



Opinion

The Importance of System Software

Introduction

In February, 2000, Hewlett-Packard (HP) acquired Bluestone, a maker of middleware software, for \$467.6 million. In June, 2002, Hewlett-Packard announced its plans to exit the middleware business — instead relying on software partners (such as Microsoft, Oracle, and BEA) to provide the middleware stack that would run on their servers.

At that time, I told the press that this move was a huge strategic error for Hewlett-Packard.

In my opinion, by giving control of its middleware stack to other companies, Hewlett-Packard forfeited *the ability to control its developmental destiny*. And now, the company is paying the price for this decision:

1. Not long ago, HP's partners started pulling support for Itanium (HP sells around 90% of all Itanium servers in the market). Microsoft announced that it would no longer develop Windows for Hewlett-Packard's Itanium-based Integrity servers. (What this meant was that Integrity Windows users were left high-and-dry — they would no longer be able to take advantage of Windows advances in virtualization or management or security).
2. Red Hat has also pulled back its Linux development efforts on HP's Itanium-based servers.
3. And, more recently, Oracle announced that it would no longer develop its middleware stack and applications on Hewlett-Packard's Itanium-based servers.

The customer satisfaction issues resulting from these pullbacks must be horrendous...

What Losing Control of Your Company's Developmental Destiny Means

Hewlett-Packard's exit from the middleware business was bad (in my opinion); but Hewlett-Packard is also in another disadvantageous position when it comes to systems software. As of late, middleware and systems software (software stacks include middleware, operating environments, virtualization software, management software and more) have taken on an even more strategic role at vendors that make hardware and software products.

Computer makers that build their own middleware/software stacks can optimize them in order to create major performance advantages for applications that run on those platforms. As an example, IBM's "smarter systems" (packaged, optimized hardware/software solutions) employ streamlined software paths through the company's middleware to the company's databases in order to deliver improved performance that is orders of magnitude

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greater than solutions that have not been software pathed. Software pathing is, accordingly, creating huge competitive advantages for IBM.

To be fair, HP may not provide middleware, but it does offer some systems software (systems/software management, virtualization, power management, several operating environments, and more). But the problem with HP's position in the systems software market is this: if Itanium is made redundant by Intel Xeon processors (and we think Itanium will be made redundant), then HP's system software strategy starts to fall apart.

A lot of HP's software stack value-add is tied to the company's operating environments. If Itanium fails, then the systems software strategy fails (or becomes constrained because HP would essentially become an x86 server company and its software would need to go head-to-head with the x86 ecosystem of systems software). To illustrate this more vividly, consider HP's hypervisor and virtualization software that runs on HP UX. If Itanium fails, then HP UX fails, as does HP's virtualization systems software.

The Formation of IBM's System Software Group

Software pathing and middleware/system software optimization have become so important at IBM that the company has even created its own "systems software" organization (SSW) chartered with the responsibility of packaging and promoting solutions that run on IBM System x, Power Systems, and System z platforms. Elements of the stack under the control of this organization include virtualization (including both systems and storage virtualization), management (including integrated service management as well as cross platform management), energy, security, availability, and operating environments.

So far, the results have been spectacular. According to Inna Kuznetsova, vice president of marketing and sales enablement in IBM's systems software group, revenues for the products under the group's control have increased 36% for value-add products (value-add includes all SSW sales except operating systems and VMware resale revenue). According to Kuznetsova, "Systems software improves performance — and systems software differentiates our products from those of other computer makers".

In a recent IBM Webcast, Kuznetsova explained some of the challenges faced by CEOs and CIOs, and demonstrated how systems software can help overcome those challenges. According to Kuznetsova, "66% of IT budgets are allocated to maintenance, leaving very little for innovation and new projects. Our virtualization solutions help improve business agility and staff productivity, lowering labor costs while improving the business value that IT can deliver to the business".

Based upon customer research conducted by the SSW group, Kuznetsova explained how customers are seeing increased efficiency and approved utilization by using virtualization products (including IBM virtualization products such as PowerVM, as well as third-party virtualization products such as VMware). Her survey results showed that IBM customers are seeing an 8:1 reduction in server footprint, average of \$600 in energy savings per server per year and see an overall 10% reduction in electricity costs per workload. Kuznetsova also highlighted the benefits that IBM customers are seeing when deploying virtualization solutions on IBM's System x (the company's x86 multi-core-based servers). "With System

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x”, she claimed, “Our customers are able to get 78% more virtual machines on our servers because of our special eX5 memory management system — while paying licensing costs on a per core basis. This is like getting a bunch of extra computers for free.” Her data also showed that IBM customers are paying for 50% fewer VMware licenses, and are seeing up to 96% reduction in energy costs using IBM System x servers. Customers using IBM's Tivoli management software products also saw efficiency improvements, as well as lower human related labor costs. According to the SSW survey, customers also enjoyed a 40% reduction in storage costs through improved utilization with Tivoli, as well as a 40% drop in labor costs because systems administrators were able to manage more servers using various Tivoli products. And finally, IBM customers using IBM Power Systems were seeing a 34% drop in the average cost to run a PowerVM solution as compared with a VMware solution on x86 architecture.

On the cloud front, by using IBM products such as CloudBurst, SONAS, and IBM service delivery manager, customers are able to load more than 2000 virtual machines into a rack; while reducing systems administration costs by 30% and provisioning costs by 30%; and increasing storage scalability by a factor of seven.

Summary Observations

By dropping out of the middleware, Hewlett-Packard put itself at a major competitive disadvantage as compared with IBM and Oracle (the only two companies in the industry that build middleware, complete software stacks, and related hardware).

In the systems software business, much of HP's value add is tied to its Itanium-based servers — and we're not buying Hewlett-Packard's claims that Itanium is significantly different than Xeon and that it will be around for the long run. We think that at some point Hewlett-Packard will have to stop spending big money building Itanium-based scale-up and scale out systems designs — and that ultimately Itanium servers will be available as specialized blade processors.

We are impressed by what we are seeing at IBM from a system software perspective. IBM's use of system software is a major differentiator and is increasing revenues accordingly. We have not seen the same focus or improvements in sales at Oracle, but we believe that they, too, will start focusing on system software as a differentiator during the next year.

As a parting comment, consider this: middleware and system software are strategically important. Vendors that don't recognize this point and work to correct their deficiencies are going to find themselves in a strategically disadvantaged position for years to come.

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