLM help establish a more synergistic relationship between the operating systems and the hardware with respect to the allocation of resources among logical partitions. The WLM component of z/OS is responsible for helping to ensure that customer

Leverage customized capacity with high availability, security and systems management capabilities.

policy goals are met for the set of diverse applications and workloads that a customer may run. zSeries servers are able to extend this capability to manage workflow across clustered systems. In a clustered environment, you can make changes or adjustments on the local system, or redistribute work across all systems in a cluster as needed. Leveraging these components across multiple systems can allow you to manage your entire infrastructure as a single entity, driving resources to the most critical work at the most critical times—without having to manually manage workflow.

WLM and IRD are part of the IBM autonomic computing initiative, which aims to help customers reduce the cost and complexity of their e-business infrastructures and overcome the challenges of systems management using systems that self-optimize, self-configure, self-heal and self-protect.

Availability: The built-in availability features on the zSeries platform help you avoid both scheduled and unscheduled outages and aid in disaster recovery. How? By detecting potential problems at the earliest possible moment and taking the necessary actions to correct them, thereby helping to reduce any impact they might have on your applications and data.

The zSeries platform offers leading-edge fault tolerance and error checking. If a failure occurs, the built-in redundancy on the zSeries platform can shift the work over from failing components to ones that remain operational, without interrupting end-user service. Failed components may be removed and replaced while the system is still active. Failing applications, caused by system or process failures, can be automatically restarted on still-healthy systems by the Automatic Restart Manager,

which recovers all work in progress at the time of the failure. New work requests are directed to other data-sharing instances of the server to provide continuous application availability, masking the failure and subsequent recovery from end-users.

zSeries servers can also deliver exceptional application availability within a systems image, which can range from a single system with up to 32 processors to a cluster of up to 32 separate zSeries systems. Leveraging key infrastructure components, such as Workload Manager, and several application routing technologies, business applications can be updated or revised and rolled into production—with minimal impact on business flow. End-users may continue to process business requests without interruption to their service, allowing high availability to support an on demand environment.

Applications can be moved among different systems without user interruption, making use of data sharing, application cloning and the coupling facility.

IBM @**server Capacity on Demand:** You should get what you need—when you need it. And you should pay for only what you use—when you use it. That's the basic principle underlying IBM @server Capacity on Demand features.

You need the flexibility to rapidly increase or decrease your computing capability as requirements change. This may mean a permanent capacity increase for planned growth or a temporary capacity increase for seasonal or unpredictable peak periods. IBM offers a fast, non-disruptive way of activating "extra" processor capacity as you need it—IBM @server Capacity Upgrade on Demand (CUoD) for a permanent increase of processing capability, and On/Off Capacity on Demand[2]

(On/Off CoD) for a temporary capacity increase that lets you revert back to your previous processing level.

Security: In order to adequately manage your security infrastructure, you need to understand your enterprise's security needs and policies, and then obtain, configure and control the products and services necessary to implement those policies. zSeries servers can help you manage your security facilities, whether you are protecting a single processor or a massive cross-platform network that includes UNIX®- and Microsoft® Windows®-based systems.

Smart businesses will take the right measures to safeguard their infrastructure now because the cost of not doing so is high. zSeries servers can help protect your business on a number of

fronts. With leading-edge technologies such as high-performance cryptography, large-scale digital certificate support, industry-leading Secure Sockets Layer (SSL) performance and advanced resource access control function, zSeries servers offer robust security features designed to meet the needs of e-business and help you protect your investments and assets with an eye toward the future. Intrusion Detection Services are designed to allow zSeries servers to resist network-based attacks while embodying industry and international standards.

IBM TotalStorage systems
Data proliferates rapidly in today's on demand world, and your ability to leverage that data across your enterprise can be the difference between success and failure. IBM's integrated storage solutions include everything from tape, disk, Network Attached Storage (NAS) and Storage Area Networks (SAN) to consulting and

Add IBM storage products, services and support for an end-to-end solution.

implementation services. All are designed to help you seamlessly store, manage and access your data.

IBM TotalStorage® products for zSeries servers include:

- **IBM TotalStorage Enterprise Storage Server®** (ESS): helps set new standards in performance, automation and integration and has capabilities that support continuous availability to data for the on demand world.
- **IBM TotalStorage Virtual Tape Server** (VTS): an enterprise tape solution designed to enhance performance and provide the capacity required for today's backup requirements. The adoption of this solution can help reduce batch processing time, total cost of ownership (TCO) and management cost.

Service and support

IBM EVCM solutions include a portfolio of technology services that can be configured to suit the specific requirements of your electronics business. These services include access to technology and ready-to-use platforms.

IBM Global Services utilizes existing services for installation, customization and tuning of the Integrated Platform for e-business on zSeries servers. Existing IGS services include:

- Linux for zSeries Rapid Deployment Service
- IBM Installation Services for DB2 Universal Database™ Enterprise Extended Edition for AIX®, Microsoft Windows 2000 or Microsoft Windows Server™ 2003, Sun Solaris, HP/UX and Linux

- IBM Installation Services for WebSphere Application Server
- IBM Network Consulting, Integration and Deployment Services—for highly secure networks
- Linux for zSeries Solution for e-business

IBM Business Continuity and Recovery Services, which actually implements the EVCM solution, offer:

- Backup and recovery options for multi-vendor information technology
- Services to help you assess and improve the recoverability of your IT infrastructure
- Continuity services designed to protect your critical business processes
- Services to help you assess the impact of a disruption to your critical business processes
- Continuity services designed, operated and managed for you by IBM

IBM Global Financing offers total solution financing, which provides innovative and tailored solutions designed to make the acquisition of IBM @server Integrated Platform for e-business on zSeries servers manageable and affordable. IBM Global Financing Solutions can help your business:

• Manage budget constraints by helping you finance a comprehensive solution with favorable terms
• Reduce large up-front costs with deferrals and flexible payment structures
• Afford more, and pay less by getting a more comprehensive solution while making low monthly payments
• Lower your TCO by financing the solution instead of outright purchase
• Meet changing capacity requirements by adding capacity or upgrading to meet dynamic business demands
• Simplify budgeting and administration by combining hardware, software and services into a single contract

For more information
To learn more about how the IBM EVCM custom solution can help your electronics business achieve measurable results, contact your IBM sales representative or go to:
ibm.com/industries/electronics.

For more information specific to IBM @server systems, visit:
zSeries:
ibm.com/servers/eserver/zseries/
pSeries:
ibm.com/servers/eserver/pseries/
xSeries:
ibm.com/us/eserver/xseries/

Summary
Enterprise collaboration can connect business processes, systems and functions—both within your organization and outside it—resulting in a flow of work, ideas, transactions and opportunities. This integration can help you respond with speed and flexibility to marketplace fluctuations and dynamic customer demands.

In an effort to foster collaboration, electronics firms around the globe are transforming the way they do business. The IBM Electronics Value Chain Management (EVCM) solution, with the zSeries server as its backbone, can deliver the flexibility, resiliency and reliability you need to stay competitive in the on demand marketplace. And it can help you create business processes and systems that are integrated end-to-end, delivering new functionality that can make your business more responsive and more cost-effective.

IBM®

[1] "Back to business—Collaboration as a way of
life." IBM Business Consulting Services,
October 2002.

[2] On/Off Capacity on Demand available only on
the IBM @server z990.

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