

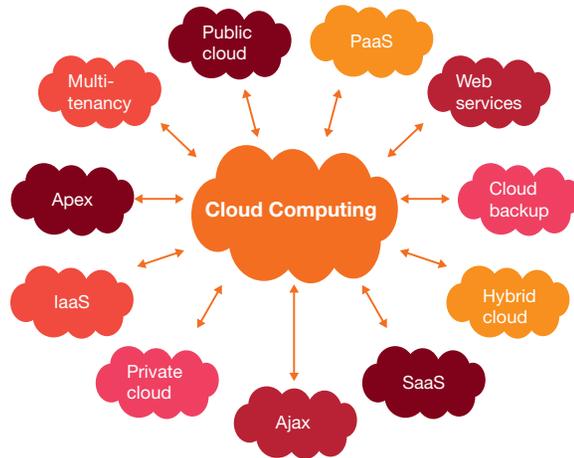
On the horizon

Insights into the Cloud for finance and accounting professionals

December 2013

Introduction

What is the Cloud?



Demand for Cloud is mounting:

According to IDC, worldwide spending on public IT Cloud services is expected to approach \$100 billion in 2016¹

“How will Cloud impact cost structures and governance?”

“How are you accounting for how Cloud can impact your revenue model or tax structure?”

In today’s changing world, CFOs need to understand the financial risks and rewards of the Cloud. By educating themselves on service models, cost structures, and governance issues, they can engage in meaningful discussions with the CIO and other C-suite executives about how Cloud computing can advance the business.

Why Cloud computing matters

Cloud computing is more than the latest IT trend—it is imperative that CFOs understand the Cloud solutions being leveraged in their companies and the related financial impact. Otherwise, CFOs face risks, such as:

- **Performance management:** Lack of insight into the cost of Cloud services as compared to traditional IT models, and the new margin structure for software transitioned to a service model can severely impact the effectiveness of enterprise performance management.
- **Cost control:** Paying for data centers and related technology for a diminishing amount of capacity usage if there is a growing, “shadow” move to the Cloud.
- **Governance:** Transferring responsibility for processes and controls to a third-party that may impact commitments CFOs have made to other stakeholders, resulting in a fiduciary breach.
- **Tax:** Not understanding tax laws that determine nexus may be interpreted differently depending on the location from which new Cloud-based revenue offerings are being delivered.

Cloud computing delivery models

But, what is Cloud computing? Today, there are four primary delivery models for the Cloud: IaaS (Infrastructure as a Service), PaaS (Platform as a Service), SaaS (Software as a Service), and BPaaS (Business Process as a Service).² However, in the simplest form, Cloud computing enables companies to pay for IT services they need, when they need them, in lieu of acquiring fixed assets.

Ultimately, Cloud models represent a dynamic shift in IT architecture, delivery, and consumption for both Cloud providers and customers:

Cloud service providers can innovate new products or services, or leverage the Cloud as a new channel to deliver existing products more cost effectively to customers.

Cloud customers can leverage the Cloud provider’s infrastructure to manage costs by changing how IT operates and serves internal customers. Alternatively, businesses—including CFO organizations—are leveraging Cloud solutions to reduce internal investments and standardize common, repeatable business processes such as talent management, HR, customer relationship management (CRM), procurement, payroll, and many others.

Finance & accounting implications

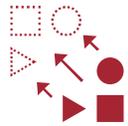
As companies increasingly adopt Cloud solutions, executives will need a greater understanding of how the Cloud impacts Revenue Recognition, Operating Expenses, Fixed Assets, Taxes and Performance Management. PwC provides insight into these issues and perspective regarding key considerations for C-suite executives.

1. IDC, “Worldwide and Regional Public IT Cloud Services 2012–2016 Forecast”, August 2012.

2. See Summary for definitions of IaaS, PaaS, SaaS and BPaaS.

Revenue recognition

Change on the horizon



Expanding product line



Complex offers



Changing GAAP guidance



New revenue types

Evolving Cloud business and operating models

+

changing regulatory
environment

=

finance complexity

PwC perspective

Shifting services to the Cloud

Under current US Generally Accepted Accounting Principles (GAAP), revenue recognition for Cloud services providers takes place ratably over the contract term, or based on a specified usage-based model. Questions about complex issues, e.g. what constitutes control of assets, and which assets transfer to the customer, require navigation of multiple US GAAP guidelines.

Sales of additional or complementary services further impact revenue recognition, as appropriate valuation, allocation, and potential deferral of revenue must be determined. Additionally, the sale of bundled offerings which contain both products and services drive further complexities, such as the need to apply accounting methods that are not typically used for non-software sales.

	Cloud services	Software and hardware sales
Asset ownership (license rights)	Vendor	Customer
Accounting model	Services accounting model	Product accounting model
Revenue recognition	Ratably over contract term or as stipulated by service contract	At time of sale

Future requirements for revenue recognition

The Financial Accounting Standards Board (FASB) is currently finalizing new guidance that will go into effect for all reporting periods beginning on or after January 1, 2017. The proposed guidance codifies all revenue recognition around a single core principle: revenue is recognized when the customer obtains control of the asset delivered. Cloud offerings will generally be accounted for using a services

model under the proposed standard. What are the implications? Under the proposed guidelines:

Performance obligations: Companies should identify distinct performance obligations (a promise to deliver a good or service) in a contract and account for each good or service separately. Value must be estimated when stand-alone prices are not readily determinable. Leading practices indicate that assessing the new FASB guidance and these more complex Cloud products can lead to process and systems enhancements that result in both scale and efficiency.

Revenue allocation: Consideration for a contract must be allocated based on the actual or estimated value of associated performance obligations. With incentive-based contracts, Cloud services providers need to estimate performance-based fees or similar value. With usage-based contracts, providers must determine whether additional usage is an option to purchase new services, or if this is a contingent consideration. A contingent consideration needs to be estimated as part of the overall contract value.

Financial impact

Whether implementing a new Cloud services model, or preparing for changes to Cloud Rev Rec, companies should prepare for an impact on their accounting systems, processes, and models. The changes in recognition and pricing models could cause significant volatility in revenue, as usage-based services become prominent and as models are refined for better estimation and planning. The changes to US GAAP will also affect revenue deferral, and may impact both margins and profitability in the near term as companies and models adapt.

Profitability management

Impacting the P&L

48% of CEOs are motivated by improving operational effectiveness³

Cost categories lack visibility to actual services provided by a Shared Service Organization (SSO)

Existing view

Cost A **\$300M**

Cost B **\$350M**

Future state

Useful categories improve visibility

Insourced support

Online self-help

Other

Aligned to business model of SSO

Cost/Head
\$300M
Headcount

Rate/Call
\$200M
Call volume

\$150M

Transparent accountability

\$4 Avg Call
x 50M Calls

PwC perspective

As Cloud services grow, Cloud providers will be expected to absorb the IT cost structure that many customers are seeking to avoid or remove altogether. Meanwhile, Cloud customers should closely manage cost savings to deliver expected value.

To realize effective Cloud cost management, leading companies are focusing on four key areas:

1. Costing and reporting strategies (provider only)

Leading companies often select an approach that enables them to understand fixed and variable costs, link financial results to resources, set margins, and establish actionable strategies. Strategies should align with management objectives and to the maturity of the company. For example, a “Cost Only” strategy, where costs are measured as a percentage of revenue, may be suitable for a start-up company, since Finance can leverage the existing P&L structure. However, this same strategy may not be appropriate for a growth company that may need insight into rate and volume drivers.

2. Standardized taxonomy (provider & customer)

Developing a common and consistent understanding of the individual cost components can enable standardized discussions, measurement, and reporting of costs. A common language can enable business leaders to drive the right discussions and decisions regarding capital and operating spend.

3. Cost component and driver accountability model (provider only)

Standardized taxonomies provide a baseline transparency to each Cloud service’s cost profile to which it is applied. While this establishes

accountability at the business unit level, driving cost behaviors through the organization requires insight into volume and rate of resources consumed or assets utilized.

Adopting volume drivers into capital and operating planning processes and developing standard rates for planning and financial reporting processes drives improved cost behavior. Ownership between shared services and business units should be defined to set expectations for investment decisions, asset provisioning, and cost variances by product, geography, or business units.

4. Information and reporting systems (provider and customer)

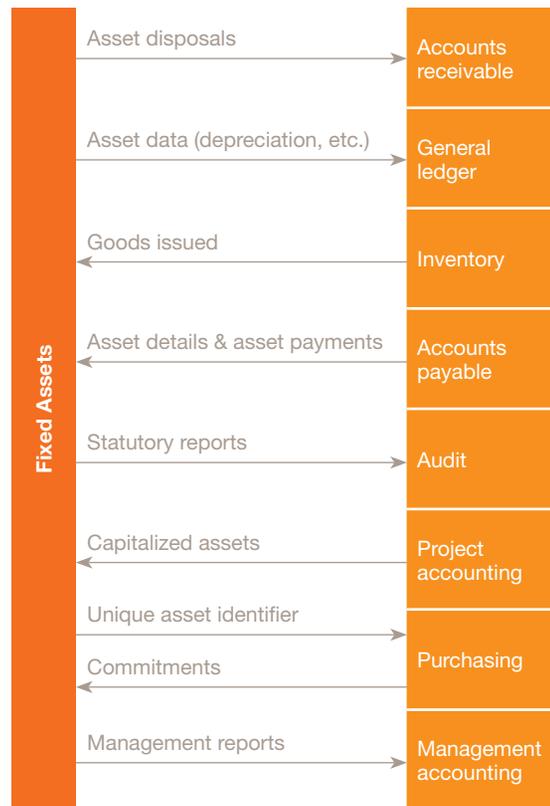
The flexibility and business agility offered by the Cloud can also be applied internally to improve business performance. Implementing proper master data structures, well-designed and automated systems and tools, and rigid governance result in complete and accurate P&L performance and analysis that is not burdensome. Senior executives should consider investing in internally developed or vendor-based solutions to support leading costing practices.

Financial impact

For Cloud services providers, a sound cost management program can lead to effective pricing, profit, and capital decision-making. Leading companies often view this as a requirement to achieve and sustain profitability. For Cloud customers, effective cost management can save costs and improve margins.

Fixed assets

Capitalizing on the Cloud



PwC perspective

Finance leadership is essential to appropriately monitor and capture capital costs. For example, fixed asset capitalization rules can be relatively judgmental, and data center asset management practices impact financial reporting accuracy.

Service Providers

The treatment of Cloud development costs depends on whether they are software related. For example, software development costs should be capitalized once “technological feasibility” occurs.⁴ An entity with no plans to sell, lease, or license the software will generally follow the internal-use software guidance, which has an earlier threshold for capitalization. Additionally, there is no direct guidance on capitalization of up-front service setup costs, though an analogy can be made to other accounting guidance.

Another key aspect of managing Cloud fixed assets is the ability to identify, track and manage data center assets. For instance, assets may be moved between data centers as part of ongoing capacity, latency and other Cloud performance management needs. Leading practices around data center asset management involve system investments, process controls and periodic physical inventory to ensure assets reconcile between operational asset management and financial reporting systems.

Customers

Typically, IT hardware is a capital expense. However, Cloud computing challenges the historical norms, as we can now procure IT hardware and software as a service. Cloud customers can relieve themselves of maintaining the full suite of physical and human IT infrastructure, though this new reality entails treating IT primarily as an operating expense.

Finally, companies should employ the same buy vs. rent decision model that’s in place for other fixed assets, or possibly consider a hybrid of the two models as a hedge against security and reliability concerns. The expectation is that Cloud service providers can price more competitively, but are you prepared to do the math?

Financial impact

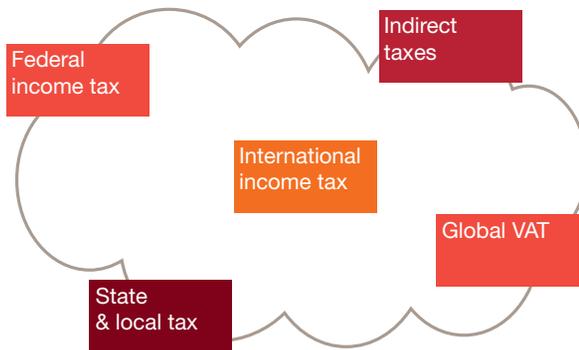
It is important that Cloud providers understand and track the cost components of their Cloud development activities as well as data center assets. R&D projects should also be monitored for asset impairment. Accounting systems rarely keep pace with changing business models – do you have the strategy, tools and processes needed to capitalize on the Cloud?

For Cloud customers, new pricing schemes will usher in volatile IT costs as consumption ramps up and down—a sharp departure from traditional, straight-line depreciation models for IT. There can also be a significant write-off of hardware and software with replacing existing equipment with Cloud computing.

4. Financial Accounting Standards Board, FASB 86.

Tax

Managing complexity in a new environment



PwC perspective

Providers in the digital age face potentially complex tax-related issues around Cloud computing transactions. For example, while US tax laws have been relatively static for years, the complexity and novelty of related transactions continue to change rapidly. As such, the nature of Cloud-based global services and delivery models can raise unforeseen and sometimes significant tax issues.

Classifying Cloud transactions

The challenge in analyzing Cloud computing transactions is not necessarily in simply understanding the method and principles by which these transactions should be evaluated. Rather, it is in breaking down and analyzing complex patterns within a legal framework that can result in ambiguity.

Understanding the legal nature of a particular transaction is an essential first step to identify which rules will govern its tax treatment. At first glance, it may seem that Cloud transactions are simply services transactions. However, that label is too vague given that it broadly encompasses many types of electronic transactions.

Potential characterizations include service, sale, lease or license. The correct initial transaction classification is critical as differing tax rules may apply for each transaction type. Classification, moreover, is important with respect to tax treaty determinations as well, e.g. to determine whether a treaty's business profits, royalty or rental articles apply to a transaction.

Delivery model implications

Apart from transaction classification issues, the location of a provider's physical data centers and other delivery facilities may also create tax consequences, such as those resulting from nexus and permanent establishment. It is important for providers to evaluate the tax implications of their Cloud delivery models, especially when operating a global business. Tax laws in growing and emerging economies change more frequently as governments look for new sources of revenue.

Financial impact

The classification of Cloud transactions and the location of physical operations can result in increased tax expense and liabilities. For example, indirect taxes may increase in territories where a company has a new SaaS offering. Designing a robust tax strategy that addresses the intricacies of operating a Cloud business is important to minimize tax obligations and drive profitability.

Performance management

Measuring profitability for SaaS

Customer

The identification of a Customer can be at many different levels (i.e. Subsidiary, Parent Company, etc.) and will vary from company to company. A Customer can be measured at many different stages of the Customer life-cycle, including Trial, Paid Active, Provisioned Not Active, and Cancelled.

Contract/Order

The agreement between a Customer and Company for the purchase and right to use a product. A Contract/Order can contain one or many products, bundles, amendments or terms that would affect measurement of performance.

Subscriptions/Units

The discrete elements by which products on a Contract/Order are used or consumed. Examples include the inbox for an email provider, a unique user for online productivity software, compute hours or storage for a Cloud computing provider.

PwC perspective

As Cloud computing ushers in new business models, companies should adapt their approaches to performance management. Traditional metrics simply no longer provide the insights necessary for business growth.

Changing data needs

As discussed earlier, driving cost behaviors through the organization requires insight into volume and the rate of resources consumed or assets utilized. Metrics for SaaS, PaaS, and IaaS business models are needed, such as the following examples:

Revenue drivers	Cost drivers
GB used	Data center (kW)
Virtual machines	Networking (servers)
Inboxes	Data center (kW)
Subscriptions	Bandwidth (Mbps)
Transactions	Incident management (incidents)
Activations	Depreciation (server)
Reservations	Headcount (FTes)
Users	Billing (transactions)

New measurement methods mean different data needs within a Cloud-based environment. In many cases, tools to accurately capture and report data for new business models simply don't yet exist. For example, a company that typically measures the activation of a software license may struggle to capture individual user data with a Cloud-based version of that same software offering. With the Cloud, a user's actions are noted each time they log into the service, providing significantly more customer data—and creating an entirely new level of complexity.

The different types and quantities of user data need to be considered when building a performance management strategy and corresponding reporting capabilities. Example reporting levels for Cloud activities include the following: “Customer,” “Contract/Order,” and “Subscriptions/Units.” New performance measurement metrics are needed across each reporting level, which can be accomplished by looking at items such as “APRU,” “Churn” and “Net Additions.” These metrics can be created across multiple stages of the sales cycle including Trial products, Free products, and Billed products.

Financial Impact

Given the business model changes associated with moving to the Cloud, and the corresponding impact across Revenue Recognition, Costs, Fixed Assets, and Tax, executives should consider the new coding and classifications required to appropriately capture transaction data. A solid performance management strategy that identifies the data necessary to support the Cloud can help successfully drive the business forward.

Summary

Final thoughts

IaaS (Infrastructure as a Service)

The basic computing infrastructure of servers and network equipment is provided as an on-demand service upon which a platform to develop and execute applications can be established.

PaaS (Platform as a Service)

The computing platform, which includes operating system and database, is provided as an on-demand service upon which applications can be developed and deployed.

SaaS (Software as a Service)

One or more applications and the computational resources to run them are provided for use on demand as a turnkey service. SaaS is typically used to access desktop apps via a web browser, for example accessing email online or using CRM tools online.

BPaaS (Business Process as a Service)

This is the delivery of business process outsourcing services that are sourced from the Cloud and constructed for multi-tenancy.

Cloud impact

Revenue
recognition

Profitability
management

Fixed
assets

Tax

Performance
management

Key takeaways

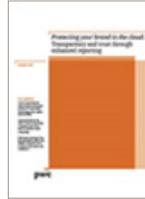
- Subscription and transaction-based models require new capabilities beyond traditional out-of-the-box or licensed software
- Tools are available to manage new micro-transaction volumes as an alternative to a human capital solution
- Proposed accounting principles may impact profitability and requires careful analysis prior to implementation
- Digital business models require a new way of thinking about supply chain for physical assets and customer fulfillment
- Significantly different margin structures require new carefully managed messaging to investors
- Cost accounting should change in tandem with business model transition to ensure appropriate cost insight
- Lack of centralized digital asset lifecycle management can contribute to CAPEX forecasting and reporting issues
- Managing compliance from forecast-to-decommissioning requires new capabilities not resident in manufacturing models
- Capitalization and asset policies require clear connection to data management practices to avoid regulatory issues
- Tax management is a strategic value enabler in digital business models
- The tax classification of Cloud/electronic transactions differ from traditional models and require monitoring of new offers
- The location of delivery facilities may create tax consequences, including nexus issues
- Digital business model transition requires a revamping of KPIs and compensation metrics for sales staff and executives
- Running parallel digital and traditional businesses necessitate separate performance and product conversion tracking
- Value-chain mapping from revenue to cost drivers is critical to applying appropriate KPIs to your business

Cloud resources

Links:

[Cloud home page](#)

[Cloud computing resources page](#)



Protecting your brand in the Cloud: Transparency and trust through enhanced reporting



Cloud computing and the internal audit function



Navigating security in the Cloud



Clouds in the enterprise: Navigating the path to business advantage



Cloud computing and the role of the CEO



Digital IQ Survey



Cloud computing and the role of the CFO



Technology forecast



Global Software Leaders: Key players & market trends



Experience Radar 2013: Lessons from the U.S. Enterprise Software industry



Cloud-enabled telco opportunities



Future of Software Pricing Excellence: SaaS Pricing

Contacts

For more information about this publication, please contact:

Michael Pearl

Principal, Advisory Services
US Cloud Computing Leader
(408) 817 3801
michael.pearl@us.pwc.com

Robert Moline

Partner, Advisory Services
Technology Sector Consulting
(206) 398 3015
robert.l.moline@us.pwc.com

Bob Woods

Director, Advisory Services
Technology Sector Consulting
(206) 398 3341
robert.f.woods@us.pwc.com

Acknowledgements

This publication represents the efforts and ideas of many members of the Firm. The principal contributors were Tammie Johnson, Jim Berres, Michelle Selvar, Cara Beston, Jasmin Young, and Kien Ha, with support from Chris Smith, Stig Haavardtun, Jennifer Jensen, Irina Majstrova, Grace Kwon, Nathan Gaither, and Shelby Yarnell. Their support on this project is much appreciated.

www.pwc.com