Deliver Better Results for Mainframe Cost Reduction Initiatives

Identify projects with the most potential for optimal ROI
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Executive Summary

Increases in mainframe expenses have put IT under pressure to cut budgets. But mainframe cost reduction projects require funding and create risk because of potentially disruptive changes that may result. **Worst of all, many projects are not delivering expected results.** Modeling technology can help enterprises:

- Understand why past cost reduction projects failed to deliver expected savings
- Identify projects that have the best chance of success
- Learn how to save significantly on monthly license charge (MLC) software costs
- Avoid unnecessary changes to applications

Analyzer can help businesses accurately attack the major source of mainframe expenses—MLC software costs. By working with BMC and leveraging its mainframe cost optimization solutions, businesses can avoid unnecessary expenses and risk, and instead focus on projects offering the greatest opportunity to deliver the highest ROI.
THE MANDATE TO MANAGE MLC COSTS

IBM monthly license charge (MLC) costs, which are already greater than 30 percent of a typical company’s overall mainframe budget (Figure 1), are increasing annually by 5 percent to 11 percent. These yearly increases are imposed without any direct correlation to business revenue or usage. In addition, an increase in MLC costs can be triggered by customer-facing web applications that cause unplanned utilization peaks on the mainframe without adequate associated business revenue. IT has two options: manage MLC costs effectively or find ways to fund these increases.

Complicating matters further, business units (BUs) save budget as a result of resource consumption reductions, even though they may have no impact on IT expenses or corporate profitability. IBM charges for mainframe MLC software based on a sub-capacity pricing model, but this model is unlike the method that IT typically uses to charge BUs and other internal entities for services usage. Many flavors of sub-capacity pricing exist, but most are based on a peak four-hour rolling average (4HRA) of resource usage measured in millions of service units (MSUs) of machine capacity. In contrast, IT funding is typically based on the total amount of resources consumed, as measured in CPU seconds.

The implication is that initiative funding may be impacted if IT continues to use methodologies that were created prior to the introduction of sub-capacity pricing by software vendors. Resource reduction projects that do not help IT with expenses are counterproductive to profitability. IT should adapt its chargeback and tuning strategies so they are tied to the impact on software vendor sub-capacity license charges. Changing the chargeback mechanism to provide incentives to reduce the 4HRA can provide BUs with greater cost reduction in the long run. If this is not possible, IT should identify and assist BUs with resource reduction projects that impact peak 4HRA MSUs.

TUNING FOR PROFITABILITY

When tuning for profitability, organizations should first pinpoint the entity they are trying to improve: the business unit, the IT department, or the corporation. Typically, they focus on the BU, occasionally on the corporation, but rarely on IT. But these three are not mutually exclusive; all can benefit if the tuning effort targets the right area.

CONCERNS ABOUT CHARGEBACK SYSTEMS

Organizations have a tendency to aggravate the already sharp rise in mainframe costs by spending time and money tuning areas that do not deliver value. For example, chargeback systems incent BUs to tune and provide immediate relief once implemented. But in the process, businesses might inadvertently cut IT department funding by lowering resource consumption that is tied to a chargeback mechanism. If tuning does not also cut the IT department’s hardware or software expenditures, its discretionary budget will be affected. A clear understanding of what drives real costs is needed to avoid quick fixes that help one or more business units with internal cost center funding yet negatively affect IT.

Why are mainframe budgets in this predicament? The rules governing software license charges and the proportion of IT expenses devoted to these charges have both changed, and most IT departments have done little to adapt their chargeback systems. Recently, budgets have been impacted by a change to IBM MLC that specifies MLC cost increases can no longer be
deferred by waiting to upgrade software versions. Most chargeback systems are based on a fixed cost per CPU second. Some businesses have more-advanced mechanisms with multiple rates designed to encourage and discourage usage at certain times of day. Typically, they attempt to reduce peak usage during online windows to delay hardware upgrades. These might not line up with the timeframe to reduce IBM MLC and other vendors’ peak MSU charges.

**Risks of 4HRA MSU agreements**

Another factor affecting mainframe costs is signing an agreement with the software vendor specifying that even if the 4HRA MSUs are lowered, the company still must pay a guaranteed minimum. Under these arrangements, all future IT cost reduction projects will be in vain, even though BU costs might drop. Analysts and other industry experts have warned against signing such an agreement before doing everything possible to lower current 4HRA MSUs. David G. Wilson of SZS Consulting suggests, “If customers expect to reduce the MLC over time, they need a clear understanding of how this is going to be achieved before discussions with IBM take place. They also need to implement entitled reductions before composite contract negotiations start.”

**Two tuning opportunities**

The validity of the old concept that “unused CPU seconds are lost forever, so you might as well use them” disappeared after IBM introduced sub-capacity pricing more than a decade ago. But not all companies have adapted to using or charging back based on actual costs. If workload resource consumption is not driving hardware upgrades or the 4HRA of MSUs, reducing it does not save money.

Below are two tuning opportunities. Batch jobs A and B each run for two hours and consume 20 minutes of CPU. If the resource consumption of either job is cut in half, the BU is charged for 50 percent fewer CPU seconds and its payments to IT are reduced.

### Opportunity 1
- Batch Job A: if this tuning has no impact on peak 4HRA, IBM MLC costs are not reduced. Therefore, the IT budget shrinks without a corresponding decrease in expenditures. This imbalance creates an unplanned budget shortfall. To compensate, IT needs to increases the cost per unit of CPU usage that it charges the BUs. In response, the BUs repeats the vicious cycle of investing in efforts to reduce expenses instead of funding initiatives that grow corporate revenue.

### Opportunity 2
- Batch Job B: If, however, the business unit tunes the job that impacts peak 4HRA (10/05/15 at 1pm), the BU bill is lowered and IBM MLC costs are reduced, increasing IT funding. Why is it positive instead of just neutral? The IT chargeback amount should be the average cost per CPU second. Therefore, if a BU cuts an expensive CPU second but only gives back an average-priced CPU second, an IT operating budget surplus is created. This example illustrates the importance of tuning the factors that impact peak 4HRA.

GAIN INSIGHT WITH COST ANALYZER

Many tools enable businesses to see when a peak 4HRA for a central processing complex (CPC) occurs. This is not enough information to lower peak usage with confidence. A few 4HRA analysis tools provide limited drill-down capability to understand the workload drivers. Cost Analyzer for zEnterprise enables businesses to model proposed changes to determine whether they will have a positive impact, and predict the amount of impact to IBM MLC costs, graphically delineated by product.

Cost Analyzer for zEnterprise avoids the risk of lowering a component of current peak, only to find that component may not impact a new peak. Without a powerful modeling solution, the exercise resembles a game of “whack-a-mole”: fix one peak and a new one emerges. The change might have saved 10 MSUs in the old peak, but the new peak is created from something else, resulting in only a drop of two MSUs. Was the project worth funding for two MSUs? Probably not.

Cost Analyzer modeling finds the next peak without requiring an investment of time and money to make changes that may not be worthwhile. It helps the organization understand the source of peaks and to model savings that will result from changing components of these peaks. With Cost Analyzer, businesses can determine which projects offer the highest returns.

Research indicates that taking a passive approach to managing MLC costs companies 15 percent more, on average.

TUNING TOOLS AND METHODOLOGIES

Capacity planners, database administrators (DBAs), and tuners often run a report of the highest consumers of CPU second, and then search for ways to reduce CPU usage. This approach is often complex and time-consuming, and introduces application changes with their associated risks. Projects are often justified by converting CPU seconds saved into MSUs, generating an average cost per MSU for project savings. Or, if a chargeback system exists, BUs justify spending $5,000 on a change that provides $5,000 in chargeback relief in three to six months. This math does not yield expected results because, as illustrated earlier, not all CPU seconds or all MSUs are equally expensive.

What should IT do differently? IT should identify workloads running in the 4HRA billing peak and determine if they can be reduced, slowed, or scheduled at another time.

Cost Analyzer helps businesses effectively leverage tuning products from any vendor. For example, BMC recently partnered with Compuware to enhance the value delivered by its popular tuning product, Compuware Strobe™. They have released updates that allow IT to launch deep-dive data collection of drivers to 4HRA.
RISK AVOIDANCE

Cost Analyzer can help businesses avoid or minimize many different technical and business risks. Instead of making application changes that yield no benefit, Cost Analyzer can help IT lower costs without requiring application changes. It can also forestall projects that yield zero expense reductions.

Tuning efforts may inadvertently have the opposite effect. For example, eliminating a bottleneck in the critical path of a batch stream could cause significantly more work to be scheduled sooner, which in turn might contribute to the 4HRA, unlike the original workload. If the workload is running much faster, IT can use capping or other scheduling methods to slow processing. However, IT needs the ability to view the impact, which is easier to see with trend data for peaks and workloads that contribute to them. Again, Cost Analyzer can help. The solution can even model the delays from capping the workload, enabling IT to lower costs yet complete the work on time.

IT needs to be aware of any technology that creates parallelism, such as MainView Batch Optimizer. To reduce elapsed time, these solutions use more CPU seconds over a shorter duration, which can create higher 4HRA MSU peaks unless it’s capped. MainView Batch Optimizer can allow capping and SLAs to be met, but IT needs to be careful not to overachieve on SLAs for the batches at the expense of higher 4HRA peaks. This is another example of the importance of modeling changes before implementing them. Cost Analyzer enables IT to understand positive or negative impact in advance, which improves decision making.

SUMMARY

To eliminate budget surprises and conserve allocations for new initiatives, IT should actively manage IBM MLC costs and other MSU-based software license charges. Postponing increases is no longer a viable option. Fixed-price contracts offering affordability are no longer available, so IT must control variable costs. Cost Analyzer is one component in a larger suite of solutions that helps customers to lower IBM MLC costs.

FOR MORE INFORMATION

To learn more about managing IBM MLC costs, please visit bmc.com/mlc

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