WHITE PAPER | **CLOUD ECONOMICS**

Aligning CFO and CIO Priorities

Forward-thinking organizations are viewing cloud computing as an investment in business transformation, not just a way to cut costs for IT. Thanks to the cloud, CFOs and CIOs are moving beyond the "either/or" discussions that once forced them to make tradeoffs between IT cost cutting and the creation of new business agility and value.

Enterprises today are facing unprecedented uncertainty, requiring a new level of agility to adapt quickly to changes in the business environment. Cloud computing enables you to navigate these situations and avoid the pitfalls of over-investment or under-investment in IT. As a result, business agility is edging out IT cost savings as the number one driver for cloud computing.* Companies can achieve *both* cost savings *and* business agility with cloud deployments, while new research reveals which cloud model is the most economical and empowering.

BUSINESS AGILITY: THE ANTIDOTE TO UNCERTAINTY

Business leaders have embraced cloud computing, in some cases bypassing IT and going directly to external cloud vendors to meet their business needs. This trend reflects the increased pressures on enterprises and their IT organizations to become more responsive to changes in the business environment.

Cloud computing promises IT cost savings, but also creates the business agility that enterprises need to manage in the "new normal" environment of economic uncertainty and constant change. According to McKinsey & Company, the leading global management consulting firm, business agility means the ability of a business to adapt rapidly and cost-efficiently to changes in the business environment. The key indicators of business agility are revenue growth, cost reduction, and more effective management of risks and reputational threats.

In today's marketplace, businesses face economic and market changes that often prove difficult if not impossible to forecast. This leaves companies vulnerable to swings in demand and either under-investment or over-investment in IT. Underestimating demand can lead to missed opportunities, or even outages and other major disruptions to your business. Overestimating demand, on the other hand, can result in write-offs for unused capacity and facilities.

The inherent flexibility in different cloud models can free CFOs and CIOs from these worries, while providing a more efficient way to manage actual demand. As you learn more about the application demand pattern, you can rapidly make economical decisions such as moving applications out to a public cloud or taking them back in-house. With cloud computing, you pay only for the IT resources you use, a key to both reducing costs and minimizing risks.

CFO AND CIO PARTNERSHIP— A MEETING OF THE MINDS IN THE CLOUD

While the cost benefits of cloud computing are well understood, CFOs and CIOs have had difficulty getting a fix on the greater potential benefit—business agility. Their dialogue is likely to focus on "How much capital and operational expense can we cut with cloud?" and not "How will cloud improve revenue and make us more agile?"

*CIO's 2011 Global Cloud Computing Adoption Survey

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CFO and CIO Objectives for Cloud Computing

	CFO	CIO
COST	▶ **Cost transparency** — Charging business units based on usage of computing ▶ **Forecast accuracy** — assessing the demands of the business and investments required, including cloud computing	▶ **Do more with the same budget or less** — reinvest cost savings into innovation ▶ **Resource planning** — ensuring adequate staffing and IT capacity are available to support internal and external customers
AGILITY	▶ **Investment analysis** — Calculating how the improved business agility delivers top- and bottom-line business benefits	▶ **Modernize legacy IT** to provide IT agility by anticipating and responding quickly to change to better support the business ▶ **Select the right cloud strategy** and improve performance SLAs
RISK	▶ **Mitigate potential corporate risk** when core operational processes are executed outside IT's direct control ▶ **Adhere to security and compliance** — internal and industry regulatory — requirements	▶ **Gain control over IT workload leakage** to public cloud providers as some line-of-business units pursue cloud solutions on their own ▶ **Manage data and application security** vulnerabilities in the cloud

This focus on cost savings has shaped the relationship between CFOs and CIOs at many companies. According to the 2011 Gartner study in conjunction with Financial Executives International, in 45 percent of organizations the CFO "…makes or leads IT investment strategy." According to the study, we are seeing a trend toward growing CFO IT leadership — driven, perhaps, by the fact that only 25 percent of CFOs see the CIO as a key player in determining business strategy and able to deliver against that strategy. The study also shows a rising influence of the CFO over the IT department. Among the IT organizations surveyed, 42 percent now report directly to the CFO, and that figure is expected to increase.

With the emergence of cloud computing, CIOs have an opportunity to play an expanded role in business strategy. By offering ***both*** cost savings ***and*** greater business value in the form of business agility, cloud computing can help put the CFO and CIO on the same page and improve the alignment between their organizations. Working together, they can drive a much tighter connection between IT transformation and business transformation.

The move by business units to go around IT and work directly with cloud vendors has understandably created concerns for both CFOs and CIOs. CFOs find it risky to execute core operational processes (in addition to security and compliance monitoring) outside IT's direct control. Similarly, CIOs recognize a loss of control for IT. Both the CFO and the CIO share an interest in balancing security and control with the greater business agility and faster time to value that the "maverick" business units are seeking from external cloud vendors.

THE RIGHT CLOUD CHOICE — FOCUS ON BUSINESS VALUE

Depending on business needs, each cloud model—public, private, and hybrid—has characteristics and benefits that attract organizations.

- **PUBLIC CLOUDS**: provide an ideal solution when application demand is variable or seasonal in nature. Public clouds are suitable for companies that require rapidly expandable scaling, run applications with non-sensitive data, and offer customers guaranteed service-level agreements (SLAs).
- **PRIVATE CLOUDS**: enable organizations to run highly regulated applications with more predictable and constant demand, including applications that house sensitive and proprietary data. The private cloud offers the advantages of enterprise-class performance, tighter security, increased quality of service and the ability to scale the data-center and modify applications in close concert with business operations.
- **HYBRID CLOUDS**: combine the benefits of both public and private clouds and offer portability between them based on business requirements. In this sense, a hybrid cloud delivers the best of both worlds, allowing organizations to run the right workload in the right environment.

RESEARCH SHOWS HYBRID CLOUD IS MOST ECONOMICAL

Cloud computing can help shift capital expenses to operating expenses, freeing up budgets and offering more flexibility for the CFO and CIO. Moving costs around, however, is not necessarily meaningful. More importantly, cloud can bolster the key financial metric of earnings before income taxes, depreciation, and amortization (EBITDA). With limited capital expenditures impacting the bottom line, and depreciation and amortization set aside, EBITDA is an indicator of profitability that balances both cost savings and

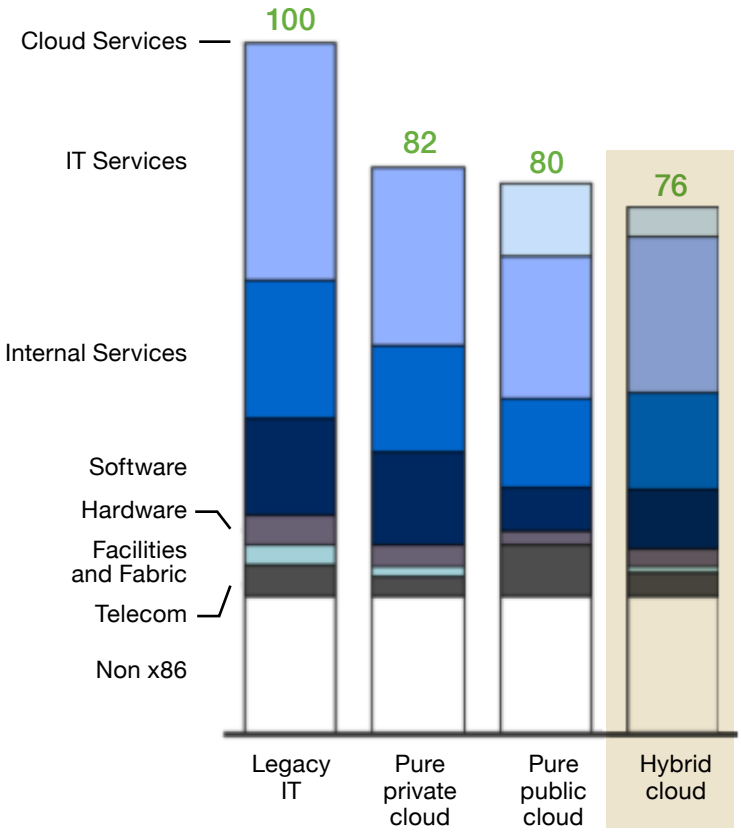
corporate revenue growth. To articulate the value of cloud computing within their organizations, CFOs and CIOs need to have a good handle on both parts of the equation — cost and business value.

Most companies, however, do not have a firm grasp of their IT costs. According to Gartner analyst David Smith, "Most companies…can't legitimately say whether they will save money by moving to the cloud." That applies especially to very large companies. In a report published last December, Gartner estimated that only about 10 percent of the CIOs at the 2,000 largest global companies truly understand their costs. CFOs and CIOs at many companies have been flying blind when it comes to determining which cloud model offers the most savings — until now.

Recent VMware and EMC research[1] findings show that all cloud types offer a substantial savings over a traditional on-premise infrastructure; however the hybrid cloud yields the highest savings of 20-30 percent. Based on these findings, the research predicts that the hybrid cloud will eventually be adopted as the predominant deployment model for enterprises.

Annual Total IT Spend

(100 = Total IT spend with all on-premise infrastructure)



The VMware and EMC research[2] found that cloud deployments produce the substantial savings noted above.

[1, 2] Gartner, IDC market data; Gartner IT Key Metrics Data 2009; VMware and EMC analysis

Measuring Cloud Economics

The VMware and EMC findings were derived in the following way.

1. **Leveraging industry IT spend benchmarks as a starting point —** Benchmarks from IDC and Gartner were used across the seven categories of IT Services (External), Internal Services, Software, Hardware, Facilities, Telecom, and Cloud Services. The benchmarks extended to include industry-specific data from the finance, media, telecom, healthcare, retail, IT professional services and pharmaceutical industries.
2. **Selecting workload types for spend shift analysis —** These benchmarks were factored into the spend shift analysis of nine top workloads that drive IT the most — from CRM to ERP to custom applications — and the software that is needed to build or run these main workloads.
3. **Calculating IT spend change —** The spend shift assumptions then illustrate the savings for each IT spend line item for different cloud adoptions scenarios.
4. **Optimizing the model —** Cost comparisons were reviewed for each workload to examine differences based on choice of each cloud option.

Hybrid Cloud Can Reduce IT Costs 20-30 Percent

- **Virtualization and consolidation —** reduces infrastructure footprint which leads to lower spend on compute, storage and network hardware and software, as well as lower labor, services and utilities cost to deploy, operate and support infrastructure.
- **Optimized workload sourcing between public and private — based on price, performance and risk —** reduces overall IT spend on the production of IT services by 30-50 percent compared with private clouds. Hybrid clouds allow IT to right-size the datacenter while leveraging platform-as-a-service/infrastructure-as-a-service offerings from public cloud providers as needed. Hybrid cloud reaps economic benefits from the common platform, management, and security frameworks it leverages.
- **Optimized provisioning —** enables IT to source peak capacity demand levels from the public cloud, which allows managers to provision in-house capacity only for baseline demand and further reduce infrastructure footprint.
- **Higher productivity in application development and maintenance —** uses standardized frameworks and infrastructure while deploying some percentage of the application workload in the public cloud. This benefit can represent a 30-40 percent savings in application development and maintenance costs.

Most organizations are not likely to see cost savings right away, given the level of investment needed to transition to cloud (even for public cloud deployment due to networking capex costs). A more realistic expectation is to see ROI accrue in phases on a project-by-project basis.

PLANNING A SUCCESSFUL CLOUD STRATEGY

As CFOs and CIOs consider cloud computing, foremost in their minds are their current business requirements and IT environments. They want their approach to be flexible and scalable enough to meet their requirements now and into the future, and to be secure. Strategies based on the real-world experience of VMware, a cloud leader, can help you balance the right considerations for your cloud investment.

1. **Choose cloud models based on demand —** If you can't gain knowledge about demand cycles then look to public cloud. If you can predict demand then look to private cloud and manage in-house. If there are peaks in demand, look to hybrid to manage in a private cloud and scale to public cloud when needed. And once applications are deployed to cloud, IT can also enable and monitor key metering and self-service features to allow tracking of application usage and optimize across deployment models.
2. **Achieve economics on your terms —** Investigate whether your cloud provider has hidden costs. Set-up, transfer, storage and redundancy costs may not be reflected in their basic "per-user-per-month" subscription fee schedule (which can balloon over time). There may also be potential limitations of service level agreements (SLAs) cloud providers offer. If the public cloud vendor only offers a "one-size-fits-all" SLA, confirm that the vendor penalties are in place for failing to meet requirements, or if a custom SLA can be crafted to meet individual customer needs. Make sure cloud providers are factoring in your unique needs.
3. **Know the cost of cloud entry —** Before embarking on a private, public, or hybrid cloud strategy, know the cost of moving to and staying in that cloud. For public clouds, it is important to explore if your public cloud vendor requires re-writing and re-architecting applications specifically for their platform. This is an additional public cloud investment to consider and may also create vendor lock-in in the future.
4. **Leverage existing investments—** Before selecting a cloud deployment model, consider how the model will impact depreciation and amortization of existing IT investments. The industry acknowledged fact that virtualization is the foundation for any cloud deployment model

means that you can leverage this existing virtual infrastructure investment, as the same virtual security frameworks can be extended to secure cloud environments. In addition, the Capex cost savings achieved with virtualization can be reinvested in innovation spending on cloud.

5. **Invest in open solutions —** If cloud vendors don't offer open standards, take caution. Proprietary interfaces could spell a lot of downstream cost and complexity to move workloads and applications between clouds to get the optimum value. Look for ANSI standard workloads (such as Open Virtualization Format or OVF) to help ensure the viability and longevity of your technology investments into the future.

6. **Don't fire and forget —** Adhering to the maxim that "you can't manage what you can't measure," CIOs as well as CFOs should retain some level of visibility and control into IT operations. To measure and manage in the era of cloud, you need to change the way you standardize and converge the disciplines, tools, teams and processes to build and manage your cloud. It's important to implement business rules and policies to facilitate self-service while maintaining control and providing visibility into costs, compliance and service levels. Without the right IT business management disciplines, the lack of business governance can lead to increased cost, licensing, chargeback and security issues.

7. **Avoid technology silos for the future —** As new business opportunities will be in adjacent areas to the current business it's important to develop a cloud strategy that is evolutionary from the current IT architecture. The cloud strategy needs to be viewed as an IT investment that helps bridge the present and future cloud investments so it's compatible with both. What you don't want is an isolated cloud environment that can't interoperate with the existing business and therefore can't be leveraged for an adjacent business opportunity.

THE ECONOMICS OF AGILITY: BOTTOM-LINE BENEFITS AND TOP-LINE GROWTH

Cloud computing can be a strategic weapon for business transformation, enabling organizations to add new IT capacity and capabilities, control costs, and minimize the risk of over-investing or under-investing in IT. However, successful cloud deployments require the CFO and CIO to join forces around common objectives that extend beyond a singular focus on expense reduction. Cloud computing presents an opportunity to reduce IT costs, but also to increase business agility along with the revenue growth, profitability and competitiveness of your organization. ■