

Applying effective Capacity Management solutions

Learn how to maximize the Capacity Management function to give a precise and scientific answer to the question of how much hardware is needed and how much to invest in it. This discussion is moderated by **Dennis Drogseth**, Vice President with Enterprise Management Associates, he is joined by two leading experts in this field: **James Cerwinski** of Raritan and **Robert Limbrey** from CA Technologies.



To listen to this podcast visit: <http://www.globaletm.com>

Dennis: How do you see the move to the virtualized infrastructure impacting Capacity Management software, disciplines and processes?

James: Virtualization accelerates every aspect of adding, changing or making moves. It now takes less time to add a new virtual machine than it did a physical machine. You can add more memory and CPU with a few clicks to that virtual machine where re-motion can move a machine dynamically. These virtual machines are much more dynamic and have sped up everything that used to take days. Now it takes minutes. Therefore you need a Capacity Management tool that is dynamic as the virtualized environment because as you are making these changes to the virtual machines and you are making them very quickly for the underlying infrastructure, whether it be a blade server or a series of servers supporting those virtual machines that needs to keep pace, you do not run into capacity bottleneck that your services cannot perform according to their SLA's [Service Level Agreements].

Dennis: So James, when you talk about virtualized infrastructure, and I realize I did not specify, are you talking systems primarily or only one network system storage, or what are you looking at?

James: What I am talking about is primarily virtualized systems. I see the systems as a part of it and as you pointed out when you make dynamic system changes that cascades to the other components within the infrastructure, it is your networking and your storage that needs to keep pace. So Capacity Management needs to handle the full chain of components that are required to ultimately deliver the services that customers expect.

Dennis: Robert, what are your thoughts in terms of where virtualization is taking us in terms of capacity?

Robert: The onset of virtualization has been a disruptive force to IT operations and to be fair, Capacity Management has struggled to keep up with the change. In many cases the role of Capacity

Management is somewhat diminished by the lack of insight they are able to bring to this space. There are several key risks, including over-allocation, where it tends to become a configuration issue. Let's, for example, look at service networks with a product such as a virtual server stack where the number of virtual resources being allocated exceeds the physical. It is a key risk that needs to be managed within this domain and it is the role of Capacity Management to ensure that these risks are brought to the table and made into an executive decision.

But just as equally, a key factor which drives the whole movement of virtualization is cost reduction. So you have a really interesting balance now between managing the risk of degradation of potential catastrophic failure of the VM [Virtual Machine] stack versus the cost drive, and it is the role of Capacity Management to provide that insight to executives, making the right call on investments and strategy.

Dennis: We talked about virtualization, now we should move this on to the cloud. There are many internal and external varieties following this definition of Platform-as-a-Service, Infrastructure-as-a-Service, Software-as-a-Service (SaaS) with the cloud. How do you see that impacting capacity over and beyond virtualization in the future?

James: You gave a good explanation of that because I was going to say what makes virtualization and cloud different is in virtualization there is a homogeneous method and a practice of deploying it. It has been out there for a longer period of time and is now fully into production, so I often find the organization that runs the actual virtualization environment is very much within the overall IT organization. These are people who have worked together for a long time and have ongoing practical relationships beyond the documented process relationships. Now with the cloud, it is still new and there are many flavors of that. And so the first question is what type of cloud do you have and who is managing it? So let's tackle one area where someone else is managing the cloud, and this is a stage where it becomes very important. It is a concept where the cloud supplier is

supplying capacity essentially at an arm's length relationship where there needs to be well-defined SLAs because you need to roll out new services and know that the provider of capacity through the cloud is going to ensure me that I have the capacity to deliver those services. So I need to have a very well thought out, well documented SLAs as to what the turnaround time is and what is the



Dennis Drogseth |
Vice President of Research,
IT Megatrends, Analytics and
CMDB Systems
Enterprise Management
Associates (EMA)

Dennis brings more than thirty years of experience in various aspects of marketing and business planning for service management solutions. He supports EMA through leadership in Business Service Management (BSM), CMDB Systems, automation systems and service-centric financial optimization. Dennis also works across practice areas to promote dialogs across critical areas of technology and market interdependencies. Prior to this, Dennis helped to build the network management practice area at EMA.

Prior to joining EMA, Dennis worked to develop marketing strategies and new business models for Cabletron's SPECTRUM management software.

expected delivery of that capacity. That has now shifted to a much more formal supplier/customer relationship with the need for very well thought out SLAs.

Dennis: Right, so classic processes for a change advisory board really don't map directly too well to V-motion, on the other hand a lot of the tools are and I think CA is a good example as well, becoming very dynamic and responsive to those changes. So James I am going to go back to you for the next shoe to drop on which is virtualization, how about the impact of cloud, is that a similar discussion or is it a little bit different?

James: It is a very good point that the ecosystem becomes very important where companies need to work together because in fact what you are trying to do is set up a scenario where the people that are the lowest cost provider of the individual components that make up the supply chain are the ones providing it. So I would be depending upon the cloud provider to be the lowest cost provider as well as meeting my SLAs in delivering the capacity that I need to run my business, establishing a good working partnership becomes very important, so in fact it might put us in a position where we need to reveal to that cloud supplier our growth plans, what are our services needs that we are going to be delivering in the future and then being able to visually inspect the cloud's ability, the cloud supplier's ability to deliver upon that. So for example adding new software packages might be fairly easy and fast, but if the cloud company is running into physical constraints in terms of capacity the lead times to mediate will be much longer.

Dennis: Robert I would really like to spend some time with you on this because CA Technologies certainly has a big investment both in the enterprise but also in the service provider space with Nimsoft capabilities and I wonder what your thoughts are in the cloud environment in terms of how the service provider community and the enterprise are going to work together and what technologies are going to make that most effective?

Robert: That's an interesting question because if you look at the way that contracts have been written maybe over the last five or six years, you will typically see that Capacity Management and cost management were not written into these huge outsourcing contracts. What the cloud is bringing us is a world of greater agility. Take a classic SaaS environment like Salesforce.com, you can ramp up and ramp down your usage and the cost is predicated by the demand. We see the same trend continuing in the cloud marketplace. We have already discussed in brief seeing that lowest cost providers who provide a quality of service that is adequate to you will prosper over a higher cost provider. What Capacity Management really brings to the equation is the ability to manage the cost, since capacity costs you money. If you look at running a typical data center, and at running typical IT operations, keeping the capacity lights on will consume 60-70 percent of the operational budget. With Capacity Management being able to deliver IT services in a leaner fashion, being able to implement a governance process around resource allocation, and control both the costs and the margin on your IT services means you can prosper in an open marketplace.

Dennis: I know of one deployment where business wanted somebody to go to Exchange on the cloud, they actually documented the fact it was cheaper to deliver it in-house, more efficient. So if you don't know how efficient you are and have the visibility into what you are doing. I am going to ask about a series of technologies and I guess I will start with you Robert and then go to James and then kind of comment on any one of them that you like or multiple of them. User experience management, performance analytics, TNDB, CMS, app to tenancy mapping, cross-domain automation and portfolio planning based on chargeback with insight. It is a long list so Robert, do you have any kind of comments on any one piece or multiple pieces there?

Robert: Well it is clear that there are a wide range of management processes to set up, risks measured in performance and cost managed by the chargeback process. ▶▶



James K. Cerwinski |
Manager
Data center infrastructure
management suite
RARITAN

James K. Cerwinski is an experienced manager having held senior positions with Lucent Technologies and AT&T. He has a proven record of accomplishments including producing technology-leading management solutions that deliver real long-term value to customers. He currently manages the Raritan data center infrastructure management suite including award winning products dcTrack® and Power IQ®. The suite offers data center managers Informed Capacity Management, Accurate Asset Management, Flexible Change Management and Efficient Energy Management.

It is clear that a number of these processes in larger enterprise accounts need to coordinate better.

For example, in my experience, it is extremely rare for the Capacity Management process to interact with the Financial Management one. This is a case where ITIL being a very disciplined and streamlined approach doesn't particularly help, but it is the combination of the financial and Capacity Management process that gives you the chargeback to allow you to provide agile cost, and cost-based services to your consumers.

Coupled with that: end-user monitoring, performance analysis is key for the assurance and for the measurement of service levels. And that service level management process, where you have multiple service providers, ought to become a key way to manage your business.

James: When I look at Capacity Management I am really excited about the ability for the information exchange and the flow back of data to actually allow Capacity Management to take a leap forward. For example, today much of Capacity Management is based upon engineering and planning assumptions and these assumptions are based upon some experiences over time. The assumptions are also dependent upon accurate asset information, meaning accurate information if you are looking at capacity in terms of using space available in a rack, if you are looking at capacity in terms of power, cooling in a data center, or CPU memory and other components. Accurate asset information is needed to determine what is actually available to you and what is actually in use.

What I am excited about is seeing more customers looking for integration of systems to provide a feedback loop, in terms of actual performance information. So the actual performance information will totally replace the planning assumptions. By comparing the actual information with planning information, you might be able to update those assumptions and have better assumptions. So you can keep your cost down and maybe extend the life of your existing equipment.

Someone without good capacity information will always lean on the side of buying more, adding more capacity

just in case because we are not doing a good job of planning. But if you improve the planning, you can then extend the life of your existing equipment, defer capital expenditures and have improved operational performance.

I am seeing more forward-thinking companies looking to integrate capacity information with their financial information. Although this is not widespread yet the forward-thinking companies are talking about how can we do that; the interfaces we need to do, the type of data that needs to be exchanged? Because what they really want is end-to-end tracking of the projects. They want to



Robert Limbrey |
Principal Sales Consultant,
Capacity Management
CA Technologies

Robert Limbrey is the EMEA lead in Capacity Management for CA Technologies, as part of the Virtualization and Service Automation business. Robert joined CA Technologies following the acquisition of Hyperformix in 2010.

Whilst at Hyperformix, Robert was responsible for regional sales and marketing activities in EMEA, and worked with strategic partners such as Accenture. Robert has specialist knowledge and experience in the Financial, Telecommunications and government sectors.

know from the beginning of project and be integrated with the capacity planning system, to take into account the additional components they might need, which might not be obvious to them and they might not have learned about them until they were well into the project.

Dennis: Robert, what skill sets and organizational structure really ought to own capacity planning and optimization in an enlightened progressive IT organization? What is the optimal political structure and the optimal role structure for IT to assimilate a truly cross-domain service vision?

Robert: I have a couple of observations to bring to this — the first thing is typically a capacity manager in an organization has very little actual influence over capacity decisions. Capacity decisions to me are something like: how much hardware should we invest in this year? What's the best way of configuring this new virtual environment? Where do we place these? But the capacity manager tends to not be in the loop on many of these key decisions. In fact ask any particular organization and how they calculate how much hardware to buy, you will probably find that what happens is a few of the key architects, maybe the VP of infrastructure, lock themselves in a room and look at spreadsheets to come up with a number.

In the Capacity Management process the capacity manager is not adding any value to this part of the chain, but this has got to change to deliver more efficient IT services.

An example of this is the case of SAP, where a number of SAP architects will get together in a room and come up with a number — typically more than what is needed. And nobody wants to take the risk that it is not enough and obviously incrementally it adds up, every management layer adds more overhead, just to reduce the risk.

Actually what a Capacity Management function should be doing is giving a precise, scientific answer to the question of how much hardware do I need, and how much do I need to invest? That typically is the kind of work that we get involved in and I will give you a second observation. If you go to any CFO and

ask them about Capacity Management, they won't know what you are talking about. No CFO knows what Capacity Management is precisely. What you have here is a cavern somewhere between the technical person, the technical capacity manager in IT and the CFO, who both know what Capacity Management is but all the layers in between are struggling to really grasp it.

Dennis: I couldn't agree more. What do you think about — you mentioned optimizing hardware, the infrastructure — and to what degree do you see portfolio planning as an extension of capacity planning and management?

Robert: That is a really good question because it isn't part of a life cycle; it is all part of a planning process, for project and portfolio management you need to interface with Capacity Management so that it can be part of that original cycle.

Again it is a question of integration rather than siloed processes and what we would promote would be the integration of that project and portfolio management together with the Capacity Management process working in harmony.

Dennis: That certainly makes sense to me. You are a CIO or a VP equivalent, but let's assume you really have the executive oversight and control. And you are dealing with all of the demands that we described and then some and you want to improve your capacity planning and optimization capabilities in a strategic and efficient way. What would be the number one recommendation you would make?

James: Dennis, I am a big believer that so much of what we have in terms of difficulties in doing things very efficiently is the lack of information. When different organizations talk about cross domain and try to make improvements without good basis of information it is very hard for them to agree upon an objective, a project plan and a measurement infrastructure. If I was CIO or VP of Ops, what I would want to put in place is an instrumentation view of the data and the information I think I would need to effectively improve my Capacity Management.

Dennis, I am sure you are aware that Raritan is a major provider of intelligent back power distribution units. Four years ago we introduced metering energy consumed on an outlet level and now have customers that are metering with energy grade billable information, and understanding the actual energy consumed by their IT devices. That information is being used to bring it back to their planning and these organizations look at actual consumed energy to make real decisions based upon that. I think the key is the presentation of information that allows people to come together and move forward.

Dennis: That is certainly good sound advice and makes a lot of sense. And so Robert what would you say to again this sort of fictitious scenario, albeit, but if you have one outstanding piece of advice to give?

Robert: I would say there are actually many aspects to Enterprise Capacity Management. As James mentioned, the aspect of managing power is one of those and it is a high cost item but actually there are many others. It is when we start tying together all these facets of information that we start to provide the insight that allows executives to really start to provide more efficient services, consumer facing services and deliver the cost efficiency that everybody is demanding.

In order to be successful I would recommend we don't take a siloed or "head in the sand" approach to capacity. Instead I would argue our first approach should always be to remember what we are dealing with here is a cost versus performance question. It is a question of identifying risk, which is of either over-provisioning in a virtual landscape or the risk of service degradation, and the point where we have got a hotspot or a bottleneck appearing in the system.

The old methods of Capacity Management are starting to really struggle with these questions in a new heavily virtualized, cloud focused environment. What we need here is automation that provides coverage for an environment that is constantly changing. If we are able to build on that automation in an incremental way that is how we can truly achieve this sort of idea of the cost efficient service to business. **ETM**