

BUYER CASE STUDY

SAVVIS Leverages Virtualization to Reshape Managed Services

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IDC OPINION

The concept of utility computing has long been propagated in the technology industry. While a powerful vision, implementations have been primarily limited to early adopters. One of those adopters, SAVVIS, has been offering a utility computing service since 2004. The company is using this offering to differentiate itself in the hosting market by lowering cost and improving service levels for customers relative to traditional managed services. SAVVIS is leveraging the Egenera BladeFrame system and Egenera PAN Manager software as key elements of its Utility Compute platform. As the size of its utility business grows and the underlying technology matures, SAVVIS is also looking at how a utility environment will enhance the company's business model. Specific metrics from the utility offering include:

- The Utility Compute service currently represents 15% of SAVVIS' hosting business, up from 3–4% of the business in 2004.
 - SAVVIS' typical deal size is in the 4–12 server range — with large customers having 80–100 servers in the utility environment.
 - SAVVIS believes it can reduce customers' monthly opex by up to 50% and deployment times for new services from 20–30 days to 5 days for a fully hosted environment.
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IN THIS BUYER CASE STUDY

This IDC Buyer Case Study looks at how SAVVIS is creating a utility computing offering within its hosting business. It examines the motivations, benefits, and challenges SAVVIS has faced since rolling out the utility offering in 2004. It also looks at how technology partner Egenera enabled SAVVIS' concept of a virtualized resource pool.

SITUATION OVERVIEW

Organization Overview

SAVVIS Inc. (Nasdaq: SVVS) is a leader in IT infrastructure services for business applications. With an IT services platform spanning North America, Europe, and Asia, SAVVIS delivers "secure, reliable, and scalable hosting, network, and application services." These solutions enable customers to focus on their core business while

SAVVIS ensures the quality of their IT systems and operations. SAVVIS' strategic approach combines virtualization technology, a global network, 24 datacenters, and automated management and provisioning systems.

The cornerstone of SAVVIS' business, from an IT service provider standpoint, is that it endeavors to deliver on a utility basis wherever possible. In fact, SAVVIS has been in the virtualization space since the company's inception, going back to some of its original network products. This network service approach was implemented to try to minimize the amount of CPE that is spread out around to customer endpoints and on a software-instantiated basis and deploy instances of customer-required IT services without rolling additional boxes.

Initially, SAVVIS deployed a virtual private networking core product set called Intelligent IP that essentially ran through a core quality of service-enabled networking cloud — and a suite of network subscription-based products that could deliver routing within the cloud, firewalling within the cloud, and quality of service within the cloud — with just a very simple bridging device at the customer endpoint. That is the core of what SAVVIS' business started out with.

One of the areas where SAVVIS established momentum for its initial network-oriented solution set was in the financial market data community. The company offers a suite of products that deliver market data to a host of endpoints across a wide area network. From this, SAVVIS developed a very extensive proficiency at not only managing a virtualized network and a suite of network services but also the server-based market data feed endpoints.

The more SAVVIS looked at that core competency of managing servers, the more entering the hosting market made sense. Initially, the company acquired Intel's Online Services and then, shortly thereafter, in late 2003/early 2004, it added the assets of Cable and Wireless America:

That is how the company has started to grow [in the hosting business], but during all of that, and as we have rationalized products across those product lines, [we] virtualized wherever possible and deliver utility services wherever possible.

The company segments itself into six distinct service areas: network, hosting, security, digital content services, professional services, and utility computing. For this case study, we spoke with David Shacochis, VP of engineering and development programs. Prior to this role, Shacochis worked within SAVVIS' product management organization, running the hosting and the utility computing product lines. Questions pertained to SAVVIS' Utility Compute offering, and all quotes are attributed to Shacochis.

Challenges and Solution

As SAVVIS moved into the hosting space, the company really wanted to take those same tenants that were successful in the networking space and apply them and map them into the hosting space. That is why it started examining companies that "really got the IT resource pool story."

As Shacochis said, "It was in the 2003 time frame that we started really looking hard at Egenera as [the company] was clearly the leader in the space ... it had the computing pool and compute resource virtualization really ironed out well."

Egenera's track record on Wall Street helped SAVVIS overcome some of the reservations associated with working with a smaller vendor. But what ultimately won the business was Egenera's technology. "[Egenera] vastly simplified our approach in the computing space and really became the cornerstone of a product we launched in early 2004 called Utility Compute. Since then, we have rolled the product out."

Business Drivers

SAVVIS' motivation was to use utility computing as a differentiator and to speed time to deployment:

When you take a look at some of our traditional managed hosting products, the time it takes for us to get one of those servers up and running, despite all the standardization approaches that we take and despite all the automated build process that you can roll into a server farm, it is still more costly to get a discrete, rackable system out to the datacenter, get it cabled up to the right networks, get it configured and booted up and powered, and then document exactly where it is. It still costs a lot more to roll out a traditional managed hosting product node than it does to roll out one on the Egenera platform.

In addition to the cost to deploy, SAVVIS sees cost-to-support and customer availability benefits as well:

With the value proposition provided by a Utility Compute offering, the main benefits [the customers] enjoy and perceive are largely focused on simplicity and the stability of the platform. There is less cabling, fewer points of failure and a simpler and more straightforward server state. We also designed the economics of the platform to include a built-in pool of failover servers so that should they have any hardware device fail within that Egenera frame, we will automatically fail over to another blade within the Egenera frame.

Customers receive availability as part of the SAVVIS offering, and hence the company tries to "dig into the business needs, the total solution value":

When a customer says they need a cluster, we try to give them options on how to fulfill that need. They could buy a couple of ProLiant, and we can cluster them with Veritas or software-based Microsoft tools or whatever they need. However, we also present the utility option. If recovery time objective is not very, very small and precise and [the customer] can afford some data loss, potentially [they] can save a ton of money on software licensure and on hardware while still getting very high performing computing "power" out of a single blade that has a built in failover. For a lot of customers, that is a pretty sweet song to hear, not having to pay for all of the clustering software and all of the software licensure costs of trying to design redundancy and availability using the traditional tools.

Challenges

In terms of the hurdles associated with rolling out a utility service, SAVVIS has found that there are those that are cross industry and those that are vendor specific. In terms of cross industry, the first one identified was associated with the speed of new processor introductions. These rapid turns in new products meant that Egenera and hence SAVVIS had to rapidly update the server hardware to meet customer expectations. Changing the perception that the customer must have the absolute latest processor is something SAVVIS continues to try to manage:

The hard part for us has been trying to get the market to start thinking about computing capacity in a little more of an abstract, minimum specification way. Everyone wants to know down to the hundredth of a gigahertz what their CPU clock speed is. Everyone wants to know exactly what kind and exactly the amount of RAM that is on the particular machine. It's challenging for us to keep up with all the chip revs and therefore Egenera blade revs that they all roll out and keep EOLing. We are really hopeful that our next virtualized utility computing product lines will allow us to sell a service level. [We want to] get to where the machine state really does become abstract.

The other challenge is in matching the customer needs to the right service offering as not every customer is ready to move to a utility environment and not everyone needs the benefits that virtualization provides. As Shacochis says, "Some customers just want simple, cheap CPUs."

Finally, the challenge was to become proficient and integrate with Egenera. SAVVIS' experience was "roughly equivalent to the integration work we have to do with any new technology that we are putting into our datacenters as we found the Egenera Pan Manager software interface was very straightforward to get our engineering and operations team trained up on."

Results

SAVVIS has over 1,500 different servers, representing hundreds of customers, running on its Utility Compute platform. The traditional hosting business for the company has about 10,000 servers under management. So the utility represents about 15% of the overall portfolio in the hosting space and is the fastest-growing part of the company's business.

As Shacochis said:

It's a 15% number now, and at the end of 2004, it was probably 3–4%, and we have been very happy with the success of the product line. It has given us good returns and margin.

A key for the company to continue on this upward trajectory is the removal of "cultural" barriers. To combat this traditionalism, the company is trying to bring costs down and enhance service levels of the utility offering so that it's more compelling to customers. "We need to make utility a more compelling alternative to the 'same old–same old' [way of doing things]."

A typical customer deployment for SAVVIS is in the 4–12 server range on the platform, though SAVVIS has some customers in large outsourcing deals that have 80–100 servers running on the utility. From a workload perspective, SAVVIS' utility business is skewed toward business processing, decision support, and collaborative computing. Anything with a three-tier architecture is a strong fit from an application perspective.

From an uptime perspective, SAVVIS' utility offering is on par with traditional hosted models — which, according to the company, is north of 99.9%. SAVVIS feels through a utility it can offer the same and/or better SLAs — especially as the vast majority of all outages are change related and have nothing to do with the stability of the platform. Through automation, SAVVIS feels the utility offering can offer higher SLA by minimizing errors in the provisioning process, which has led to, according to SAVVIS, "pretty stable and low churn rates" on the utility hosting platform.

By far the biggest impact comes in the time to deployment — the length it requires SAVVIS to roll out a new service for a customer. With traditional hosting, the company quotes a 20–30 day timeline to get the infrastructure procured and installed and the service up and running. With the utility environment, SAVVIS can shorten this to no more the five days:

That is not just five days to get a single server up; that is five days to get the whole solution up — front-end network with a redundant rebuilt firewall, a redundant rebuilt load balancer package, utility SAN-based storage on the back end, and server blades in the middle.

It's not for everyone, but if a customer is looking for speed of deployment or if the customer needs a cluster, SAVVIS believes the utility environment offers value:

We are able to easily save 50% in opex for a customer that is looking at potentially building out a pair of machines with clustering software and redundancy software built into what their database or application software requires, and we are able to say, based on your recovery time objectives, this platform is very suitable for you. Those customers who fit the usage profile, who take advantage of what Egenera allows us to offer, are able to easily save in the neighborhood of 50%.

The key is finding the customer with the right business need and that fits that profile. In those situations, the company believes it is more competitive because of the design tenants that Egenera enables. And as long as speed and availability are critical, SAVVIS sees growth in its utility offering.

FUTURE OUTLOOK

SAVVIS is looking at combining I/O virtualization with server virtualization to drive higher utilizations:

We are looking at Egenera's implementation of the hypervisor and integration with its tool set. We are taking a look at using virtualization on a very broad basis. We are also looking at

potentially using Egenera and some of its software intellectual property in order to potentially use some of its provisioning technology, which really is what Egenera's core competency is. It makes a fine blade server, but its core competency is in the provisioning software. That is really where their IP lies.

For SAVVIS, another logical next step is to leverage Egenera's PAN Manager IP to manage more than the Egenera hardware. "Egenera's ability to virtualize the server state has always been its core competency, and that really maps itself well to multiple types of servers in the computing space." This helps the company drive economy of scale advantages. "Our current vision is that Egenera systems could run the back-office applications with that same provisioning and management software technology controlling a heterogeneous farm of rack servers."

SAVVIS also sees the benefits of virtualization extending beyond I/O virtualization in the datacenter provisioning and datacenter resource abstraction space:

Clearly, the hypervisor-based virtualization we would characterize as equivalently exciting and the next wave of virtualization technology that is really going to take hold in the service provider market.

We in the service provider community know as well as anyone how underutilized all of those CPUs are. Once that machine state is completely virtualized and becomes free floating and formless, then we can move it from physical device to physical device with no downtime as some of the technologies like Xen Live Migration and VMware VMotion — once all of that technology is ready for primetime. As a service provider, you are in a situation where you can actually start looking at very mathematically accurate, safe, guarantee-based open subscription models for computing.

SAVVIS is starting to see all the cost and technology dynamics come into line — with I/O virtualization and server virtualization complementing each other:

The way Egenera works is it has the I/O virtualization backplane and everything essentially runs through a pair of devices within the Egenera frame, sort of built-in appliances called cBlades [Control Blades]. A cBlade is essentially an I/O bridge between each individual blade so that the blades can boot off of the SAN. Each individual slot within the machine that you can load into is called a pBlade [Processing Blade]. The next step is to add the granularity of server virtualization — something Egenera calls vBlade Software. With this, we should be able to take an Egenera BladeFrame with 24 slots [24 available pBlade modules] and carve each blade up into multiple virtual servers with say a half CPU each.

This ability to more granularly monitor, control, and provision both physical and logical resources creates a compelling business case for SAVVIS. The company can "put 600 cores on a floor tile and sell 800. From the five to seven years of usage data that we have collected we have a great deal of understanding of how people use their CPUs." Now they are on the cusp of having all the tools necessary being able to leverage that information real time to drive both customer and shareholder value.

ESSENTIAL GUIDANCE

The concept of utility computing is alive and well. The vision that has been articulated by the industry for years is in fact beginning to be implemented — although at a much more conservative pace than initially forecast. The motivation for utility includes taking cost out and increasing availability to improve IT service levels. That said, cultural resistance — specifically end-user concerns around breaking from traditional best practices — continues to be the gating factor for adoption.

Utility computing can become a differentiator in the service provider market and from there, IDC expects to see greater adoption with insourced IT. The key for technology providers will be to continue to add the list of benefits that a utility delivers in order to make the offerings more compelling and thereby chip away at those customer concerns about a new IT model.

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