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IBM iSeries —
The Benefits of an Integrated Systems Approach

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Management Summary

Some businesses use computing as a tool, the way, in the old days, a secretary used a typewriter – as the way to get (discrete) things done. Enterprises, which come in all sizes, use computing as a business environment, to support a variety of processes that must be coordinated, and that often use the same data. Not only does Information Technology (IT) keep the books, but also it supports workflows, collaboration, e-mail and, perhaps, for some, the telephony of VoIP. IT systems keep inventories of assets, supplies, and products coordinated, manage service forces, and underwrite administrative and human resource functionalities. How all these systems are coordinated affects not only the enterprise, but its partners, customers, and potential customers as well.

Much of the value proposition of technology is in how it is used. This goes beyond how technology saves time (which it does admirably) or changes what goods and services cost (which it does inexorably), and significantly includes how technology redraws the parameters of what it is possible to do. As this last value is less measurable, more attention is paid to the first two, but the third, being additive over time, is the most important.

These days, IT offers a variety of vehicles by which to accomplish business process. There are the lightweight vehicles of server farms and J2EE environments, with easy fail-over and try-it-again persistence. Like fleets of bicycle couriers, these environments enable certain kinds of flexible, low-cost processes. There are also the stalwart never-down tanks of high-end, SMP servers. There is the mass transit of outsourcing, where there is money to be saved, but limits choice and freedom of action. Most enterprises will take advantage of all of these vehicles, but they still want a core environment – a family car – that is well suited to their needs and capable of addressing the opportunities they covet and the risks that they face.

For such a core system, integration and ease of use are the ideal combination. Such a system must have a capacity to support all the wacky things an enterprise wants to do, often on multiple platforms, without compromising the quality of core processes. It must support composite applications and Web Services with the partitioning and virtualized resources to make such ventures economically prudent, without undue waste or the need for high-touch services. Moreover, it must have all the security features built in, so that an enterprise can act with confidence. These features comprise the value proposition of an integrated system.

IBM *iSeries* represents such an integrated system in a single box, with all the inherent manageability that deftly co-located assets can afford. It's setting as part of a large sea of IBM products and services gives iSeries extensible potential that can make it an even more potent environment for business. For more details, read on.

The New State of the Enterprise

For those charged with implementing a strategy that will bring growth to the business and a return to shareholders, the IT business support vehicle must have certain characteristics.

- *It should be cost effective*. A hybrid car's gas mileage decreases the total cost of ownership with every mile you drive. Similarly, a well-integrated, suitably-equipped IT environment can be the most affordable choice for the long run.

- *It must facilitate change*. The traveler should not buy a low-slung car built only for city streets or racetracks. The enterprise should not try to support itself only with inflexible piece parts.

- *It must reduce risk as best it can.* Seat bags and air bags are standard. Roll bars may be useful. Similarly, an IT environment with security capabilities built into the operating system is better than one with security pasted on

- *And it must facilitate the process integration*. As with the automotive equivalent of optimizing the number of trips to the store, this is mostly a matter of proper administrative procedures. Still the environment can be helpful – or not. A distributed system adds more points of failure and more sources of latency to a process. Minimizing that latency is key to a business' ability to produce goods and services of quality at competitive prices.

For the enterprise, all of the capabilities above have gotten more complex to achieve. The reuse of process components has made charge-back (and the ability to do cost-benefit analysis) less straightforward. The change that must be facilitated often involves multiple components with multiple frailties that modeling cannot always discover ahead of time. Risks have proliferated and are not addressable by a single solution, since the simplicity of isolation is counterproductive to most business plans. Integration of business processes is challenging across a WAN, feasible across a LAN, and optimized if the processes can be more closely co-located. Centralizing related processes on a single server minimizes the latencies of negotiations between linked processes.

Therefore, **the ideal business support vehicle must be capable of running multiple applications on some kind of robust, secure partition (blades, hardware and software partitions, or virtual machines). It is useful if multiple operating systems are supported. It is crucial that it have the management - a concierge, if you will - to manage this polyglot society.**

iSeries gives a variety of vehicles for multi-tenancy, supporting both hardware and software partitions as well as the hosting of virtual machines. It supports multiple operating systems. Its native operating system, *i5*, has decades of development honing it for the role of a concierge – moreover, a concierge that speaks a language architected for ease of administration. Applications running on i5 get the most benefits of this ease of use, but other applications on guest platforms reap the benefits of iSeries' asset virtualization, workload balancing, and other advanced functionalities.

Why This Is Important Now?

- The need to produce **an optimized end user experience** means the system that supports that experience must be managed as an integrated whole.

- The **collaborative nature of most organizations** demands an integrated approach to coordinate the efforts of all stakeholders.

The emergence of composites of modular applications (service-oriented architectures) as the way to leverage existing process in new ways or to address new markets has interesting and challenging management ramifications. Management must optimize a process to its business priority, while simultaneously supporting the control spaces to support resource negotiations by all processes using a resource. This is easiest if there is a neutral oversight of all the relevant resources, with the integrated resource control to best administer all processes and the system as a whole simultaneously. Moreover, it is not just the operational applications and their interrelations that must be supported, but also their links to enterprise–wide applications like ERP, CRM, and the auditing that supports regulatory compliance.™

No business is an island. Most enterprises, large or small, are ecosystems, either by design or by association. Therefore, it is useful to have an IT environment that is architected as an integrated system, and not an aggregated litany of elements.

The Example of Banking

The need for and use of an ecosystem of support is well illustrated by the world of banking. Banks have a deep heritage of technology use. Banks have the need for totally reliable and provable transaction integrity. They also have a chronic problem of customer churn, as evidenced by the merge and spawn cycles of the banking industry as a whole. Recently, satisfaction has centered on real-time responsiveness, on-line services, and a quick decision on requests for mortgages and other forms of financing, including spry analysis of alternatives.

Banks have governmental requirements that cover both operational and social obligations. Operationally, regulations demand off-site failover capability and remote replication of financial and some other information. The social obligations include such things as the requirement to monitor and report transactions of over a certain size. Recently, these obligations have expanded to include following the money trails of socially malignant groups.

And yet, with all these requirements, banking also has all the retail-style integration demands of any commercial enterprise – the need for a comprehensive view of the customer that still protects that customer's privacy, the need to knit together the business units. Legacy processes, hardened over decades, are crown jewels that cannot be discarded. iSeries is used by over half of the world's top fifty banks because it is a cost-effective platform that supports the integration these large institutions require. It is used by smaller institutions that cherish its ease of management.

Some may wonder what the example of banking has to do with their business. Every business is based on its financial underpinnings, profit or non-profit. Every business survives by providing something of value to somebody, and cares deeply about the satisfaction of its customer base. In addition, many businesses, particularly large ones, are touched by government regulations. Pharmacology has its FDA regulations, and manufacturing now has obligation to provide track-back forensics for any product defect.

ISeries Advantages

iSeries has been designed over 27 years as an integrated, easy-to-use system. Its role is that of the quiet guy who has it all together - not flashy, not brash, but quietly competent - someone who happens to have the talents needed to turn a potential problem into an opportunity; someone who facilitates change, rather than resenting it; and who is a good companion for the long haul.

The i5/OS is a largely self-managing operating system. Virtualization, workload management, security, *DB2 Universal Database*, and *WebSphere Application Server Express* are all integrated in, allowing it to act as a concierge for whatever assortment of applications are running. Micro-partitioning, support for java virtual machines, virtualized internal communications, virtualized I/O, and internal storage allow many applications to be hosted and well managed on a single machine. The multi-platform support of iSeries includes not just i5/OS and Linux, but also Microsoft *Windows* (through either of two interface vehicles), *AIX*, *WebSphere* and *Java.* iSeries preloads and pretests software so that on-site deployment can be more expeditious.

Rugged core applications of many Industries, not just banking, have run on iSeries for 27 years, without a single need to recompile, yet iSeries will also support new applications and new application management models. iSeries benefits from IBM's *Chiphopper* program supporting porting Linux-on-Intel applications to other IBM platforms. There are four models of iSeries offered through IBM's *Express* Program for Small and Mid-Sized businesses[1].

Last year, IBM launched the *Charter for iSeries Innovation*, a well-funded initiative to

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[1] For a still fuller examination of IBM's *Express* program, see *The Clipper Group Captain's Log* dated August 18, 2004, entitled *"IBM Express Redefines How the Smaller Business Buys IT,"* available at http://www.clipper.com/research/TCG2004068.pdf.

spur the development of new applications and tools for the iSeries platform. This has resulted in many new applications being developed on the platform, and the development of tools to support RFID, portals, and personalization, .Net integration, Web Services, and support for mobile devices and other constrained client environments. The result of these efforts is a full ecosystem that makes the platform not just viable but vibrant going forward.

Leveraging the Larger Ecosystem of IBM

Nonetheless, it is even better if there is a larger environment to offer a wider variety of targeted enhancements your business just might need. The following small sample of IBM software is based on open-sourced *Eclipse*. They have the highest degree of obvious relevance, but IBM's Agenda and Partner Programs also demonstrate iSeries' *active player* status in the BIM portfolio.

- **WebSphere is a J2EE development environment.** An Express version of the WebSphere Application Server is integrated into i5/OS, but the full WebSphere portfolio extends to more than 100 modules that provide the piece parts an enterprise needs to evolve and integrate the applications it uses. WebSphere offers particular capabilities, based on XML extensions, such as WebSphere XD, which now can support batch processing in a J2EE environment. This may be just what you need to use J2EE to integrate more fully your operations process.

- **iSeries is one of the platforms supported for *ITCAM* (IBM *Tivoli Composite Application Management*) on its first release.** This management product coordinates the traditionally parallel and separate realms of application, database, and system administration to enable properly integrated management of composite applications. This integrated management includes timely fault isolation, performance management, and optimization, using Tivoli's *Portal* and *Change and Configuration Management Database* to support the integration.

- **IBM's Partner Programs offer a rich variety of industry-specific communities and regional solution brokering initi-**

atives that customers can leverage the experience, expertise, and industry best practices of others, in addition to the basics of knowledge transfer, certification, marketing assistance and access to IBM financing. The existence of no-fee partner programs - and the construction of blended programs of partners including application vendors, systems integrators, and resellers with particular expertise - has attracted a very broad range of partners that may have exactly the expertise that your enterprise needs today.

- **IBM's System Agenda of Virtualization, Openness, and Collaborative Innovation** provide a statement of IBM's strategic direction that focuses on making IBM products easier to use, easier to deploy, and more opportunistically brought to market. Note that this is remarkably congruent with iSeries' design imperatives.

Conclusion

Is integrated computing an imperative for re-centralization of everything? No. There is a need for rich clients for generating and thin clients for capturing data. An integrated system provides an environment that can support what you have to do, can integrate what you want to do, and that can keep things safe, up and running, no matter what becomes part of your processes. Consider the freedom you can get from an integrated system.

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