A Solution for Rapid Growth and Constant Change — Start-up Nexxar Group Chooses a Mainframe

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Management Summary

The *aggregation of common processes* to be presented as *customized services* – the *service bureau concept* – has been a popular business strategy for decades, particularly in regulated industries such as banking. In such environments, keeping current with regulatory changes is a task far more efficiently done by a specialist as a service. In the past several years, the fertile seedbed of opportunity provided by the Internet provides an opportunity for a lot of small, private companies to thrive – but not necessarily to scale. Venture capital has seen the virtue in service-bureau-style aggregators that will take small private companies with similar processes and combine or co-locate them to take out overhead costs. This aggregate can then efficiently propagate value-added products across its aggregated (but still, somewhat, disparate) businesses. The key is to provide multi-tenancy with adequate security while keeping operational costs under control.

Nexxar Group, Inc., a start-up company[1] based in New Jersey with a data center in Belgium, is an aggregator of the money transfer, check cashing, and money-order services that have typically been provided by small, private companies over limited domains. Nexxar wanted to provide these services both directly and as a private-label service to institutions such as banks that wish to offer similar services to their customers. This meant they needed not merely to rebrand a single service, but to support customized versions.

The first three companies that Nexxar acquired (it now has acquired 10) were disparate in the databases they used and the platforms they ran on. Nexxar decided to develop a core application for all its aggregated businesses on J2EE. They chose J2EE both because of its popularity and available skill set, and because the portability of J2EE would give Nexxar the time to make a careful decision on the hardware platform that would best support its business over time. That platform had to support well-isolated, highly-secure multi-tenancy in a way that would keep operational costs low as it scaled large. It had to be agile, i.e., respond well to change – both the bursts of money transfer activity that occur on Mother's Day, Christmas, or the back-to-school spending season, and to regulatory change. The regulations that cover these kinds of financial transactions are specific for each of the states, and, since 2001, have been joined by Federal anti-terrorism regulations.

Read on for more details of how IBM's System z9 BC turned out to be the most cost-effective solution for the Nexxar Group, providing, by their account, a 30% reduction in total cost of ownership.

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[1] Nexxar Group was formed in November 2003 and has received initial funding from FTVentures of San Francisco and New York.

The Allure of System z for Start-Ups

Nexxar Group wanted a solution that was friendly to heterogeneous assets, hospitable to multiple workloads, and scalable. They considered other IBM platforms (*Systems p* and *x*), as well as competitive products from other vendors. They quickly concluded that deployment of a single *System z* was the right choice for their environment. There are many reasons for their satisfaction

Virtualization

The ability to consolidate all their business workloads, via virtualization, on a processor optimized for Linux workloads, in Linux images, was attractive. Since one IFL[2] can support hundreds of Linux images, only one IFL was needed to start, in addition to a standard engine running *z/OS*. All of the mainframe's resources – CPU, memory and bandwidth could be split and allocated as needed. The ability to do qualification and testing on the same machine, in secure isolation, made bringing new capabilities live considerably simpler than when using separate physical environments.

z/VM virtualization works as a shell, not an emulation. This approach supports a more abstemious approach to software licensing. Unlike VMware's *ESX,* one software license is needed for the application server, and one license for the database, instead of one for each virtual machine. Wim De Ritter, Managing Director and CIO of Nexxar Group, also felt that ESX is not yet proven in a production environment with his characteristics.

On-Off Capacity on Demand

The reserve processors on System z may be used both for failover and for the temporary capacity, which IBM calls *On-Off Capacity on Demand*. Unlike similar offerings by other vendors, IBM allows the added capacity to be turned off, if the spike is shorter than thirty days. Nexxar's spikes of activity usually last about two weeks, allowing them to make good use of this feature[3].

Cryptographic Processor

As an aggregator and a purveyor of private-

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label financial services, **Nexxar uses System z's cryptography and its PKI certificate solution to offer the assurances that required by financial institutions and its own customers.** Both are essential tools, given its business model.

Mainframe Security Plus Row-Based Security of DB2 on z/OS

The System z's *HiperSockets* virtualize the I/O channel between partitions (within a z/OS image, for example, or between such partitions and a Linux image on an IFL engine, as a more specialized example, one deployed by Nexxar. By using memory-to-memory linking, rather than IP network communication protocols, performance can be greatly enhanced. **For Nexxar with segregated DB2 databases running under z/OS, each financial institution has their own application running in a Linux image on the IFL.** This not only enhances security (by isolation) but also facilitates speedier concurrent database access. Additionally, the processes are more scalable, with little effort, when compared against deployment of separate servers.

Furthermore, **DB2's row-based security on z/OS supports Nexxar's private label requirements for segregations of data.** It also could be helpful in implementing rules-based compliance strategy. As regulations change, the Nexxar compliance team creates new rules that are applied to the relevant data domains. Together with the segregated Linux images secured z/VM, these features provide a fully-secure service environment that Nexxar's business model demands.

A Familiar Environment for their Private Label Business

Many banks use Nexxar to augment the traditional services that they have offered to their customers. These banks all have mainframes that they have used for decades for their core processes. Optimization of integrated application processes spanning multiple partitions (or mainframes) is old hat to these folks. **Nexxar's ability to integrate seamlessly the services they present to customers is important to all parties concerned.**

Disaster Recovery

As De Ridder puts it, "Disaster recovery and policy updates in a distributed Intel environment were a nightmare." Europe's three-site disaster recovery requirements are also difficult for small start-ups to afford. Nexxar Group found that a contract with IBM Global Services was both

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[2] IFL is *Integrated Facility for Linux*, a mainframe processor optimized to support Linux environments.

[3] It should be noted that, at present, De Ritter has the headroom not to need the On-Off Capacity on demand. With his enterprise's business model, he expects to be using it by the end of 2008.

expeditious and cost effective for the immediate future. Nexxar is building a second site in Costa Rica, and will adjust their relationship with IBM when that is complete. **Having a long-term roadmap with a trusted partner who does not always demand more has proved to be very satisfactory.**

The Advantages of an IBM System z9 BC Solution

Less Up-Front Risk

IBM offered use of System z computers at its Montpellier, France Lab for Nexxar to test and qualify its application in a one-month Proof of Concept, before Nexxar agreed to go with System z. When Nexxar determined that its requirements fell somewhere between the capabilities of the Montpellier 890 and the expansive System z9, IBM offered them an early-support *System z BC[4]* – before it was generally available to take home to its data center in Belgium for a final test.

Efficient, Low-Risk Deployment

De Ridder had no mainframe skills, nor did anybody in his shop. Through a headhunter, he was able, in a few weeks, to find a systems engineer and a database administrator with mainframe skills – and those two were all that was needed to support mainframe operations.

The first step in deploying the new platform was to connect all the acquired companies' existing systems. Then data was consolidated in fewer places to optimize the transition to the mainframe. De Ridder said the data migration was straightforward and much less of a challenge than the cultural change of supporting an environment where business acquisitions and regulatory changes were frequent. **He credits the mainframe with making the cultural shift easier.**

To insure rapid and effective deployment, Nexxar contracted with IBM, who got the system deployed and tuned in twelve weeks. The transition of skills to run the system from the IBM SE and DBA to Nexxar's new hires took two weeks, since everything was properly documented. De Ridder expects that hiring and training the SE and DBA for his Costa Rica operations will not be a problem.

Savings Going Forward

With mainframe virtualization, the incremental costs of servers, software, and networking to support each new service environment can be avoided. More significantly, with deployment of their mainframe, Nexxar's IT headcount dropped from 28 to two[5]. While some of this was due to the aggregative nature of Nexxar Group's business model, a significant part of it was due to the efficiency of the mainframe as a consolidation platform and its ease of management.

Conclusion

Nexxar's experience debunks many myths about the mainframe that are commonly held and frequently cited by competitors.[6] In addition, Nexxar's experience offers operational efficiencies. **The pre- and post-sale support features of System z take time and risk out of procurement and deployment – two overhead processes that are often not part of the ROI calculation – but should be.** This kind of experience may be expected by very large, Global-500 enterprise, but for a start-up with large ambitions but modest initial needs, it was a dealmaker. **IBM's willingness to do what it takes to ensure a successful deployment and optimized use of their equipment – their desire to build a long-term relationship, not just make a quick profit, was just what Nexxar Group needed to pursue their strategy with confidence.**

If your ambitions are large but your operations must be high quality and low cost, check out System z. **The operations style of mainframe computing is surprisingly congruent with the needs and ambitions of Web aggregators, particularly those with relatively complex deliverables that are subject to regulations.**

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[4] See **The Clipper Group Navigator** dated May 23, 2006, entitled *System z9 BC - A Mainframe for the Not-So-Large Enterprise*, available at http://www.clipper.com/research/TCG2006040.pdf

[5] Since this will go to four when Nexxar's remote site is completed, De Ridder counts this as only a 70% savings in headcount.

[6] For more discussion of mainframe myths and realities, see **The Clipper Group** *Captain's Log* entitled *Mainframe Mythology Lives On – Setting the Large System Agenda*, dated May 3, 2006 and available at http://www.clipper.com/research/TCG2006038R

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