IDC
Analyze the Future

WHITE PAPER

New Options for Acquiring and Optimizing Blade Servers

Sponsored by: HP

Joseph C. Pucciarelli Jed Scaramella

October 2010

IDC OPINION

Expenditures on IT equipment have steadily grown in the 50 years since general-purpose, commercial computers have emerged — from $2 billion in the 1950s to more than $1.7 trillion today. The latest IDC research indicates that more than 40% of *all spending for commercial equipment* will be for computers and software in highly industrialized economies. For many organizations in the securities, banking, healthcare, manufacturing, and government sectors, IT spending is one of the largest categories of capital spending; IT has been so interleaved into business processes that it is sometimes indistinguishable from "the product." Increasingly, many of these organizations are seeking alternatives to investing significant percentages of their available capital in their IT operations; these organizations are seeking to acquire their IT capacity using a flexible payment model that allows them to more closely couple IT capacity with varying levels of business activity.

HP's newly announced Utility Ready Computing (URC) service is an integrated IT compute capacity acquisition program that includes a portfolio of deployment, support, availability, and management services. Specifically, the new program:

- Is funded via monthly service fees versus requiring large, up-front investments of business capital
- Reduces the time it takes IT staff to bring new compute capacity online
- Provides critical support for IT capacity planners and operations management (beyond capacity and support services)

SITUATION OVERVIEW

IDC estimates that spending for IT equipment, software, and services — *excluding the cost of internal staff* — will exceed $1.8 trillion in 2014, with almost $800 billion spent just for IT equipment. Overall, IT equipment spending is expected to continue to grow more than 4.7% annually. Factors driving this sustained level of IT spending include IT infrastructure capacity growth, enablement of new and improved products, and IT infrastructure updates and operating costs. IT capital investments continue to account for about 40% of all commercial capital investments in highly industrialized economies.

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 www.idc.com

The Economy Shifts, Businesses Adjust

As the world's economy continues to recover from the most recent economic slowdown, companies and organizations continue to evolve and adapt their business strategies and practices. For many, revenues and budgets have been constrained, access to capital has been made more expensive, and new challenges or requirements have arisen. For IT and business leaders, the road forward is clear: continue to refine existing technology operations to reduce operating expenses, and use the savings to fund new capabilities, expanded capacity requirements, and additional IT productivity investments. For many IT organizations, these changes have resulted in both subtle and not-so-subtle changes in IT technology management practices.

For business and IT leaders, the challenge is clear: improve asset utilization and minimize overprovisioned environments.

Capital Acquisition Practices

The combination of volatile (and more expensive) capital markets, economic uncertainty, and the need to fund broader business innovation initiatives has challenged business and IT leaders to stretch existing IT equipment resources to every extent possible. As a result, many IT organizations have adopted a "just-in-time" IT provisioning strategy for acquiring capacity, software upgrades, or new systems management tools only when the requirement is so overwhelmingly clear that the return on investment (ROI) is fewer than 12 months. This challenge to limit expenditures such that paybacks are often achieved in the same budget year has forced many IT leaders into an incremental approach to capacity upgrades or modernization projects — "just-in-time" IT — an approach that reflects very high financial returns but can create other operational or staff loading challenges that may not be fully understood with a simple ROI calculation.

IT Staffing Models

Many IT organizations that are striving to improve efficiency/utilization and adopting the "just-in-time" IT model (that is, small, incremental capacity upgrades versus larger "occasional" investments) have found an unanticipated consequence: The just-in-time model requires much more work by an already strained IT staff. This occurs because the total effort to configure and install 20 servers is not much more than the effort to configure and install 5 servers — there are tremendous efficiencies of scale. So a plan that requires IT staff to configure and install 5 servers each calendar quarter versus installing 20 devices at the beginning of the year adds to the IT resource crunch.

Unintended Consequences

From a business perspective, the goal of maximizing resource utilization, especially in times of economic recovery and capital uncertainty, is a thoroughly rational leadership objective. However, occasionally, the full scope of consequences may not be fully understood or considered. These consequences include:

- **More limited capability to absorb unanticipated increases in demand.** Highly utilized IT infrastructures may not have the capacity to readily accommodate predictable or unpredictable surges in demand.
- **Much higher "install and configure" workload for IT staff.** Minimizing overprovisioning of IT resources — while a laudable goal — often does not consider that smaller, more frequent additions to server or storage capacity often dramatically increase the workload of those already fully utilized IT staff resources responsible for acquisition, implementation, and infrastructure optimization.
- **Higher risk.** The more (reconfiguration) changes made to core underlying IT infrastructure, the higher the likelihood of unplanned IT outages. This is not a criticism of IT staff; it is recognition that IT infrastructures, especially those that are operating at very high levels of utilization, are complex systems that often lack the redundancy to absorb minor technical glitches.

Operating a Highly Optimized IT infrastructure

The business challenges presented to IT leaders are consistent: operate a highly secure, reliable IT infrastructure with improving levels of efficiency; continue to enable changing business requirements; and match IT cost to business initiatives through improved transparency and sustainability. Accomplishing these ambitious objectives requires more than just a strong desire to improve effectiveness; it requires a comprehensive set of tools to control, monitor, and optimize the IT infrastructure.

The Security and Control of On-Premise Resources

In addition to these new imperatives brought into sharper focus by the economy, business leaders continue to demand unassailable security, rapid response to the need to change or reconfigure the IT infrastructure, and control of the organization's data assets. Most IT professionals believe that taken together, these requirements mandate, for the foreseeable future, an on-premise IT computing platform. In fact, a 2009 survey of 200 IT decision makers from Global 2000 companies conducted by HP found that, for 72% of organizations, the use of multitenant IT platforms such as cloud computing was not an option they were considering at that time. The top three factors cited by almost two-thirds of the survey respondents were security, company policy/regulatory requirements, and business models.

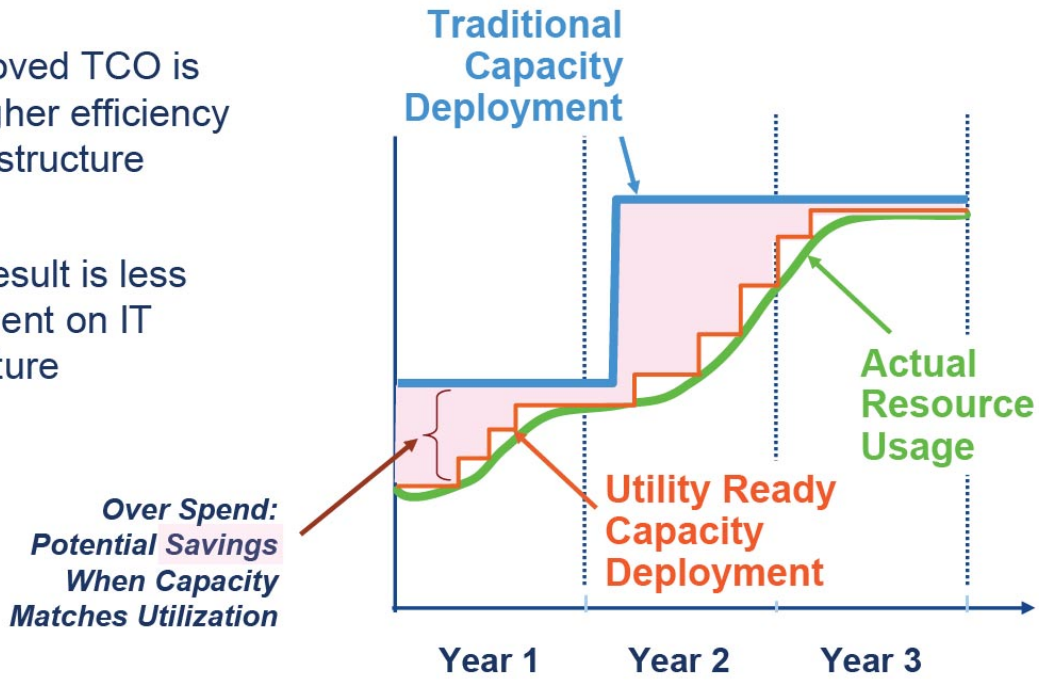
To meet these highly demanding requirements and address the real constraints that business and IT leaders operate within, HP has created a service for IT organizations, which we discuss in the next section.

HP UTILITY READY COMPUTING SERVICE

The HP Utility Ready Computing (HP-URC) service is a multiyear service program designed to efficiently provision IT organizations with blade servers and storage on a "just-in-time" basis; provide deploy and support services; facilitate a quarterly blade server capacity review; and, optionally, augment in-house IT operational staff by providing daily operations monitoring. The goal of the program is straightforward: help business and IT leaders reduce total cost by more closely matching provisioned blade server resources with workload, as depicted in Figure 1.

FIGURE 1

The IT Infrastructure Capacity Utilization Dilemma



Source: HP and IDC, 2010

HP-URC: Included Services

Although matching capacity to utilization is a straightforward and well-understood optimization practice, the difficulty is factoring in the time, talent, and resources necessary to achieve it. To this end, the HP-URC service offering begins with a capacity- and service-level plan developed by both HP and the client organization. In this initial planning process, the client organization and HP identify and calibrate business cycles, demand drivers, and other underlying root cause factors that directly or tangentially drive demand and IT capacity requirements. This initial step results in a customer-specific plan for the number, type, and configuration of server capacity as a baseline. Building on this foundation, HP-URC includes a suite of four services to augment existing IT staff resources.

Install and Deploy

The HP-URC service team delivers, installs, and configures the equipment according to the terms that the customer and HP have mutually defined in the initial planning process described previously. Spare equipment is likewise configured but left powered down.

Equipment and Software Support

All equipment within the cabinet enclosures is covered 24 x 7 with 4-hour hardware response time. All HP-delivered software has 24 x 7 coverage with 2-hour response time.

Infrastructure Availability Services

Four times annually, HP personnel conduct an onsite meeting to review operational performance and forecast future capacity requirements. Twice annually, HP conducts patch analysis and management. A full system health check is performed annually.

Utility Management Services

As part of the launch protocol, HP teams with the IT operations staff to prepare an initializing assessment, a migration plan, and a capacity forecast. After the launch, each month the designated HP Project Manager provides a usage and billing summary based on actual consumption.

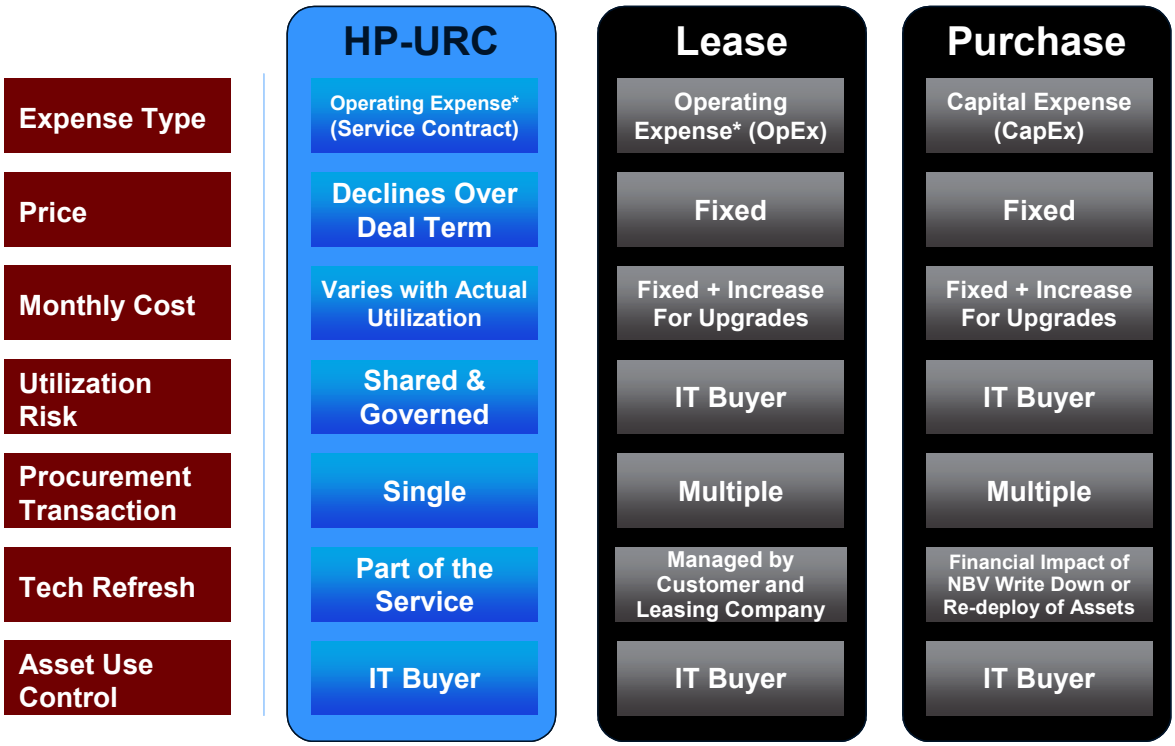
AN EVALUATION FRAMEWORK

The expenditure of an organization's limited resources is generally a team effort. Business leaders, procurement officers, financial executives, and IT professionals are often part of the multidepartmental team assigned to evaluate and optimize every significant acquisition.

To this end, well-established and fully understood acquisition models such as purchasing or leasing equipment have equally mature internal review and vetting processes. Acquisition options that enable organizations to acquire IT capacity and technical support via a multiyear services contract are a newer, less well-understood methodology that requires a thorough vetting and analysis by the affected internal constituencies. As detailed in Figure 2, a summary of key criteria is presented to facilitate acquisition strategy optimization.

FIGURE 2

Acquisition Model Comparison



Source: HP, 2010

A Critical Difference

While Figure 2 highlights the financial differences, it does not highlight a subtle but potentially critical difference: the inclusion of various services as part of this program. In other words, when an IT organization considers the traditional purchase or lease evaluation of blade server capacity and compares it with HP-URC, IDC believes that its evaluation framework must assign and include the values of the externally acquired (or internally supplied) *Install and Deploy*, *Equipment and Software Support*, *Infrastructure Availability Services*, and *Utility Management Services*. Failure to fully value the IT services acquired, or those supplied by internal staff, will distort the basis of comparison and lead to potentially incorrect conclusions. The failure to value the services performed by "internal staff" is one of the most consistent financial comparison flaws IDC documents when reviewing acquisition proposals for clients.

FUTURE OUTLOOK

IDC believes the drive to shift IT resource acquisition from periodic infusions of large amounts of capital to an ongoing services funding model is being driven by economic, technical, and business management forces:

- In the short term, the current worldwide economic outlook is severely challenging many organizations. Organizations in mature economies, which typically exhibit moderate growth patterns, are often seeking to conserve capital resources to allow them to fund business innovation in the face of economic uncertainty. Whether it is the need to accelerate product innovation, evolve the company's supply chain management practices, or improve business analytics, the list of critical business projects requiring IT support and enablement is central to achieving the overall organizational mission.

  For organizations based in more rapidly growing economies, the challenges are different but not less critical. In these organizations, the requirement is to expand and invest in business infrastructure and capacity. Markets are growing and the requirement is to "fill the available market niches" before their competitors. This translates into a similar IT challenge: stretch existing resources and use any/all available funds to enable business and capacity expansion.

  While the specific challenges may differ for IT organizations, the operating strategies are quite similar: leverage higher utilization as a means to fund other IT investments to better enable the business to evolve and better meet customer requirements. IT leaders are increasingly required to translate IT funding requirements into predictable monthly, quarterly, and annual expenses, closely coupled with business initiatives and product services.

- In the longer term, as IT organizations continue to take full advantage of maturing technologies, operating models, and business practices, the march to a "services-oriented" approach to providing computing resources will continue to accelerate. While most of us are familiar with the concept of a "service-oriented architecture" (SOA), which is a set of design principles used during the phases of software development and integration, the concept of a broader, IT services orientation is less familiar. The best way to think about this evolving trend, services-oriented IT, is to consider this example. Instead of measuring IT activity in terms of network bandwidth or server capacity, consider the metric of the number of email accounts (a service) versus resources such as server cycles or storage capacity. Increasingly, as server and storage virtualization are fully adopted for business applications, the coupling between specific business applications and certain IT resources, such as a particular server, will fade, requiring IT leaders to evolve their funding practices.

  The trend to fund IT costs based on IT's delivery of a portfolio of services, many of which are increasingly embedded into business processes, will accelerate IT's objective of acquiring its own resources via a services-based acquisition model.

CHALLENGES/OPPORTUNITIES

HP's new Utility Ready Computing service presents business and IT leaders who are striving to improve IT resource utilization with constrained budgets with powerful new options for both acquiring IT capacity and managing their blade server infrastructure via a services model. The new service provides an IT organization capacity that can be customized to meet unique requirements, is on premise and under its direct control; and is based on a comprehensive capacity and service planning process to ensure adequate capacity is in place when it is needed.

IDC believes that acquiring capacity and funding it with a monthly operating expense instead of periodic purchases of large blocks of capacity will be an effective and efficient acquisition model with broad appeal to a range of organizations. For many years, business and IT leaders have used leasing and financing options to translate their major acquisitions into a monthly operating expense. And while this method has been used for many years, IDC's market research shows that less than 20% of x86 blade servers are leased, indicating IT buyers are open to other acquisition options.

The HP-URC program takes a different approach compared with other acquisition options available to many IT buyers. In addition to providing capacity on a "just-in-time" basis, the program includes a suite of services that, beyond supporting the equipment, augment IT operational, planning, and management practices. IDC believes that fully utilizing these "management" services presents the most opportunity — and possibly the largest challenge — for IT buyers.

The included services fall into four general categories and are integral components of the HP-URC offering:

1. Install and Deploy
2. Equipment and Software Support
3. Infrastructure Availability Services
4. Utility Management Services

The first two categories of services listed above are straightforward and well-understood by most IT organizations because they have used similar services to operate their IT infrastructure for many years. The remaining services — Infrastructure Availability and Utility Management — present a different challenge. Both of these services are designed to help IT operations and planning teams systematically measure, monitor, and forecast their IT requirements. IDC has observed that these tasks, while central to effective IT leadership, can be overwhelmed by the daily crush. All too often, IT professionals who are charged with job responsibilities that include supporting a daily flow of activities as well as periodic "project" responsibilities find it difficult to balance the competing demands. As the daily crush is more immediate, project responsibilities slide.

CONCLUSION

For the many business and IT leaders striving to improve operational efficiency and effectiveness, the IT infrastructure capacity utilization dilemma has been a perplexing problem to resolve. The need to both manage capacity increases and balance constrained technical resources while simultaneously constraining capital funding is proving exceedingly difficult to achieve.

For many organizations, HP's new Utility Ready Computing service offers a unique acquisition model, a new option, in providing a means to ensure compute capacity to absorb unanticipated increases in demand, readily accommodating both predictable and unpredictable surges in demand. Also, because the service leverages HP support for capacity increases, it promises a lower "install and configure" workload for IT staff, avoiding the frequent additions to server or storage capacity that dramatically increase the workload of those already fully utilized internal IT staff resources responsible for acquisition, implementation, and infrastructure optimization. Finally, it can deliver more assured uptime and performance. Because this approach standardizes the server infrastructure, ensures revision-level and patching compliance, and limits nonstandard "emergency" upgrades, it reduces the likelihood of unplanned IT outages.

Because of these factors, IDC believes that the HP-URC offering will enable business and IT leaders to maximize server investment value and at the same time minimize implementation challenges. As a unique acquisition model, HP-URC can improve an IT organization's efficiency and reduce total costs by more closely matching resources with workload demands.