

BMC Capacity Optimization Transforms a Major Retailer's Readiness

Executive Introduction

EMA has been actively tracking capacity planning capabilities for more than a decade, and watched a slow but consistent increase in the uptake of capacity planning analytics, especially within the last three years. However, most capabilities today remain narrowly focused on systems and virtualization planning, and generally lack the broader, cross-domain insights that are critical when mapping capacity to business service delivery. These more broadly capable solutions must also support dynamic (near real-time) capacity analytics coupled with integrated automation to optimize the full elasticity of cloud and virtualized environments.

BMC's Capacity Optimization solution is happily an industry exception in its rich cross-domain breadth and in-depth integration with application and business service performance management—from both a technology and financial perspective.

This ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) report introduces BMC Capacity Optimization (BCO) functionality in industry context and then targets a major BCO deployment at a large, North American-based retail organization.

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Market Trends: Capacity Optimization in the Age of Cloud and Agile

A very brief look at current trends, leveraging the Q2 2013 EMA research, [Ecosystem Cloud: Managing and Optimizing IT Services Across the Full Cloud Mosaic](#), underscores the requirement for a truly global and adaptable capability for optimizing capacity across domains with full insight into business service outcomes and performance. Here are just a few highlights:

- After *service availability* the *cost of internal delivery* and *service/infrastructure utilization* are the top two metrics preferred for optimizing business service delivery over cloud.
- However this requires a truly cross-domain view—across all IT silos, as well as across virtualized and non-virtualized environments. For instance, 89% viewed cloud service delivery as meaningfully dependent on non-cloud or non-virtualized infrastructure, and many prioritized broader infrastructure needs over systems-specific capacity planning in order to support the move to cloud.
- Moreover, 96% thought predictive analytics was important or critical in the move to cloud.
- But only 28% had some level of capacity planning analytics deployed—and from dialogs, most of these are focused exclusively on virtualizing system environments.

BMC Capacity Optimization (BCO)

BMC's Capacity Optimization solutions span systems, storage, networks, and mainframe environments, with additional insights into facilities limitations—all natively correlated with an in-depth awareness of application and business service performance. This includes supporting capacity based on service level commitments and financial impact. BCO is also designed with automation in mind, for enhanced dynamic currency and ease of administration—as will be seen in the interview below. And finally it is well adapted to support integrated process and best practice requirements with full neutrality across pre-existing hardware, software and application investments.

An Enterprise Capacity Planning Innovator Talks about BCO at a Large Retail Enterprise Headquartered in North America

Could you say a little about your role and background?

My interest in capacity management and optimization dates back to the late 1980s. Over the years I've established a strong background in capacity and performance management, benchmarking and tuning—beginning at first with mainframes. Eventually I had the opportunity to expand my efforts on the distributed side, with a focus on systems, server and applications benchmarking.

I assumed my current position about three-and-a-half years ago with initial focus on mainframe and now focus across the enterprise that includes distributed systems. The company wanted to use best-of-breed software and actually asked BMC for recommendations, and my name came up. For the first two years I worked on both technology and developing a mature capacity management process—which was in disarray, so we could stabilize capacity planning techniques.

Can you describe your environment in a little more detail?

The retail enterprise where I now work had been doing largely ad hoc reporting and data gathering across both the distributed and the mainframe environments. They depended on IBM and IBM business partners to do their capacity planning and modeling for their mainframes. Back then, IBM and IBM Business partner focused on 95th percentile CPU utilization to identify the period to model. So I helped my company by utilizing BMC BPA Predictive Analytic Models that was critical to fully understand Capacity Planning implications from both CPU Utilization and Response Time perspective for production priority workloads.

I developed a new method for assessing batch-processing service levels. A combination of exploiting BMC BPA Analyze/Predict Analytic Modeling capabilities along with other new methods developed in-house has helped delay mainframe CPU upgrades beyond the traditional IBM Capacity Planning approach. In addition, I developed Capacity Planning trending, regression analysis and capacity planning projection methods.

The key point here is that mainframes are designed to operation at 100% CPU utilization, and as long as your critical priority workloads and applications are meeting service levels then that means discretionary low priority workloads are soaking up spare CPU resources.

We are exploiting BCO capabilities on the Distributed Systems Platforms with applications benchmarking studies and exploiting out-of-the-box automated reporting capabilities that previously required intense manual effort by our platform teams. The end result is—now the majority of our time is spent with analyzing performance data in detail and solving problems, versus previously so much time was spent with processing data and generating reports.

Can you describe where you are in your BMC Capacity Optimization (BCO) deployment today?

We began on the mainframe and now I'm focusing on the distributed environment. The implementation overall is still evolving and getting richer in function and benefits as time goes by. My job is to exploit the capacity planning tools, develop methods and processes, and share that with the platform owners to engage their teams to better understand capacity objectives relevant to them. Having a unified view of the mainframe and distributed environments—virtual and physical—will also help us to make smarter decisions about where and how we can optimize current business applications and plan future application releases.

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What are some of your successes on the distributed front to date?

We've had a number of successes with the distributed environment already. For example we had an issue of scalability—hundreds and thousands of servers were in use, but all capacity insights and reports were used in reactive mode. BCO now gives us an automated by-exception method for capturing the data, processing the data and reporting resources that are underutilized or nearing saturation. So now, with very limited personnel resources, we are becoming far more effective in proactively optimizing our distributed infrastructure.

We've also had successes working with our applications development and performance benchmarking Q/A teams. We had some application rollouts where everyone erroneously assumed the application software was multi-threaded—so a lot of servers in development were sized based on misinformation. I remember one instance in particular where eleven CPU processors were each running at 1% but one was running at 98% for an application that had been in deployment for more than one year. What's worse, it was a business critical application.

Not surprisingly, there has also been a lot of anxiety surrounding the move from physical to virtual environments. Performance benchmarking isn't always apples to apples, and the configurations are not always the same. BCO is helping dramatically here as well. In the virtualized area, you may want to distribute your I/O over different hdisks, and most people don't have a lot of experience tuning I/O outside of a single, physical server environment. BCO is providing valuable insights into where and how to optimize across both physical and virtual environments via very systematic, automated, large-scale data processing for its dashboard and reports.

Another area that we are exploiting within BCO is the BMC BPA Analyzer/Predict capabilities for application transaction profiling throughout the applications development lifecycle from “Proof of Concept (PoC),” benchmarking, testing and rolling out into production—where we can apply Predictive Analytic Modeling “What-If” capacity planning studies. In addition we utilize BCO to analyze historical performance patterns and trends, and extrapolate for future capacity planning. If necessary, we utilize BCO to drill down to the detailed “Process Details” level to characterize the workload or application and understand “response time” breakdown, and carry out “What-If” Analytic Modeling studies whenever required.

What are your plans for capacity management going forward?

Well, for one, we'll be supporting more than mainframe, distributed and virtualized servers. I have been engaged to carry out capacity planning on company's largest ambitious applications development initiatives. We'll be considering Oracle, SQL and EMC storage during the course of 2014, as well as adding support for our networking infrastructure. I'm also looking forward to improving our network capacity planning. Finally, the next step will be implementing the financial component so we can map infrastructure optimization to business transaction results so we can map what we do to delivered business value.

What are some of the other salient points that you like most about BMC's Capacity Optimization solution?

The level of automation across domains—beyond just servers—is clearly a huge value to us. Another key benefit is BCO's efficiency in collecting data from nearly any data source. In addition, BCO performance itself in reporting back thousands of VMs and “out-of-the-box” views is surprisingly fast.

Efficiency of report generation is another. Our platform owners were struggling to report on capacity using a manual process before BCO. Now we can automatically click to generate actionable views showing capacity and performance for the last sixty days, or thirty days, across multiple VM or Windows environments and then drill down at will. People are saying, “You can't imagine the time this has saved

us!” Whether it’s IBM System Z or hundreds and thousands of VMs, we can deliver insights out-of-the-box on CPU, memory, file systems falling out, etc. This really helps unite a lot of different stakeholders working together so they can communicate and collaborate more effectively. You can also skip a lot of the interview process about what applications will require, and work instead from hard data—saving time, circumventing misinformation, and ultimately making more informed business decisions.

To sum up, BMC Capacity Optimization is a wonderfully powerful tool. On the one hand, I can derive quick benefits out of the box. On the other hand, as I continue to mature my thinking, I can also continue to gain added benefits and insights. As I mentioned, BCO even has a financial component, so I can correlate business transactions with capacity utilization and projected requirements, automating the linkage between infrastructure and business performance and value.

EMA Perspective

After BMC acquired Neptunium for cross-domain capacity analytics in 2010, it has managed one of the industry’s more insightful acquisitions for optimal value. To date, no vendor has matched BMC fully in both the breadth and depth of its capacity planning and optimization capabilities—from a true business service delivery perspective.

It was in large part for these reasons that in the [EMA Radar for Advanced Performance Analytics \(APA\) Use Cases: Q4 2012](#), BMC took the lead for capacity optimization—“*BMC Capacity Optimization and change impact leverages a broad array of analytics including ifthen analysis, intelligent placement, correlation, anomaly detection and predictive, self-learning capabilities. BMC is at the very top of our 22-vendor list for cross-domain support and integrated automation for change impact and capacity planning.*”

Dialogs with deployments like the one above continue to reinforce BMC’s advanced position—as the market must continue to evolve to support far more than a niche or siloed interest in capacity planning solutions so that IT organizations can optimize for service value, and not just device or system performance.

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About EMA

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