ROBERT FRANCES GROUP
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Fostering Best Financial Strategies and Practices for Enterprise IT

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Table of Contents

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Executive Summary

RFG believes CFOs and IT executives want IT to provide the best IT services at the least cost but to do so they will need to do more than scrutinize and push back on IT budgets. Since RFG finds CFOs and IT executives are frequently not on the same page with their financial visions, strategies and plans, one can conclude most IT executives are not pursuing financial best practices that will help enterprises achieve a competitive advantage. Thus, it is necessary for CFOs to work with IT executives to construct a financial strategy and roadmap for IT to follow. From a strategic standpoint, RFG finds optimal financial solutions for enterprise IT are comprised of three basic philosophies: the lease-refresh-scale-up model is more advantageous than the buy-hold-scale-out model; scale-up enterprise systems and solutions are the better value proposition than scale-out commodity server solutions; and the private cloud computing model should be implemented wherever possible. The underlying financial roadmap must include the guidance, incentives and governance that lead IT executives to implement and uphold business processes that emphasize three primary elements: cash management; flexibility and innovation; and risk management. CFOs and IT executives that adhere to these models will deliver data center solutions optimized for a competitive advantage.

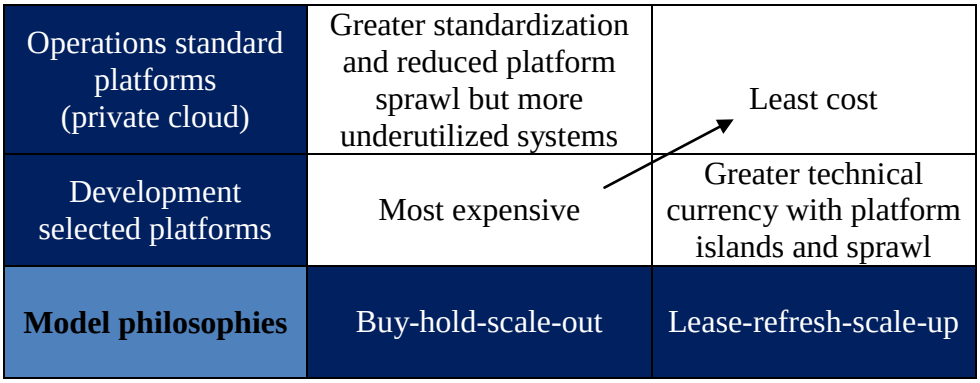
Business Imperatives:

- The decisions for acquisition of new application solutions and IT infrastructure are primarily done by business and/or IT executives without the financial in-depth analysis of the CFO organization. This approach rarely leads to the selection of the least cost solution. More often than not, a sub-optimized solution is chosen. RFG studies have found the lease-refresh-scale-up model for IT acquisition can deliver significant savings over a buy-hold-scale-out model, especially since IT equipment tends to become obsolete after three years. CFOs and IT executives need to understand the pros and cons of these purchasing models and develop the financial vision and methodologies so that business and IT executives can incorporate this thinking into their selection process.
- Most enterprise IT environments are in the midst of transforming their data centers to lower costs, improve quality of service (QoS) and drive agility. IT executives are automating, consolidating, orchestrating, standardizing, and virtualizing their data centers to take advantage of the latest technological advances. In pursuit of these transformational goals, IT executives will find investments in enterprise systems and solutions are a better value proposition than investing in commodity distributed systems and solutions. IT executives should ignore the technical, cultural and religious platform wars and instead provide the financial rationale and selection criteria that should be used for determining target infrastructure and platform architectures and solutions.
- The vast majority of enterprises are locked into a business model that has IT application development organizations selecting the underlying infrastructure and platforms, which has led to excess complexity and costs, islands of processing, and non-standardization. This is in stark contrast to the cloud computing model, especially private clouds in which IT operations provides flexible, self-service, standardized, and virtualized platforms upon which application development can select to deliver their applications to lines of business. Business and IT executives desirous of moving to a cloud computing model will have to overcome cultural resistance to change and thus should provide the communications, guidance, incentives and training to cultivate buy-in.

The Business Models

There are two basic philosophies for managing data center hardware and software acquisitions that are responsible for the data center sprawl that exists in most IT operations. The first option is between the hardware acquisition models of buy-hold-scale-out versus lease-refresh-scale-up while the second philosophic approach is between development dictating platforms or operations providing development with standard platform choices. (See Figure 1.)

Figure 1. IT models



Most IT enterprise operations acquire hardware using both models. High-end enterprise systems are usually leased while the lower-cost commodity server hardware is for the most part purchased. In most small- to mid-sized businesses (SMBs) the tendency is to purchase all hardware as well. While this may seem to make sense from a point product total cost of acquisition (TCA), it is not a best practice financially when the return on investment (ROI) and total cost of ownership (TCO) are examined holistically. In fact, RFG studies find enterprises can save up to 45 percent over a five-year period using the lease-refresh model.

Purchasing IT equipment and keeping it in operation in the data center for five years or more is a very expensive option, given the rate of change of technology. Purchased systems tend to be kept longer than planned due to business conditions and economic factors. While some financial analysts feel this is more economical, they are often only looking at the hardware costs and depreciation and are ignoring the operational factors such as floor space, operational complexity, power consumption, staff productivity, and system utilization. The operational factors end up costing far more than the refresh financing – up to 90 percent of the increase in expenditures – and reduce IT's ability to deliver IT services at a low cost.

Secondly, the majority of IT operations today utilize the traditional approach where development dictates the operational infrastructure platforms. Each new application is viewed independent of all others, which results in optimization for the application but sub-optimization of data center infrastructure, platforms, and services. It is this philosophy that has created the sprawl of server and storage farms and islands of computing. Furthermore, these systems, which today are almost always built on x86-architecture servers, are underutilized, lack standardization, provide lower levels of

availability, and present more operational security and risk exposures. On the other hand, cloud computing providers operate using the standards-based platforms to which development or users must conform. The latter methodology is slowly gaining attraction in IT shops globally but it still has a long way to go before private, public or hybrid clouds replace all existing data center environments. The shared-resource cloud model is far more cost effective than the time-honored development method and it also offers users a more flexible environment that can better serve a non-static business world.

It is also worth noting a mere four percent of CIOs identify IT as fully integrated. Furthermore, although a majority of IT organizations are broadly aligned to the business, just 21 percent describe IT as highly aligned.[1] One reason for this misalignment is the use of the buy-hold-scale-out and development selected platforms models as the primary IT business models. Thus, use of both the lease-refresh-scale-out and operations standard platforms models provide greater flexibility and better enable alignment with the business.

Lease-Refresh-Scale-up

When RFG analyzed the two acquisition models, 20 different financial advantages were identified for the lease-refresh-scale-up model over the buy-hold-scale-out model. (See Figure 3.) Most notably, RFG finds the lease-refresh model preserves cash that can be better used as a hedge against uncertain times, an unsteady economic environment, and rapid technology change. With bank lending constraints still in place, it is better to use corporate cash for revenue generating purposes than IT infrastructure expansions or upgrades. Moreover, leasing is a pay-for-usage model that is a better-structured, less expensive approach than purchasing when properly negotiated and executed. The model eliminates large, one-time, upfront payments, levels out payments over the lease period and disbursement increases only occur when more capacity is needed. In effect, the lease-refresh, pay-for-usage method is quite similar to the cloud computing pricing model.

Figure 3. Leasing-Refresh Advantages

- No down payment/ 100% financing
- Lower cost of capital
- Credit line or capital preservation
- Cash flow optimization
- Financial predictability
- Ability to finance software & services
- Fixed or flexible payments
- Eases budgetary restrictions
- Improved ROI
- Enhanced TCO
- Technical currency
- Pay for use
- Reduced license fees and taxes
- Reduced end-of-life worries
- Reduced operational complexity and expense
- No asset ownership
- Maximum liquidity
- Improved financial management
- Master lease capability benefits
- Cash for new business opportunities

Moreover, unbeknownst to CFOs and other non-IT executives (and even to a majority of IT executives) is the fact that the rapid change of technology obsoletes most IT equipment within 40 months. Because the rate of change is exponential, after three years most IT hardware can be replaced by new equipment

[1] Forrester Research Inc.'s Global Technology Strategy online survey, Q4 2011

that is an order of magnitude faster and denser and consumes a fraction of the energy. For example, 1000 servers could be replaced by 250 servers or less and the cost of financing the new equipment is less than the energy savings achieved by upgrading. The personnel and software savings are added bonuses. A similar story exists on the storage side, where in the course of 10 years the gains are more than 1000 fold. If one waits five years before replacing the hardware, the disparity is much worse and the cost of maintaining the ancient-but-owned equipment proves to be a wasted expense.

Furthermore, not only are there hardware advances, providers make improvements to software that enhance availability, automation, orchestration, and performance. Hence, by maintaining technology currency IT shops save money, have a lower run rate, and improve staff productivity. In fact, the economics of the lease-refresh-scale-up methodology explains why most banks and other financial institutions utilize this approach for acquisition of IT equipment.

Flexibility and Innovation

Recent studies find that business executives want greater flexibility in their IT solutions and would like to devote a greater portion of IT funding to new, innovative solutions that can drive revenues and/or increase customer loyalty or business partner/employee productivity. An average shop today still spends more than 70 percent of its IT budget on "keeping the lights on" (KTLO) while a top performing shop spends less than 50 percent on KTLO, about 35 percent on traditional business enhancements and 15 percent on ground-breaking innovative development. For CFOs and IT executives to be able to move the needle in this direction, IT executives on both the development and operations sides need to be incented to move more rapidly toward a cloud computing model. This is a major cultural change and therefore strong incentives are needed to get management and staff at all levels to push forward with such a transformation.

While the term "cloud computing" is bandied about, there are many interpretations of the term. Here "cloud computing" means the shared use of computing resources delivered as a service over a network. There are a variety of different types of cloud offerings but all have the following components in their service model: agility, rapid provisioning, on-demand self-service, device and location independence, low-cost pay-per-usage fee structure, multi-tenancy, reliability, scalability, security (at some level) and virtualization. In exchange for all that, users are asked to accept a level of standardization – and therein lies the rub. IT development organizations are used to architecting and designing application ecosystems from top to bottom. This creates a patchwork of computing islands and inflexible solutions. The cloud computing model turns this process on its head. Therefore, CFOs and IT executives need to incentivize IT operations to define and build a set of desirable platform options and IT development to conform to usage of these platforms as the basis upon which to develop their business solutions. This will reduce the cost and time of developing new applications and the cost of operations while making the ultimate solution more flexible.

Innovation is also enhanced by having a cloud computing service model available and accessible. By having IT adopt the cloud model, business executives should find that new services can be developed more quickly for less expense with fewer staff and services once thought impossible may be in reach within a reasonable time period. Furthermore, once the pilot is deployed, scaling up the service can be

done more rapidly. This agility is vital, especially in times of rapid business and economic change. Additionally, cloud computing enables companies to support periodic workload spikes without over-provisioning equipment. Thus, CFOs and IT executives should consider the cloud model as a low-cost, rapid speed-to-market approach for delivering differentiated innovative solutions. Combining the cloud operational model to the lease-refresh acquisition model enables CFOs and IT executives to foster data center optimization for a competitive advantage.

Risk Management

RFG finds that most companies have only done an adequate job of IT risk management and as a general practice are pursuing practices that fail to close the exposure gap. There are eight domains of risk management that IT must address:

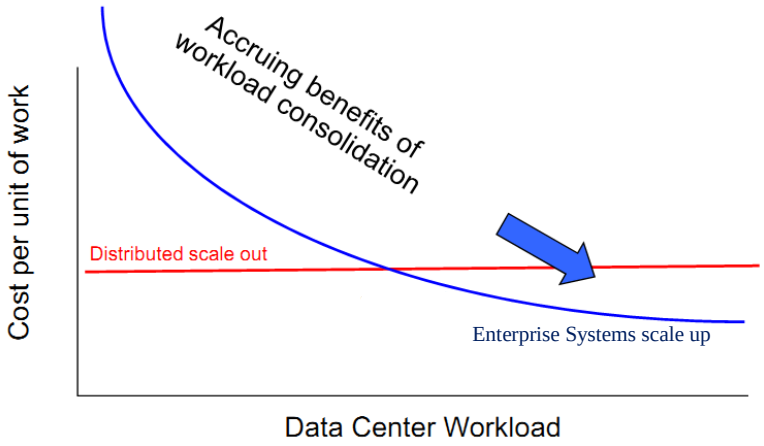
Risk Class	Concern
Asset management	Lost equipment, data theft, data integrity
Availability	Downtime, revenue loss, image, customer loyalty
Change management	Disruptions to service, costs, human errors
Data integrity	Reporting errors from data sync problems, customer satisfaction, penalties for erroneous filings
Disaster recovery/business continuity	Outages, lost revenue, financial ruin
Productivity	Underutilized human resources
Resiliency	Downtime, disruptions to service
Utilization management	Underutilized hardware resources

Risk management exposures across all eight domains can be best mitigated through the use of enterprise systems; nonetheless the general practice and trends have been to acquire commodity distributed systems. While there have been technical advances in the x86-architecture solutions, most enterprises have yet to achieve the level of gains needed to reach those obtained using enterprise systems. This is not to imply that distributed systems should be eliminated – there are workloads that belong on distributed servers; however, there are many critical processes and workloads that are best suited for enterprise systems. If one does a compare and contrast of the two platform types, the disparities become apparent. (See below).

Risk Class	Enterprise Systems	Distributed Systems
Asset management	Fewer assets, highly secure and highly utilized	Far more assets to be secured but some frequently idle or lost driving operating costs up
Availability (single server)	99.99 to 99.999% most common (at best 5 minutes per year)	99.5 to 99.95% most common (at best 4 hours 23 minutes per year)
Change management	Strong change control process	Weak change control processes can cause an increase in outages
Data integrity	Fewer databases with least cost for archiving, backup and synchronization	Myriad of databases with high cost of archiving, backup, duplication and synchronization

Disaster recovery/business continuity	Fewer systems means easier and less complex to manage and duplicate	100s to 1000s of systems makes DR/BC complex, hard to duplicate, and failure prone
Productivity	Cost per unit of work declines as workload increases (Figure 4)	No cost per workload benefits achieved as workload increases
Resiliency	Better hardware and system software reliability and serviceability for fewer downtimes and shorter disruptions to service	Less advanced hardware and software reliability and serviceability features causing more downtime; more hardware means more complexity, failures and outages
Utilization management	Common for 60 – 100% utilization levels without issues	Most utilization levels < 10%; virtual systems on average < 30%; this causes server and storage sprawl and greater need for power consumption and more floor space

Figure 4. Cost per Unit of Workload



From a business perspective, failure to properly address these areas can result in corporate waste, financial losses, higher operating expenses, impaired corporate image, loss of customer loyalty, or even financial ruin. Thus, CFOs, corporate and IT executives must treat IT risk management as a fiduciary responsibility and core to best practices for a competitive advantage. Moreover, CFOs, corporate and IT executives need to select systems based on current and future workload fit and total costs over a three- to five-year period of the holistic environment rather than on the cost of acquiring a single server.

Conclusions

RFG believes the overwhelming majority of corporate and governmental IT departments were not built to be agile, low-cost, low-risk operations and changing that culture will require CFOs and IT executives to work together to change financial strategies and the operational paradigm. Since culture beats process every day, the challenge requires behavioral modification across the IT staffing spectrum. Thus, to beat back the active and passive resistance, corporate executives and CFOs need to provide the financial strategy guidance, incentives and governance that will induce IT executives and their staffs to adopt cloud computing, lease-refresh-scale-up and enterprise systems for their IT infrastructure models. IT executives want to align their actions, budgets, and plans with the business, so if CFOs and senior IT executives provide a clear vision, guidance and rewards for transforming IT financial processes, the resistance will fade away and data centers could become optimized for competitive advantage. And in so doing, CFOs and IT executives will conserve cash upfront and annually while positioning IT to be more agile and better poised to handle business, economic and market conditions and fluctuations.

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