

Impressive IBM Tivoli Service Management Center for System z - Exploits z Strengths to Deliver Service Management Enterprise-wide

About this Executive Paper

IBM Tivoli Service Management Center for System z (SMCz) brings advanced, ITIL-based service management and process automation to all native System z workloads. It also turns the mainframe into a service management hub that centrally manages services across the entire enterprise IT infrastructure, fully exploiting unique System z Quality of Service (QoS) strengths.

In this new, high-level Executive Paper, mainframe analysts Software Strategies introduce, describe, and assess the new IBM Tivoli SMCz offering. Broad analyst recommendations on why, how, and when, mainframe users should adopt the powerful, new SMCz approach are given here.

1. Positioning IBM Tivoli Service Management Center for System z (SMCz)

IBM Tivoli SMCz Overview

This new solution (*IBM Tivoli SMCz*) was first announced at the System z10 Enterprise Class (*z10 EC*) mainframe launch, held in four cities worldwide on February 26th 2008. A second announcement was made at IBM's PULSE conference on May 18th 2008. SMCz extends IBM Service Management (*ISM - see below*) for the System z mainframe. It delivers a **process automation** and **service management** infrastructure through new integrated IBM Tivoli software. This exploits the high power and unique QoS of System z, equipping it as enterprise-wide hub for business service management. This positioning, the elements that SMCz combines, what it seeks to deliver and integrate, and the System z unique strengths it exploits, are shown in our Figure 1.

SMCz now enables the management of many complex IT operations disciplines to be automated. It allows policy-driven processes, such as incident and problem management, change and release, discovery, and business service management, to be seamlessly managed enterprise-wide from the mainframe environment (*and/or from distributed platforms with ISM too*).

SMCz substantially extends onboard System z operations automation by adding advanced process automation and service management capabilities. Customers can now also use SMCz to drive business service and Information Technology Infrastructure Library (*ITIL*) process management over all the systems in their enterprise. This **centralized service automation hosted on System z** exploits the mainframe's unique QoS capabilities.

SMCz combines innovative, new, IBM Tivoli-researched/developed software, enhanced releases of well-proven IBM Tivoli System z operational management tools, plus products from recent IBM Independent Software Vendor (*ISV*) acquisitions. These are complemented by **industry-standard best practices based on ITIL** (*see below*).

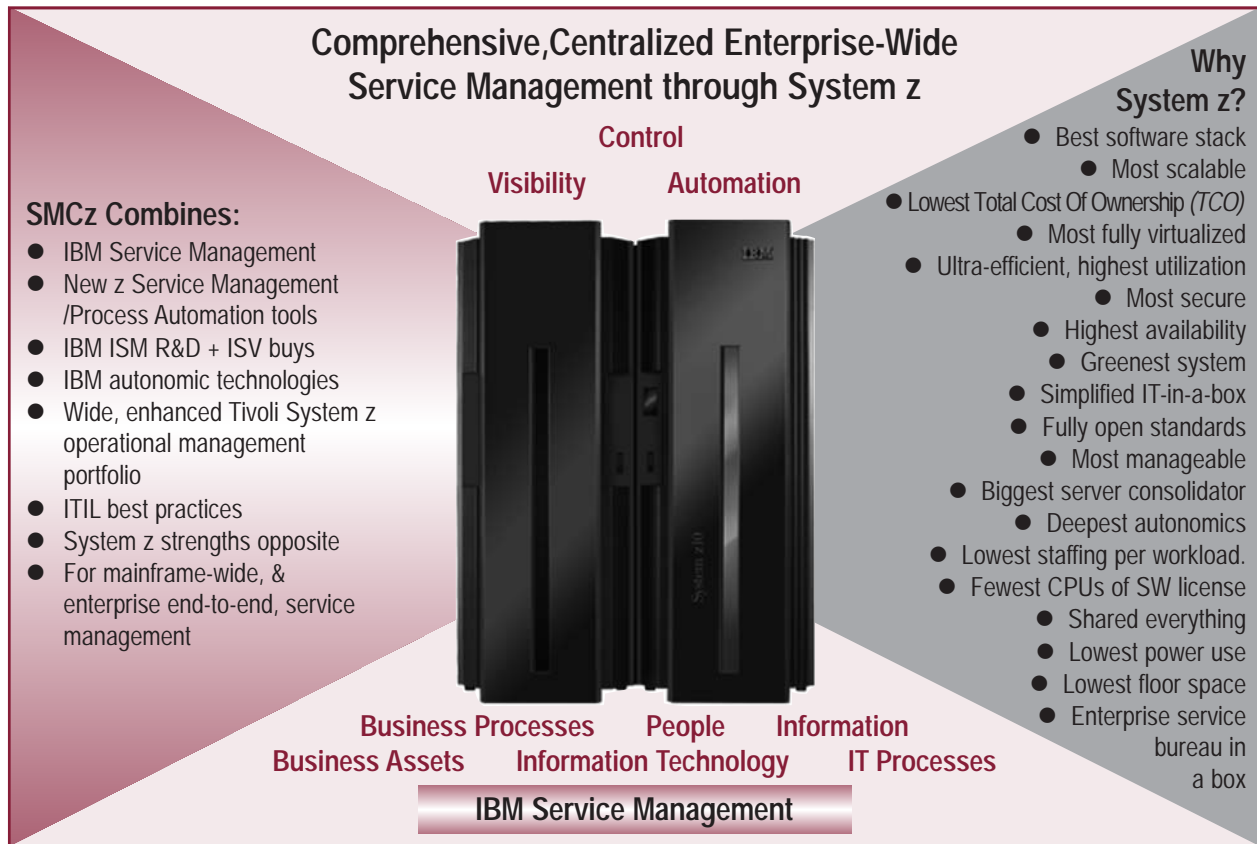


Figure 1: IBM Tivoli SMCz - Comprehensive, Centralized, Enterprise-wide Service Management through System z

SMCz, IBM Tivoli claims, offers significant advances in IT operations efficiency, and improved business services delivery over enterprise IT infrastructures, as well as on the mainframe itself, because it extends service automation and process integration over a wider set of IT operational assets. It ties IT performance to business goals, reduces IT operating costs, meets tougher security, regulatory, and compliance demands, and improves business-user satisfaction with IT.

Extends IBM Service Management

SMCz extends ISM, introduced by IBM Tivoli in October 2006. ISM gave customers better ways of **managing their business of IT** and is IBM's approach to IT Service Management (*ITSM - see below*). With larger businesses today now almost totally dependent on their IT systems, improving core business services invariably means also improving the supporting IT application service, whilst managing the two in close lockstep.

ISM added a service management and process automation platform for the enterprise, with integrated solutions using a common data model. ISM directly links and aligns IT and business objectives by giving end-to-end visibility into business service delivery, control over the way processes and IT assets are governed, and advanced automation for

operational agility. ISM thus provides the software foundation of service management by automating complex IT tasks/activities over all management domains. It provides the adopter with end-to-end performance management over their whole IT infrastructure.

ISM combined IBM Tivoli's unquestioned leadership in end-to-end operational systems management software, its pioneering autonomic technologies, and IBM's market-shaping Service Oriented Architecture (*SOA*) developments. To these strengths were added new service management and process automation tools, a common data model, proven service management best practices (*from IBM sources, and from ITIL, COBIT, CMMI, and eTOM frameworks, etc.*), and deep consulting services skills. ISM solutions thus consist of:

- **Process Management Products:** Which integrate and automate IT operational management processes across organizational silos, and across IT platforms, bringing increased IT responsiveness and improved flexibility.
- **A Service Management Platform:** Software that standardizes and shares crucial IT operations information. This allows the close integration of service management people, processes, information, and technology over the enterprise, for improved service delivery.

- **Operational Management Products:** Which automate the diverse areas of application or business-service, operational management.
- **Best Practices:** Worldwide practical experience; based on proven consulting engagement experience and leading frameworks. These enable users to most fully exploit their current investments, and to make service management and ITIL more easily and quickly actionable.

ISM directly links and aligns IT and business objectives.

ISM thus offers improved staff productivity and cost reductions from automation, provides higher service resilience/availability, increases IT operations productivity, and reduces IT infrastructure support costs. It also helps to ensure compliance and control whilst reducing IT environment risks, and provides an auditable IT operation. Finally, ISM enables faster and better quality change and configuration management, allowing a better response to new business needs. Strong claims indeed, but eighteen months of practical experience has brought many ISM customer success stories to light.

ITSM - Big Advance on "Silo" IT Resource Management!

ITSM is the modern discipline of managing Information Technology (*IT*) system operations. Today's IT must be more business-focused (*less technology-driven*), and must respond better to increased global business complexity, faster changes, cost and competitive pressures, and tougher compliance mandates. ITSM emphasizes improving an IT operation's contribution to the company's real business. It is about managing and raising end-to-end quality of **business services** (*see below*), and with improving relationships between IT operations and the business customers (*sometimes fraught!*). ITSM is thus fundamental to **good IT governance**, which is vital today as more boards hold IT groups accountable for business service delivery to suit faster-changing business needs/standards.

ITSM is a process management/improvement-based discipline. It thus has much in common with business process improvement methodologies like Total Quality Management (*TQM*) and SixSigma, and Business Process Management (*BPM*), but dedicated to improving IT operational business service delivery.

ITSM greatly differs from traditional, technology-centric system management based on **IT resource/asset management**. This monitors/manages each IT system, subsystem, or software layer individually. Achieving

improvements in individual resource utilization, availability, and performance are real benefits. However, in today's modern, distributed and globalizing businesses - heavily dependent on complex webs of IT applications and systems - such "silo" system management methods are far from enough.

Such "silo" management cannot view **high-level business service performance**, nor relate this directly to the real business service Key Performance Indicators (*KPIs*). Business users/managers care only for the real KPIs they use to measure the success level of their business services/processes in business (*not IT technology*) terms. They expect business service management solutions to give them clear visibility on how their business service is doing against their business KPIs, and whether the underlying IT solutions are impacting or enabling their KPI attainment, in real-time.

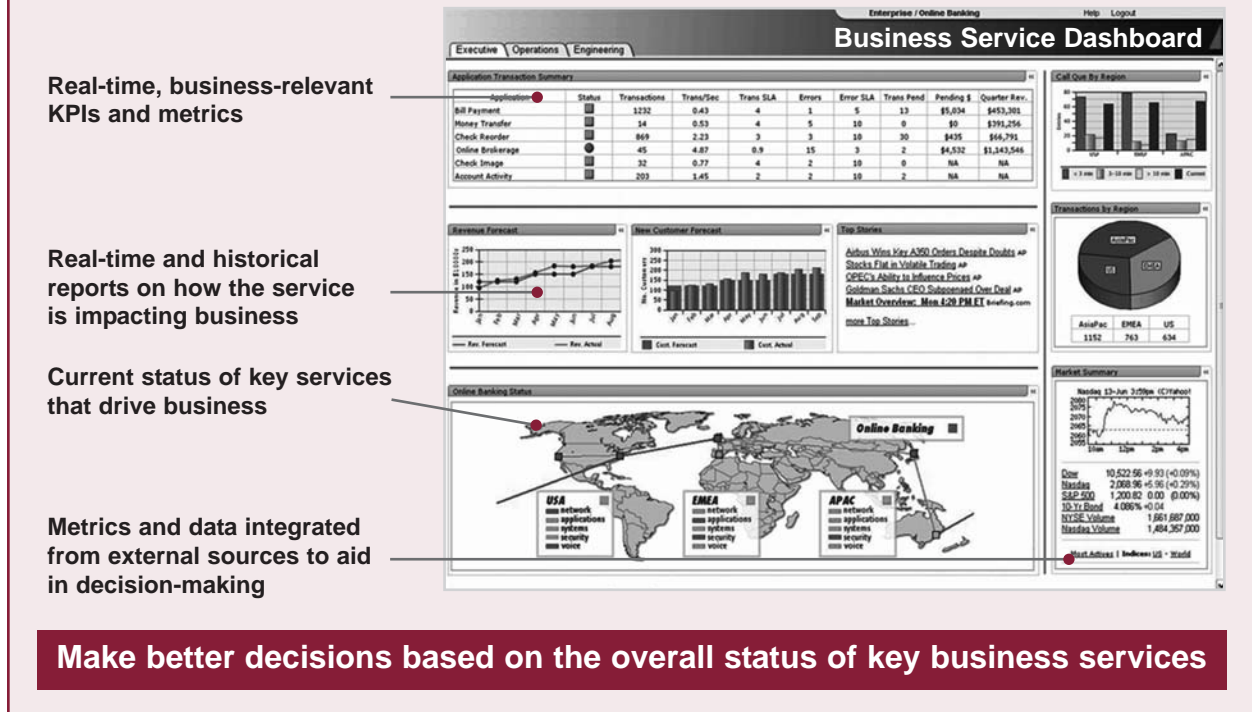
Such "silo" management cannot view high-level business service performance, nor relate system performance/availability to real business service KPIs.

Focus on Business Services in ITSM, ISM & SMCz

Business services can be whole business processes, such as new customer acquisition, or insurance claims processing. They may also be smaller components, such as a new customer credit check step (*in a customer acquisition process*), or a loss adjuster report step (*in insurance claims processing*). Today, business services are often supported by several IT software components (*services*), middleware layers, and may run over multiple IT systems and network links.

"Service" (*in the ITSM context*) may refer to any IT application or system we need to manage. Rapid, widespread, enterprise IT adoption of **SOA** brought service concepts to wide prominence. SOA sees applications as loosely-coupled, collaborating services that intercommunicate via messages, passed over an enterprise service bus, through standard interfaces. New SOA composite applications are assembled today by linking several software services (*existing and new*) into an improved **business workflow**, better supporting the real **business processes**. **BPM** is the control, optimization, and direction of business processes, including of the SOA systems that support them. Whilst SOA offers compelling benefits, it adds service management challenges, and increases the need for ITSM.

SMCz Business Service Dashboard = Visibility & Control



Make better decisions based on the overall status of key business services

Figure 2: SMCz Delivered and System z-based "Business Service Dashboard"

The **top-level business service visibility and control** SMCz on System z delivers is exemplified by the **Business Service(s) Dashboard** example, for a banking business, here in Figure 2. This combines, into one portal dashboard display, all real-time business KPIs/metrics from the live banking services, shows the health of the underlying IT systems, and incorporates useful, external data feeds. Such clear **business service visibility** can be understood at a glance by business managers/users, as well as IT professionals, and helps both to focus on a common business cause together.

ITSM Best Practices Frameworks, ITIL, Standards

ITSM frameworks provide best practices guidance for the main IT operations areas. Most focused on ITSM is **ITIL** that was UK-government-developed and is now broadly adopted worldwide. ITIL is fully supported by ISM, and the new IBM Tivoli SMCz solution portfolio. IBM has made major contributions to ITIL development and refinement over many years, and is today foremost amongst its vendor supporters. The latest books, ITIL v3, were published in May 2007. Control Objectives for Information and Related Technology (**COBIT**), the other leading framework, is more broadly addressed to IT governance and control with a security focus. Several other frameworks provide partial support.

Adopting well-proven, widely-used best practices can significantly lift IT performance and service quality, where current processes are not yet "best-of-breed". Self-assessment tools help IT groups rate their current standing on best practices, and pinpoint Areas For Improvement (**AFIs**) in service management.

Two main professional groups cover ITSM. These are the IT Service Management Forum (**ITSMF** - *an international, chapter-based group with close ties to ITIL and the ISO/IEC 20000 audit standard*), and the IT Service Management Professionals Association (**IT-SMPa** - *supports IT service managers with education and information sharing, etc.*).

ISO/IEC 20000 is the most relevant international standard for ITSM qualification, certification, auditing, and benchmarking. The first worldwide standard aimed at ITSM, it describes an integrated set of management processes for effective delivery of services to the business and its customers, closely aligned with ITIL's approach. ISO/IEC 20000 Certification and Qualification Schemes are owned/managed by the ITSMF.

Our Analysis

Distributed Web applications, new SOA composite applications, and extended/new mainframe workloads, often carrying high transaction volumes, many needing 24*7*365 availability and/or global accessibility, created major new IT

management challenges. IT users have long needed more sophisticated management/automation, with tools better geared to manage, monitor, support, secure, and optimize, complete business services that run over heterogeneous IT infrastructures, including the again-favored System z mainframe.

System z customers long used the broad range of IBM Tivoli resource management tools to manage the operating system images/LPARs, System z subsystems, and middleware servers, running on their mainframes. These environments include varied combinations of z/OS, z/VM, zLinux, DB2, IMS, CICS, WAS, UDD, WMQ, TCP/IP, and RACF, and others. SMCz now enables these mainframe customers to move forward to a more advanced, centralized, System z-based **service management approach** spanning the enterprise. This fully exploits the operational and QoS advantages of the mainframe, and brings IBM's advanced new ISM software technology squarely to the center stage on System z.

SMCz integrates well-proven, enhanced and integrated IBM Tivoli operational systems management, monitoring, automation, and security products for System z platform environments, together with associated professional services and established ITIL best practices. It adds an integrated System z implementation of ISM and process automation software for the first time. SMCz therefore now provides a complete implementation of ISM, specifically for/on the IBM System z mainframe that can "service manage" the whole enterprise at a business-service level. SMCz thus offers System z customers **higher-visibility, better-controlled, and more fully-automated** management of the business services provided across the enterprise; whether run on distributed or mainframe platforms.

2. Business/IT Imperatives for Service Management on System z with SMCz

Compelling Business & IT Case

Our research found deeply-compelling, business, environmental and IT organization drivers in the mid-2008-on global economic environment that makes this development of high strategic business and IT importance. The arrival of ISM on the recently-renewed System z10, now enabled by IBM Tivoli's SMCz, brings to bear a new force. Customers may use this to gain major business service improvements, and to win substantial IT operating cost reductions.

Bigger Gains When Business & IT Process Integration Combined

Studies clearly revealed that enterprises which implemented extensive business process integration attained significantly

lower costs, much higher customer satisfaction, and much higher profit margins than peers who did not. (*IBM CEO Study 2007.*) To date, business process integration was seen as a discipline separate from IT process/management integration. But today's IT systems and processes are now so tightly interwoven with, and are the primary support and enablement for, core business processes, this old divide no longer makes any sense. Business process integration/improvement must now be combined and developed simultaneously with IT process integration/enhancement, for much higher synergistic benefits. This is what SMCz seeks to help enterprises using System z to achieve.

Why Service Management? - "Silo" Management Not Enough!

Traditional IT systems management long used asset/resource approaches. Management software vendors built monitoring/resource automation tools for each IT asset/resource/platform (*hardware and software*). Large enterprises used many such tools, often from multiple vendors, each (*usefully*) managing one "silo" in splendid isolation.

Fifteen years ago, business applications mostly ran inside a single platform. On such "mono-platforms", "silo"-resource-based system management was enough to monitor application performance, and to troubleshoot application issues.

However, the norm today is complex business processes running on tiered software services, linked applications over several system platforms, each part managed by specialized IT experts, and grouped by domain and platform expertise. Their "silo" management tools cannot usually communicate, nor provide consolidated views of the whole business service. Thus, they offer no single point of control for such "multi-everything" applications, many now migrating to SOA.

Without shared communication, and without end-to-end, business-service information, operational issue diagnosis/resolution is difficult and time-consuming. Bad-tempered meetings, with frequent "finger-pointing" between the various "silo" teams concerned, are frequent and frustrating to all involved.

Gross sub-optimization and big inefficiencies at the business service level, are near-guaranteed by the "silo" approach. Business service directors/managers find the "silo" model totally unsatisfactory too. Their business service SLAs cannot be reliably delivered, support costs are too high (*with the multiple skills needed*), and times to resolve business service issues are far too long.

ITSM overcomes these severe issues, and is becoming almost mandatory, as enterprises wrestle to manage their complex business services over complex, heterogeneous

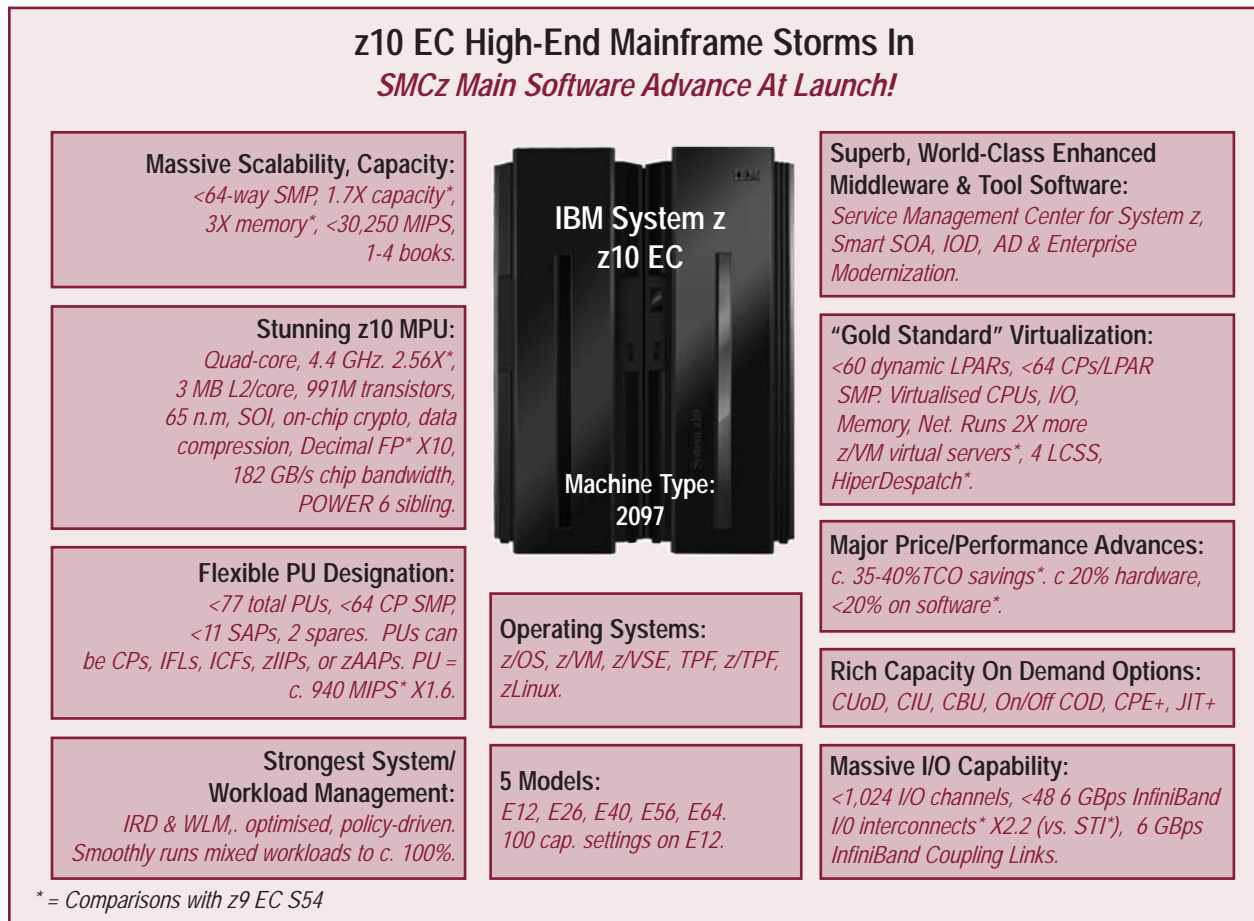


Figure 3: z10 EC High-end Mainframe Storms in - SMCz Main Software Advance at Launch!

infrastructures. IBM, long the market leader in enterprise systems management, has taken a lead in service management with its ISM strategy, and now its unique, new, IBM Tivoli SMCz.

SMCz Timely as Mainframe Resurgence Accelerates

Powered by IBM's multi-\$B, decade-long mainframe transformation, driven by burgeoning, new-to-mainframe workloads and new, enterprise-wide roles, System z enjoyed major resurgence in the last decade. Worldwide installed mainframe MIPS capacity rocketed 6-fold over 11 years; topping 12.0M MIPS (*end 2007*). Specialty processor engines, advanced new middleware, and radical pricing changes drove this massive, new-workloads-fueled growth. Modern System z mainframes are now rightly lauded and respected for their extraordinary scalability, unequalled QoS capabilities, superb availability and security, lowest Total Cost of Ownership (TCO) and greenest platform credentials. Many enterprise IT users today now reject the sky-high costs of too-complex, distributed IT estates, and are mass-consolidating many distributed server workloads onto efficient, more manageable, and lower TCO, System z mainframes. IBM

Tivoli SMCz is thus well timed to help users further improve their business service delivery, and reduce their IT management costs sharply, both on their mainframes and end-to-end across their enterprise.

Co-launch with System z10 Signifies SMCz Importance

IBM co-launched the SMCz strategy/portfolio alongside the eagerly-anticipated, stunningly-powerful, next-generation System z10 EC mainframes (*its highest-profile mainframe event for almost three years*), clearly signifying the high importance that it places on SMCz. It was the main IBM software showcased with this latest IBM flagship platform. IBM holds high expectations for widespread SMCz customer adoption over the next several years!

Figure 3 shows our one-chart, new System z10 EC highlights summary. We highlight extreme scalability, stunning quad-core MPU power, world-class leadership, IBM middleware software (*notably SMCz*), "Industry Gold-Standard" virtualization, and the 35% price/performance advances, as five top System z10 strengths. We found the System z10 EC to be a real IBM innovation, technology, and MPU, tour de force. It delivered more dramatic advances, in

hardware and especially in new software, than prior mainframe generation upgrades. This impressive new enterprise platform is thus a perfect hardware complement to the new IBM Tivoli SMCz service management software.

New Enterprise Data Center, IBM Tivoli SMCz, & the System z10

IBM also launched the New Enterprise Data Center, its new data center model/roadmap to provide customers with more sustainable, efficient, and dynamic business computing, with the System z10 as its cornerstone. This new model starts with infrastructure simplification, but then deploys virtualization, management, and automation end-to-end across server, storage, and networking infrastructure. System z10 provides up to 70% more capacity, up to 100% more performance, has 35% better price/performance, runs at up to 100% utilization, and uses up to 20% less energy than competing platforms. The z10 thus lets enterprises sharply reduce cost, energy use, and complexity, in their data centers, exploiting the mainframe's "Gold-Standard" virtualization, dynamic policy-based management, and new "Just-in-Time" Capacity On Demand (COD). IBM Tivoli SMCz is thus a lynchpin of the New Enterprise Data Center, in automating management of complex IT disciplines on and from the platform across the enterprise.

New System z10 Mainframe & New Software - Huge IBM Investments

We note the huge investments IBM made here, with the new System z10 needing IBM hardware investment of \$1.5B using 5,000 IBM staff (*50% more than for the z9*), plus a software investment of \$2B using 7,000 IBM staff. Combined, these total \$3.5B and used 12,000 staff for up to five years. Such huge investments amply show IBM's unwavering commitment to its again-leadership mainframe, and to expanded software roles like SMCz, our focus here. IBM Tivoli has also completed a substantial number of ISV acquisitions that greatly extended its System z portfolio in recent years, and these included: Candle Corporation; CIMS Labs, Inc.; Micromuse, Inc.; Consul Risk Management, Inc.; Isogon Corporation; MRO Corporation; and now Cognos.

SOA Adoption Soars, System z Central, SMCz Adds Vital Management

SOA is the most profound application software architecture advance in IT to date, and enjoyed soaring adoption to top 10,000 enterprises worldwide by end-Q1 2008. With 6,500 IBM SOA customer engagements by then (*65% of all customer SOA projects*) and a 64% 2007 SOA software market share, IBM now dominates the SOA market, holding clear thought-leadership. Over 1,500, mostly larger enterprises already use System z mainframes to host SOA developments. IBM's leadership System z WebSphere Smart SOA and Rational AD tools portfolio, with the new z10

platform's impressive advances and unequalled QoS, perfectly equip the mainframe to serve as enterprise "SOA central". As this already-widespread, mainframe-based SOA adoption, and new SOA application rollouts, accelerate, managing more composite SOA applications, and the business processes and services that they support, end-to-end, has become a major user priority. SMCz delivers that vital business service management capability.

Credit Crunch, Business Downturn Ups 2008 Pressures on IT Groups

2008's global financial markets were roiled by the severe credit crunch, triggered by unraveling USA sub-prime mortgage-backed investments, widely (*if unwisely*) bought by many banks and financial institutions around the world. The lending drought that followed affected many business sectors and economies. This created a tougher business climate, and has raised recession fears in many sectors and geographies. This sharply increased pressure on most businesses to maintain, or better to improve, their performance and governance even in these tougher times. IT-enabled business transformation, with core business process improvement, remains the main way that firms can win such gains. Five-plus good years of regular IT budget increases are now behind many CIOs. IT often now faces loud business demands to deliver more business-transforming solutions, but without corresponding increases in IT budgets, and so must now "do more with less".

ITSM - Vital Escape From High "Status Quo" IT Running Costs

Numerous studies showed most enterprise IT groups consume 75%+ (*on average, in a range from about 50% best to 90%+ worst*) of their IT \$ budget, and similar percentages of their IT staff capacity, in just maintaining, supporting, and operating, existing applications, systems, storage and networks. This leaves, on average, under 25% of budget/resources for new, business-supportive IT developments, improvements, and system replacements, or often even less. In today's tougher times, it is only by sharply cutting burdensomely high, semi-fixed costs of operating, managing, and supporting existing system estates, that most IT organizations can free up \$ and staff resources for these vital, new, business-enhancing IT initiatives. ITSM and system automation, as provided to System z users by SMCz, now offer one of the few ways IT organizations can break free of current system support burdens, and use freed resource on vitally-needed, new, business-driven IT initiatives.

Excessive Distributed Computing Costs - System z with SMCz Can Slash

Those "status quo" IT operating costs climbed steeply as most enterprise IT infrastructures became sprawling, fragmented, complex, multi-platform, distributed

environments in the last decade. An IDC study found that global IT systems management, administration, support and power/cooling costs had increased by a near-incredible 5-fold, from \$34B to \$165B per annum, from 1996 to 2007. The latter was three times higher than worldwide spending on new servers (\$54.4B) that year. About 48M scale-out distributed servers were sold in those years, causing such a big IT operating cost explosion. Appealing (*at first sight*) for low hardware price, legacy distributed scale-out servers proved vastly costly to run, because of sky-high “outside-the box” costs at first ignored. These costs included high support staffing and software license costs, large and climbing electrical power/cooling demands, high networking equipment and connection costs, as well as incredibly wasteful software, and server asset utilization (*HW and SW often just 5-10% utilized*). Many enterprise users are now eliminating these wasteful legacy distributed servers fast, by infrastructure consolidation, optimization, and virtualization initiatives. Many found that 35-50% of distributed server workloads could best be consolidated onto System z mainframes, using Linux under z/VM. SMCz enables further sharp improvements in service quality, and higher operations automation, on System z itself, but also over the remaining distributed estate. This makes SMCz a strategic complement to the ongoing infrastructure optimization and improvement wave.

Our Analysis

For these reasons, enterprises in mid-2008 now face fierce shareholder and market demands to find business performance improvements in this far more difficult, post-credit-crunch, economic climate. Business transformations, business model innovations, and radically improving business processes are now still more imperative, in these ultra-competitive, faster-changing, and harsher current markets. Innovative new IT applications solutions, built on SOA and often reusing established assets on the IBM mainframe, are central enablers for enterprises to deliver these needed business transformations.

Recent years’ market resurgence of System z is now boosted by the new System z10. IBM clearly brought the SMCz strategy to the forefront of its mid-2008-on marketing with excellent timing. The huge investments it made to deliver new generation mainframes and advanced new software like SMCz are to be warmly welcomed. SMCz now offers enterprise users major help to better manage business services, often built on SOA composite applications. SMCz’s advanced process automation offers major relief to the excessively high share of IT budgets locked up with operating existing systems. It also multiplies these gains as wise users consolidate wasteful distributed server workloads and overly complex IT infrastructures, onto centralized, highly-virtualized, more manageable System z10 (*and other*) advanced server platforms.

In today’s global markets, the costs and business risks of poor business service performance, and/or downtime, can be prohibitive, and may cause serious damage to reputations. Managing all business and IT services across the enterprise more effectively, more visibly, and with higher automation-delivered productivity, has thus become crucial.

3. IBM Tivoli Service Management Center for System z Explored

IBM Tivoli SMCz Architecture Introduced

The architecture, scope, and broad service management functional coverage, of the IBM Tivoli SMCz are shown in the iconic IBM graphic chart now associated with the offering - Figure 4. This is the standard visualization/graphic depiction of this IBM Tivoli SMCz offering, so meriting careful review here. The chart’s upper caption summarizes SMCz as enabling customers to strategically harness their System z mainframe as an integrated, enterprise-wide hub for more efficient management of their business and IT services. The chart text also clarifies that SMCz enables adopters to optimize service management throughout their data center(s), across all platforms enterprise-wide, from their System z mainframe hub.

The left-hand-side central chart area shows the three layers of the ISM architecture which underpin SMCz. These sit between the “**optimized IT infrastructure**” below, and the enterprise’s “**business services and best operational practices**” above. The former is illustrated by the “working mechanism” drawing (*below left*), with a System z mainframe pictured as its cornerstone (*bottom left*). The three ISM architectural layers (*shown in Figure 4*) are:

- **Process Management:** Software products on the System z mainframe hub that integrate and automate major IT operational management processes across organizational silos, bringing increased IT responsiveness to the business, and improving IT flexibility.
- **A Service Management Platform:** Software that discovers, standardizes, and then shares, crucial IT operations information. This allows close integration of service management people, processes, information, and technology over the enterprise, for improved service delivery, on and from the System z mainframe hub. It includes a new federated change and configuration management database, and a process engine to execute functional process workflows.
- **Operational Management:** System management software that helps to automate diverse areas of application or business service operational management, including System z-specific IBM Tivoli management software.

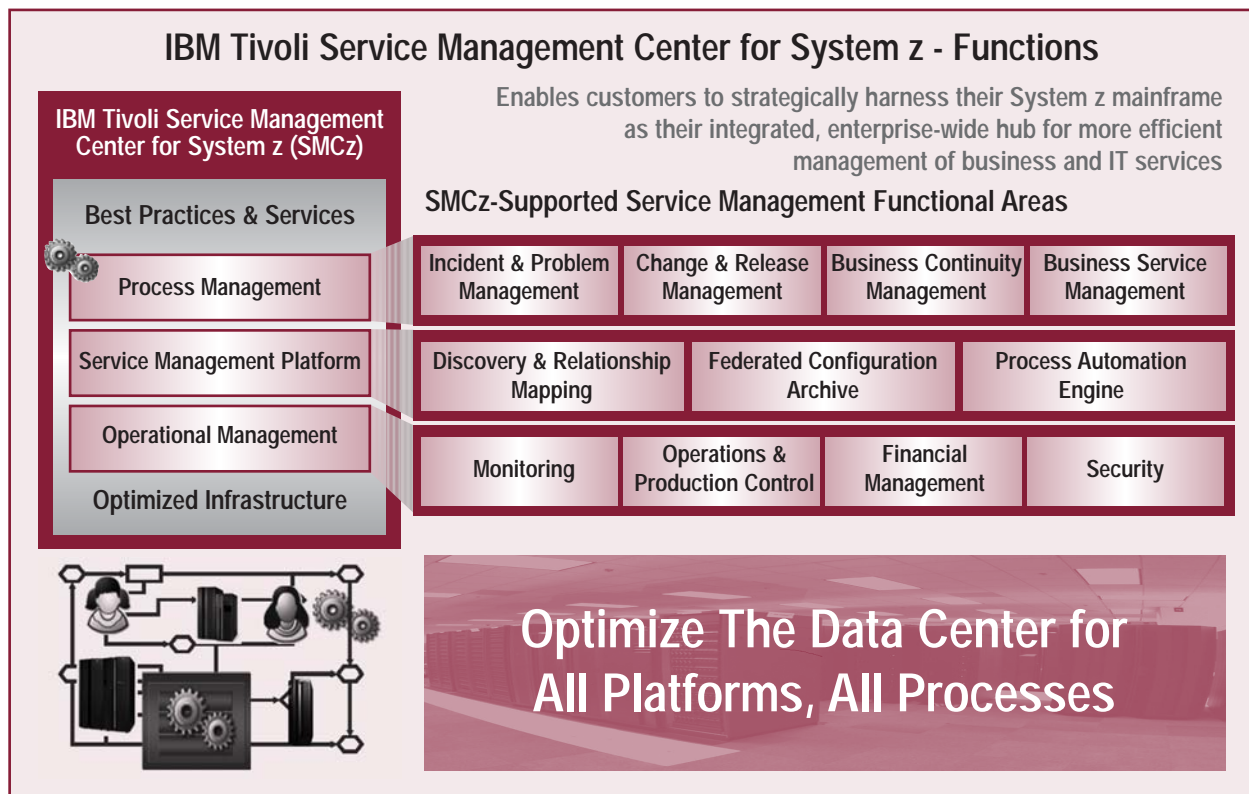


Figure 4: IBM Tivoli Service Management Center for System z - Managing Enterprise IT Infrastructure

These three architectural layers are carried over to the right-hand center of the chart, where the service management functional areas supported by SMCz, within the IBM Process Management, IBM Service Management Platform, and IBM Operational Management Domain layers, are each named. We briefly explain each of these in the subsection below:

SMCz Service Management Functional Capability Areas

The functional capability areas of SMCz, in the three architectural layers introduced above, are each briefly reviewed and described below.

IBM Process Management Solutions

- **Incident and Problem Management:** This process establishes visibility, for the IT operations and production teams, into incidents and process-related events, before they can affect service delivery or business user satisfaction. This process also initiates recovery steps to speed mean times to resolution, and to minimize problem impact on the business.
- **Change and Release/Configuration Management:** This process establishes control over requested changes to business service plans, schedules, and IT assets. The process also provides visibility into the impact of requested changes on the business, and automatically resolves cross-enterprise conflicts.

- **Business Continuity Management:** This process establishes control of, and manages the risks to, the smooth running of the enterprise, and/or to the delivery of a business service, ensuring the continuity of critical business functions should a disruption occur, and ensuring effective and timely service recovery afterwards.
- **Business Service Management:** Establishes full, real-time visibility into actual business service delivery performance, and provides business impact analysis of incidents and process-related events. It also establishes a focal point for end-user contact, incident, availability, and service management, to better control end-user satisfaction and self-service capabilities.

IBM Service Management Platform

- **Discovery and Relationship Mapping:** Automated application mapping and discovery across the entire mainframe and enterprise networked environments, to discover, map and visualize the interdependencies and relationships between actual deployed applications, middleware, databases, computer systems, and network devices, using agent-less, credential-free discovery capabilities. A crucial enabler for business service management and the main feeder for the federated configuration archive below.
- **Federated Configuration Archive:** An enterprise-wide database platform for storing deep, standardized, configuration, and configuration change, data. Provides

the underpinnings for successful ITSM implementation, reduces architectural complexity, and cuts effort, time, and cost, of operations incident and problem management. Fed and updated by the discovery and relationship mapping capabilities above.

- **Process Automation Engine:** Process execution engine and common facilities that support and enable the automation of all types of IT operational processes to support the business services the enterprise is running. Executes predefined workflows for IT operational processes, which incorporate best practices, notably from ITIL.

These three ISM elements help users integrate, automate and optimize data, workflows and policies, and allow them to better align the management of their entire IT infrastructure with real business priorities. These elements can also integrate and combine data from the products in the operational management domains, especially in the System z mainframe environment.

IBM Operational Management Domains

- **IT Performance Monitoring and Management:** Provide visibility into IT service/resource/asset performance, and helps to establish control over incident and availability management. It also provides proactive automation - initiating incident resolution, recovery processes and alerts with contextual information, to reduce mean time to resolution while ensuring service delivery continues to meet objectives under any circumstance. Management and Operations dashboards can be customized to provide personal views for subject matter experts to quickly source and resolve problems, all using a common User Interface (UI), the **IBM Tivoli Enterprise Portal (ITEP)**.
- **Operations and Production Control:** Provide visibility and control over the delivery of business and IT services and workloads across the IT infrastructure, plus operational control over the actual IT infrastructure itself. Great business agility is provided via advanced automation which enables integrated plans and schedules for business and IT processes, as well as IT resources, to be created and run. Complex production scenarios can easily be implemented, such as starting up, shutting down, or moving applications and subsystems, based on business process schedules and plans. Consolidated events, as well as system and workload automation solutions, also use the ITEP as their common, customizable UI.
- **IT Financial Management:** These extensive SMCz capabilities now provide a sound, measured basis for bringing fuller visibility and control over unit costs of business and IT service delivery. They also provide the basis for visibility into understanding the financial impact of incidents and events on the business. Unique IBM

leadership strengths are in software license cost, usage and compliance management, in enterprise systems resource usage and accounting solutions, plus also in supplier contract, and in IT asset, management. System resource usage and accounting for complex, modern, virtualized systems demanded new solutions that can now accurately collect, analyze and bill business units or users, based on real usage and costs of shared systems and computing resources, both mainframe and distributed.

- **IT Security:** This SMCz portfolio increases visibility to, and gives greater control over, audit and compliance enforcement, as well as automating security-related incident and event mitigation, and security/user administration, for improved business integrity. Comprehensive audit and compliance management and enforcement automation for System z services, users and resources are offered. These can automatically detect, collect, analyze and send alerts for security-related incidents and events, including from RACF, business applications, middleware, data, network and systems. For end-to-end environments, the security offerings provide mainframe-level audit and compliance management across enterprise-wide services, users, processes and the IT infrastructure.

SMCz - Enterprise-wide Service Management Hub for Business

SMCz provides System z customers with a cohesive, single, integrated view of all the critical applications hosted on their mainframe(s) *(and across other platforms)*. It can discover, control, and visually display the linkages between, the physical IT assets and these business applications services. It also enables IT to monitor the quality of overall service delivery provided, relating this directly to the real business objectives supported. This establishes centralized **enterprise-wide visibility, greater control, and increased automation** across the whole IT organization, enabling enterprise adopters to standardize and upgrade their main IT processes, and to align IT more closely with their business.

Many important IT operational functions, outlined above, are supported by IBM Tivoli SMCz components, including enterprise application mapping, the discovery of relationships between software and systems elements, business services, service /change requests, IT financial management, and IT security management, all exploiting this single, common, integrated Change and Configuration Management Database (CCMDB) of operational systems information. Different, tailored, role-based processes and views, appropriate for the proactive management of technology and business services, by each of these functions, are integrated and supported atop IBM Tivoli's common, System z mainframe-hosted, service management platform.

SMCz fully exploits the mainframe's unique operational QoS advantages of highest scalability, highest availability, tightest security, most advanced virtualization, and leanest and greenest footprint, etc. It delivers a centralized business service management and process automation hub on the mainframe, making the IT organization more service-oriented, more efficient, and more responsive to business needs.

Many enterprise IT infrastructures still require extensive consolidation, virtualization, and rationalization before they can be reasonably deemed "optimized IT infrastructures", and the journey needed is well-charted by IBM's **New Enterprise Data Center** vision. ITSM, and its associated automation, can beneficially be implemented using SMCz in incremental steps, by platform and/or by function, compounding extra value as the infrastructure is further optimized.

Our Analysis

The architecture of, and functionality provided by, IBM Tivoli SMCz was carefully designed/built, by major IBM investments over several years, to provide new levels of visibility, control and automation from the mainframe used as the new enterprise service management hub. This enterprise-wide role manages not only all business services running on the System z mainframe(s), but also those running end-to-end, cross-platform over the enterprise; hitherto the hardest to optimize. These crucial IBM Tivoli SMCz advances therefore now extend:

- **Visibility:** By now providing a single, integrated view of critical applications on the mainframe, showing the linkages between IT assets and business applications, as well as end-to-end, cross-platform and enterprise-wide.

No other management vendor approaches the business services management strength IBM Tivoli SMCz offers.

- **Control:** By providing new customized business service views that support such functions as business services, services requests, IT finance, security, IT production, technical support, and operational control on the mainframe and cross-platform.
- **Automation:** By combining and delivering the advanced IBM Tivoli SMCz service management and process automation platform, the products for which are discussed individually in Section 4.

Combining the "tour de force" new System z10 EC mainframe with IBM's compelling New Enterprise Data Center vision/roadmap that melds the System z10 closely

together with SMCz, we found that the latter represents a huge advance in service management for enterprise mainframe users. No other management vendor approaches the business services management strength IBM Tivoli SMCz offers, nor the depth and breadth of IBM Tivoli's System z operational system management portfolio that has just reached its highest-ever strength through major developments.

We assess these enterprise-wide service management advances by IBM Tivoli SMCz as of great importance. They now offer substantially reduced operating costs, and can free up staff from routine systems management, for use on new business initiatives. Far too many precious IT resources are currently tied down on basic operations. We found that IBM Tivoli SMCz directly addresses these deep, strategic challenges (*reviewed in Section 2*); the importance of which cannot be overstated. This business services management center not only optimizes and automates business service delivery on the efficient System z, but also centrally manages them enterprise-wide, for the first time. Viewed from another perspective, IBM Tivoli SMCz applications are also an enterprise-critical, new workload themselves that are ideally suited to run on a centralized, "lean-and-green" System z10. These loads will benefit from rock-solid security, affordable DR/BC protection, low-cost Linux software environment, and the other System z strengths highlighted in Figure 1 on page 2.

4. Select Enabling Products Powering IBM Tivoli SMCz

Setting the Scene, Challenges

In this Section we assess the main new IBM Tivoli software products behind SMCz. We make this proviso because this analyst faced three challenges in assessing IBM's emerging SMCz product portfolio in writing this Paper.

The long-established, IBM Tivoli operational system management portfolio is a major underpinning of SMCz, both on System z itself, and for enterprise-wide, distributed platform management. Challenge 1 was that this IBM Tivoli portfolio was too wide to assess in this high-level Paper.

Challenge 2 was that this IBM Tivoli System z portfolio underwent unprecedented, heavy enhancement and development. IBM invested over \$1B+ p.a. recently in advancing System z management software. For example, we counted 32 substantially enhanced and/or new IBM Tivoli System z operational systems management products made available in Q4 2007 alone, a phenomenal products advance of great value to System z SMCz adopters. To review these advances is far outside our scope.

Challenge 3 was timing/availability. IBM is rolling out SMCz in several "product waves". The first went public with SMCz's co-launch with the new z10 mainframe on February 26th 2008. The second wave of SMCz products were just announced at IBM Tivoli's PULSE 2008 conference (see below), completing the main SMCz product suite with GA within Q2 2008. We also expect a third wave of advances/refinements between Q4 2008 and Q1 2009, rounding out the complete portfolio.

32 substantially enhanced and/or new IBM Tivoli System z operational systems management products made available in Q4 2007 alone

PULSE 2008 - IBM's Service Management Focal Point Event

As a focal point and rallying-ground for its service management customers and market thrust, IBM held its PULSE 2008 global service management conference in Orlando, Florida, from May 18th to 22nd 2008, under the tagline "In Touch. In Tune. In Synch". Around 4,000 attendees, system and service management professionals and managers from customers, but also from IBM business partners, IT industry analysts, IBM experts, and academic/universities, made PULSE 2008 a premier service

management event. This first unified IBM service management conference brought together the IBM Tivoli, Maximo and Netcool customer user group into this combined showcase, the latter two major IBM Tivoli acquisitions. This spectacular event was thus an ideal forum for IBM's second-wave SMCz announcements.

IBM Tivoli Service Management Center for System z - Products Emerge

With the provisos above, our Figure 5 shows the same SMCz architecture graphic chart used previously, but here with the main SMCz-enabling IBM Tivoli products shown in the right-hand side boxes, in place of the functional categories previously shown in the similar Figure 4 (on page 9).

Many operational systems management products for System z named here are familiar, with some important new z ISM offerings. Many existing operational management products already benefited from substantial upgrades during Q4 2007 or since.

Appendix A and Figure A1 (on page 17) provide our list of IBM Tivoli SMCz-supporting core products, ISM process managers, and IBM Tivoli System z IT financial management, security management, mainframe operational management and production control, and mainframe performance monitoring and management tools. Latest

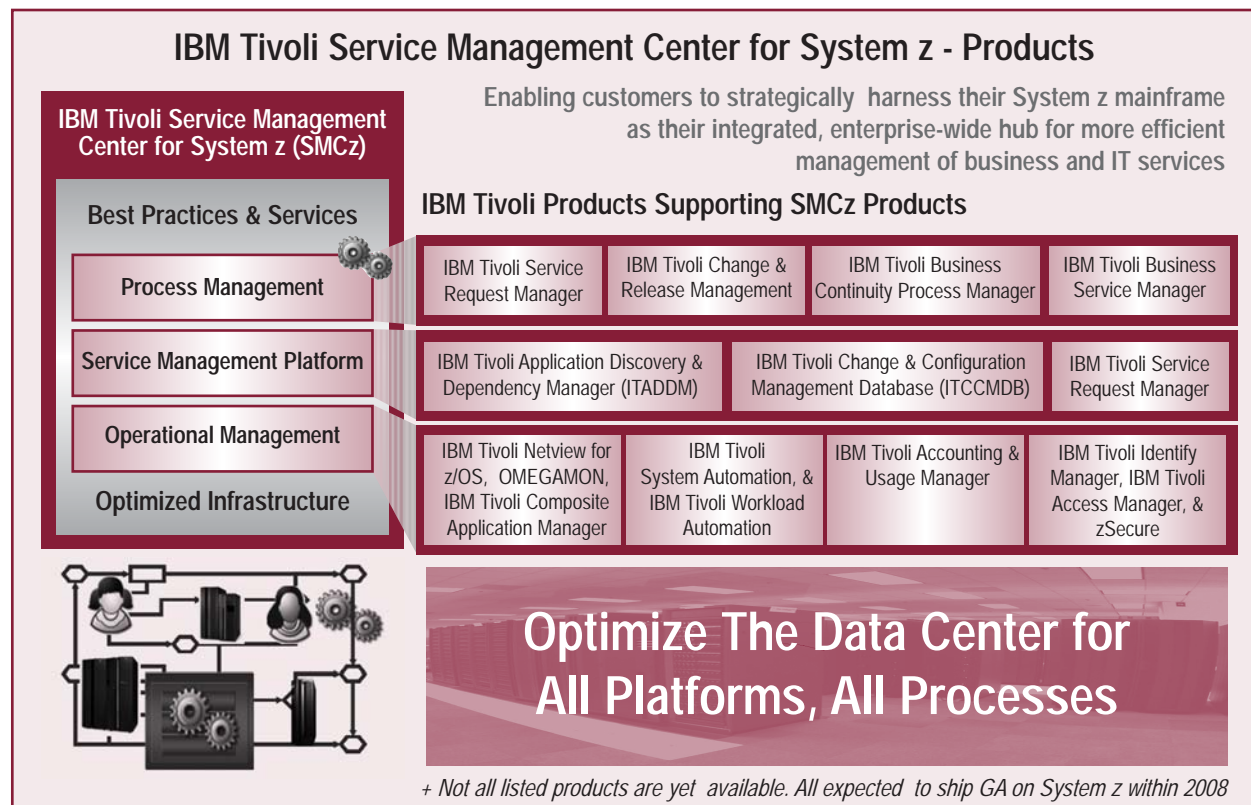


Figure 5: IBM Tivoli Service Management Center for System z - Products

versions, System z environment support, and short product name abbreviations are shown, with new products noted. The list includes almost 40 IBM Tivoli products. In this Executive Paper, we provide overview assessments of the four, new, core SMCz service management/process automation products at the heart of this offering, which are not yet widely known. These follow below. Our new in-depth and full-length SMCz White Paper (see "Read Our New, In-depth SMCz White Paper Too" on page 16) will review/assess a much wider product set, and will review the main scenarios under which they are best used.

IBM Tivoli New Core SMCz Products Assessed

At the heart of the new IBM Tivoli Service Management Center for System z portfolio are four major products now on System z (*under z Linux*) that provide the core service management platform, and IT process automation engine capabilities, for the offering. These merit brief overview assessments here:

- **IBM Tivoli Business Service Manager (ITBSM):** This new core ISM/SMCz product, for System z (*Linux*), improves the alignment and integration of IT objectives with business objectives. It allows executives, managers and operators to view System z business service delivery performance against revenue, growth and operational objectives, in real-time, via business dashboards. Such a business service dashboard was shown in Figure 2 on page 4. The tool also provides real-time views and impact analyses, showing the effects of incidents on all related business services, and automatically initiates prioritized recovery responses. For end-to-end environments, ITBSM greatly simplifies these complex environments, aligns cross-enterprise business and IT objectives, and allows adopters to see the impact of incidents on cross-enterprise business services while initiating prioritized, coordinated responses.
- **IBM Tivoli Application Dependency Discovery Manager (ITADDM):** This impressive, interesting, new, core SMCz product, now also on System z (*Linux*), improves operational visibility into complex business applications and IT infrastructures. It allows operations teams to discover, map and visualize complex System z business service, business application, subsystem and resource topologies, run-time dependencies, and their change histories. It automatically discovers system resource topologies and relationships, and maps them against supported business services. It also makes System z topologies and relationships available for service views - including for the **ITBSM** above. For end-to-end environments, the tool can discover and view cross-enterprise business service and IT asset topologies and change histories. It makes these end-to-end topologies and dependencies available for service views as well.
- **IBM Tivoli Service Request Manager (ITSRM):** This is now IBM's flagship service desk solution for enterprise service management. This comprehensive product improves control over end-user satisfaction and unplanned incidents that affect business service delivery. It improves System z end-user experiences through automated self-service - it consolidates and prioritizes user requests, and initiates change or incident management processes. For unplanned incidents, it proactively consolidates/prioritizes incidents before end users feel the impact, and initiates recovery processes to cut mean times to resolutions. If an incident cannot be automatically resolved, it provides the right context and event correlation information to the correct experts. In end-to-end environments, ITSRM improves business agility by automating end-to-end service requests, and by prioritizing/coordinating incident responses. It also aggregates and consolidates enterprise-wide operational/domain knowledge, and disseminates that to standardize incident and problem management throughout the enterprise. ITSRM also offers extensive **service catalog functionality** to automate provisioning of IT service requests such as adding new people to the IT department and provisioning new software, etc.
- **IBM Tivoli Change and Configuration Management Database (ICCMDB):** This powerful tool helps enterprises improve control and optimization of business services, applications and the IT infrastructure over their lifecycles. It helps control System z business service schedules, applications and resources across their complete lifecycles, using an ITIL-based change and configuration management process. It provides a business and technical impact analysis for planned changes, and resolves potential conflicts between multiple requests for changes, in order to minimize potential disruption of business services and degrading the end-user quality of experience. It automates workflow steps, notifications and approvals. For end-to-end environments, it aggregates and consolidates enterprise-wide change requests, and automates the resolution of potential conflicts across the enterprise. It schedules and co-ordinates changes to minimize potential disruption on the delivery of enterprise-wide business services.

ITBSM, ICCMDB, ITADDM, and ITSRM above, plus the just-announced new IBM Tivoli Business Continuity Process Manager (*ITBCPM*) are thus now all on System z under zLinux. They are fully integrated with each other, and with the appropriate IBM Tivoli System z IT financial management, security management, mainframe operational management, and mainframe performance management, tools shown in Appendix A, Figure A1 (*on page 17*). The extensive integration between these products helps to eliminate the "silos" of resource management discussed in Section 2, and now delivers a combined view into business applications across the whole data center, on/from System z

Our SMCz function coverage in Section 3 should be read in conjunction with our functionally-sectioned SMCz product list in Figure A1 on page 17. The former shows what each functional area provides, and the latter which IBM Tivoli products support each of SMCz functional areas.

Enterprise Asset Management (EAM), ISM and SMCz

In parallel, IBM also took big strides to global leadership in the large, high-growth enterprise asset management software segment, mainly via acquisition and integration of MRO Software, and that firm's extensive Maximo-branded leadership EAM suite of products, now within the IBM Tivoli software brand organization. EAM is closely and logically linked to ISM, and shares the process automation technologies now deployed under SMCz. We strictly bounded this short Executive Paper to focus solely on the latter, but fully acknowledge the high business importance of EAM, the strengths of the IBM Maximo EAM portfolio, and the underlying common process automation technology both share.

Our Analysis - Example IBM Tivoli SMCz Scenarios

The best way to easily understand the real-world importance of IBM Tivoli SMCz, and the significant business and IT benefits it delivers, is by briefly reviewing practical scenarios where the solution can be used to great effect. We therefore briefly analyze three, common, real-life situations where IBM Tivoli SMCz adds substantial value and measurable benefits:

1. Business Service Delivery Performance with Impact

Analysis: Business line and IT managers are accountable for business service quality, but often lack the tools required to track and understand actual business service delivery performance measured against their real business objectives. They also often lack full understanding of how business process-related events affect their business service delivery. With IBM Tivoli SMCz these challenges are overcome. Full visibility into the actual historical, real-time, and predicted business service performance against service levels and KPIs, can be provided. The impact of process-related events on service delivery can also be monitored, tracked and measured. The software can also prioritize events whilst also initiating automated incident management and resolution processes. Both types of managers gain extensive visibility into their service delivery performance versus business objectives, can fully understand how process events impact upon the service delivery, and both sides benefit from a much more direct linkage/alignment between business and IT objectives.

2. Change and Configuration Management:

Operations/production teams often lack a standardized change management process for IT assets, service schedules, and plans. They are also often unable to schedule planned changes that minimize the potential service delivery impact of these changes. IBM Tivoli SMCz provides an ITIL-based, standardized change management process. This becomes the focal point around which these teams can consolidate and coordinate planned changes throughout their enterprise, allowing them to control and optimize the modeling and scheduling of changes over the whole infrastructure so as to resolve conflicting requests. The solution can also automatically discover and map services schedules, and application resource topologies and relationships, to simplify and improve these teams' visibility into their complex IT configurations. It can also automate the whole change workflow, including all notifications and approvals. This increases enterprise-wide efficiency and control over IT asset lifecycles via this standardized change management process, resolves potentially conflicting requests for changes, and brings automated scheduling and workflow management; reducing manual errors by 15%, or often more.

3. Incident and Availability Management:

Most operations and production teams are flooded with a daily deluge of event warnings and notifications, and user-generated trouble tickets. These groups often find it difficult filtering out and prioritizing the most critical events, identifying the true root causes behind the event, resulting in too slow mean times to resolve. IBM Tivoli SMCz overcomes these issues with a consolidated view of filtered critical events. Performance plus health-based monitoring provides advanced detection, alerting these teams to impending problems before they hit end users as actual problems. Service tickets are automatically generated that include useful information such as event correlation and contextual information, and are put before the right experts. Automated recovery processes are also initiated to keep critical business and IT processes running while the event is investigated, analyzed and resolved. Critical paths of milestone services are also updated to reflect the event's impact on service delivery. If services may complete late, they are promoted to higher priority to speed completion. Services can also be dynamically distributed to best available resources. Benefits seen here include reduced trouble ticket generation by up to 22%, reduced mean time to resolution by 10% or more, and improved overall end-user satisfaction.

IBM's Tivoli Service Management Center for System z integrated solutions thus now helps mainframe users automate **services, process and operations**. In our assessment, SMCz now delivers advanced service automation within the System z environment, extending operations automation with its new, advanced process automation and service management. It also equips the

mainframe to provide a centralized service automation solution across all systems and platforms, exploiting System z advantages in driving business service and ITIL process management across the whole enterprise. System z strengths in this role include its reliability, availability, best virtualization, highest security, costs savings associated with system consolidation, the few people required to manage a System z, plus its low floor space and power consumption needs, making it a highly-scalable, fault-tolerant, and secure hub.

Using this automated technology also now enables SMCz adopters to link together their "silos", gaining higher visibility over their IT environment, reducing system management burdens via automation, and improving business IT-alignment.

5. Analyst Conclusions, Recommendations

SMCz Commendation to Mainframe C-Level Executives

IBM's SMCz now combines major advances in ITSM and process automation, best practices from ITIL, and the magnified new System z10 EC mainframe's strengths. To this, SMCz adds enhanced IBM Tivoli System z operational management tools. Together, these now offer enterprises much-improved visibility, control and automation over the business services their IT groups' support. Impressive, comprehensive, leadership in its service management technology, and taking excellent advantage of System z10 strengths, we found SMCz to be a powerful ITSM offering we commend to mainframe CIOs and IT operations executives, for the substantial business/IT benefits it offers.

We found SMCz to be a powerful ITSM offering we commend to mainframe CIOs and IT operations executives, for the substantial business/IT benefits it offers.

View SMCz Demonstrations, Attend Briefings Soon

Enterprise-wide service management with SMCz delivers radical advances in business and IT service quality and business-IT alignment, but introduces many new concepts, technologies and processes, etc. These, we found, are best understood more easily and quickly when practical service management and process automation scenarios are explained, and SMCz tools/technologies are demonstrated. It also helps to hear the full SMCz architecture discussed

and explained step-by-step by an expert. We therefore strongly recommend all IT executives concerned with System z-based operations management, and not yet familiar with SMCz (*and/or ISM*), should attend an IBM SMCz executive briefing-workshop-demonstration. Many of the SMCz capabilities are striking in their power and capabilities, but really must be seen live to be fully appreciated.

Take Service Management Adoption Self-assessment

Enterprises differ widely in sophistication of current systems management, and on where they currently stand on the ITSM capability-maturity spectrum (*several capability-maturity models for ITSM are available*). A good starting point is for mainframe operations executives to carry out a service management self-assessment for their organization (*IBM Tivoli offer one free*). The results provide excellent, level-setting views of where and how the enterprise should advance its service management plans, and offers a sound basis for internal team discussion and action-plan formulation.

Start SMCz Adoption Now Products Out, Use Entry Points for Best ROI

Most System z customers already use IBM Tivoli mainframe operational management products: these now also underpin SMCz. With IBM's latest PULSE conference-announced, Q2 2008 SMCz product roll-outs, the central new service management and process automation foundation parts of SMCz (*see Section 4*) became available on System z Linux. These complemented the wider range of enhanced and integrated IBM Tivoli operational systems management, and IT financial management, products already available. Further SMCz portfolio additions can be expected late in 2008. We recommend mainframe customers should upgrade existing Tivoli System z tools to their latest versions (*that support SMCz*), and begin deploying the new, high-level SMCz service management additions (*see also "Entry Points" below for where to begin*) now.

Linux on System z; an excellent host environment

z Linux Best Service Management Host on System z

IBM's core, new, SMCz service management products run under Linux on System z; an excellent host environment for them in our assessment. zLinux, we found, is the ideal host OS on System z for these new service management process workloads. With its close similarity to other Linux platforms, and to UNIX, it is faster/easier/cheaper for IBM (*and ISVs*) to

port new software technology products to zLinux to get them up on the mainframe. The open source OS, using IFL Linux specialty processor engines, also provides much the lowest cost mainframe processing; an important advantage. Porting to, and testing new software tools for, z/OS takes considerably more time/cost, incurred to adapt the software to rigorous production z/OS standards. Mainframe customers are also rightly cautious about adding unfamiliar new workloads into their carefully managed, highly-optimized, z/OS production environments. Close co-resident proximity, and excellent, low-latency z cross-subsystem communications "inside the box" enable easy, fast integration links between the two environments.

SMCz Frees up IT Operational Resources for Business Innovations

Many IT operations consume 75% plus of enterprise IT staff resources/budget costs just to run/support/manage the status quo in their complex, existing, heterogeneous environments. SMCz's advanced, efficient service management, and extensive IT process automation options, can sharply reduce these heavy existing operating burdens, freeing up IT staff/resources/funds for new, top-line business innovation projects like SOA, IOD, etc., in a self-funding, virtuous circle.

Where to Start? Five Service Management Entry Points

Wide IBM practical experiences at hundreds of customers, plus ITSM experts and analysts inputs, defined five service management entry points. Starter projects were also defined for each: these allow rapid implementation, bringing fast ROI payback for often modest investments. These therefore offer incremental, low-risk deployment of SMCz/ISM. Entry points and starter projects are modular. The former may be "mixed-and-matched" to fit specific enterprise ITSM roadmap plans. These five entry points are:

1. **Discover:** Discovery/mapping that uncovers in-place applications, IT infrastructures, their dependencies, and how their resources are currently used. This provides a vital foundation for problem, configuration, change, asset, and performance management, projects.
2. **Monitor:** Monitoring resources, events, performance levels, and users, to achieve visibility into business service performance and availability, is the basis for event and performance management solution projects.
3. **Protect:** Ensuring service availability, including securing applications, data, and services, against fraudulent/malicious use, and improving resilience via backup/storage. Improving data backup, restore, and/or retention, are typical projects.
4. **Industrialize:** Using automation to cut costs and errors, improve response and raise accuracy, to run more tasks

without human oversight. Automation can be implemented in many infrastructure areas. User Single Sign-On (SSO) is a popular starter example.

5. **Integrate:** Improve business agility and process flexibility by managing/reporting on IT services from a business perspective, aiding IT planning/execution. Business service management is a high-return project here.

We warmly support this well-defined service management entry points approach

We warmly support this well-defined service management entry points approach (*with associated starter projects*) for the System z SMCz adopting customer. We have observed that the similar approach, used at the heart of IBM's massive SOA initiative over the last three years, was hugely successful for SOA users, and for IBM, and expect the same to apply here.

SMCz Adopters - Aim for Closed-loop Service Management

As a process improvement-based discipline, ISM seeks to successively/continuously improve all ITSM processes. From its extensive customer experience, IBM developed/refined (*for its ISM and SMCz adopter customers*) a six-step approach. It now proposes adopters should apply these in a closed-loop cycle of improvement, as their implementation progresses. The six steps, in their most simplified terms, are shown below.

1. **Monitoring** the service infrastructure.
2. **Measuring** the customer experience.
3. **Identifying** the service dependencies.
4. **Tracking** KPIs
5. **Connecting** business and operational service views.
6. **Supporting automated action** in real time.

We consider this to be the most helpful, practical improvement model that will usefully guide SMCz adopters to longer-term service management excellence.

Read Our New, In-depth SMCz White Paper Too

This Executive Paper presents our high-level, IT executive-orientated overview of the IBM SMCz portfolio. For readers requiring a more detailed and technical, independent analyst assessment, Software Strategies are currently also researching and writing a new, full-scale research White Paper that evaluates and assesses SMCz and its component products in greater depth than here. We expect this to be published by end Q2 2008, and to run to around 48 pages with some 16 charts, and it is to be made available free-of-charge via IBM.

Appendix A: IBM Tivoli Service Management Center for System zSMCz Products

Figure A1 shows the current software products offered under the IBM Tivoli SMCz portfolio banner. Figure A1 includes the

new specific IBM Tivoli SMCz products (*reviewed in Section 4*), ISM process products, and also the now-extensive IBM Tivoli IT financial management, security management, as well as the longer-established operations and production control, and performance management portfolios, all for/on the System z mainframe.

IBM Service Management Center for System z Products - May 2008	
IT Service Management & Process Automation	<ul style="list-style-type: none"> ● IBM Tivoli Business Service Manager for Linux on System z V4.1 (<i>ITBSM</i>). ● IBM Tivoli Application Dependency Discovery Manager for Linux on System z V7.1 (<i>ITADDM</i>). ● IBM Tivoli Service Request Manager for Linux on System z V7.1 (<i>ITSRM</i>). ● IBM Tivoli Change and Configuration Management Database for Linux on System z V7.1 (<i>ITCCMDB</i>). ● IBM Tivoli Enterprise Portal for z/OS V6.1 (<i>ITEP</i>). ● IBM Service Management Essentials (<i>Bundle of ITSRM, ITCCMDB, 5 processes, & ITRPM</i>).
IT Process Management (<i>ISM products, ITIL supporting</i>)	<ul style="list-style-type: none"> ● IBM Tivoli Availability Process Manager (<i>ITAPM</i>). ● IBM Tivoli Capacity Process Manager (<i>ITCPM</i>). ● IBM Tivoli Release Process Manager (<i>ITRPM</i>). ● IBM Tivoli Storage Process Manager (<i>ITSPM</i>). ● IBM Tivoli Business Continuity Process Manager (<i>ITBCPM</i>). * ● IBM Tivoli Unified Process Composer V7.1 (<i>ITUPC</i>). Workstation product. ● IBM Tivoli Unified Process (<i>ITUP</i>). (<i>Free, read-only</i>). Workstation product.
IT Financial Management	<ul style="list-style-type: none"> ● IBM Tivoli Asset Management for IT (<i>ITAM for IT</i>). ● IBM Tivoli Usage and Accounting Manager for z/OS V7.1 (<i>ITUAM</i>). ● IBM Tivoli License Compliance Manager for z/OS V4.2 (<i>ITLCM for z/OS</i>). ● IBM Tivoli License Compliance Manager for z Linux V4.2 (<i>ITLCM</i>). ● IBM Tivoli Contract Compliance Manager V3.7 (<i>ITCCM</i>). ● IBM Tivoli Decision Support for z/OS V1.8 (<i>ITSDS</i>).
IT Security Management	<ul style="list-style-type: none"> ● IBM Tivoli Compliance Insight Manager Enabler for z/OS V8.5 (<i>ITCIM</i>). ● IBM Tivoli Federated Identity Manager for z/OS V6.1 (<i>ITFIM</i>). ● IBM Tivoli Security Operations Manager V4.1 (<i>ITSOM</i>). ● IBM RACF family on z/OS, z/VM. ● IBM Tivoli zSecure Suite, supports z/OS, z/VM, CICS, RACF. ● IBM Tivoli Identity Manager for z/OS V4.6. (<i>ITIM</i>) ● IBM Tivoli Access Manager with z/OS Support V6.0 (<i>ITAM</i>).
Mainframe Operations & Production Control	<ul style="list-style-type: none"> ● Tivoli Enterprise Portal (<i>ITEP</i>). ● IBM Tivoli Workload Scheduler V8.4 (<i>ITWS</i>). ● IBM Tivoli Workload Scheduler for z/OS, V8.4 (<i>ITWS</i>). ● IBM Tivoli Workload Scheduler for Applications V8.4 (<i>ITWS for Applications</i>). ● IBM Tivoli Dynamic Workload Broker V1.2 (<i>ITDWB</i>). ● IBM Tivoli System Automation for z/OS V3.2 (<i>ITSA</i>). ● IBM Tivoli Systems Automation for IOM V2.1 (<i>ITSA for IOM</i>).
Mainframe Performance Monitoring & Management	<ul style="list-style-type: none"> ● IBM Tivoli OMEGAMON XE family, most for z/OS, mostly V4.1.0. (<i>Long list, IBM brand for System z PA/PM</i>). ● IBM Tivoli Monitoring family V6.2. (<i>ITM</i>) (<i>Core technology and products for distributed platforms, also in above</i>). ● IBM Tivoli Performance Analyzer V6.1 (<i>ITPA</i>). ● IBM Tivoli Composite Application Manager family. (<i>ITCAM</i>) <ul style="list-style-type: none"> ● IBM Tivoli Composite Application Manager for SOA V7.1. ● IBM Tivoli Composite Application Manager for Internet Service Monitoring V6.1. ● IBM Tivoli Composite Application Manager for Response Time Monitoring V6.2.
<p>* = New product/release announced Q2 2008 (<i>PULSE</i>) ? = System z availability/usage unclear VX.Y = Latest version available or due, if labeled. (<i>ITXXX</i>) = Product abbreviation, name word initials</p>	

Figure A1: IBM Service Management Center for System z Products - May 2008

Related Software Strategies Mainframe Research

1. **"New IBM Smart SOA, Enterprise Modernization, & AD Software Powers System z's Enterprise-wide SOA Role."** White Paper, published May 2008, 72 p.p., 19 charts & tables. *(Our in-depth evaluation of IBM's latest Smart SOA, Enterprise Modernization, and AD Software advances for System z as at Q2 2008.)*
2. **"System z Central to IBM's Burgeoning Information on Demand - Cognos Buy, New IOD Software Powering Strong Growth."** White Paper, published March 2008, 62 p.p., 18 charts & tables. *(An in-depth assessment of IBM's impressive, now-comprehensive, IOD strategy and product portfolio for System z as at Q1 2008.)*
3. **"Mass Distributed Server Consolidation - System z Mainframe Linux-on-z/VM Extreme Virtualization far Outclasses Over-hyped x86/x64 Approaches."** White Paper, January 2008, 72 p.p., 27 charts & tables. *(In-depth study of scale-out distributed computing problems, and discusses how Linux-on-z/VM extreme virtualization enables mass-consolidation onto System z for huge savings.)*

About Software Strategies

Software Strategies is a specialist analyst firm focused on enterprise IT platform strategies and issues. Specialist expertise on mainframes, servers, operating systems, and on middleware software/tools, has been our common thread. Since 1997, we have worked closely with numerous industry leaders, including: IBM; Unisys; Microsoft; Intel; Misys; Fidelity National Information Systems; CA; BMC; Stratus Computers; ICL; NetIQ; and others. Many tens of thousands of Enterprise IT users have benefited from our authoritative reports, white papers, and our presentations at scores of IT events, seminars, and conferences.

Author

This new Executive Paper was researched/written by Ian Bramley, Managing Director of Software Strategies, and was published in June 2008. The views expressed are those of Software Strategies alone, and are based on our proprietary research. Ian founded Software Strategies in 1997. He is an experienced enterprise infrastructure analyst, has published scores of popular reports and white papers, and has served as a keynote speaker at many industry events. Previously, he was Director of Enterprise Platforms at Butler Group, and Founder/Chairman of the Enterprise NT Management Forum industry group from 1998 to 2001. Previously, he held executive positions with four international software/services vendors over a 25-year, prior IT industry career.



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