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Technology Spotlight

Accounting for Costs Associated With Cloud Computing

In This Issue:

The Bottom Line

Because of the lack of industry-specific accounting guidance, it can be difficult to know which guidance to apply. This determination depends on the nature of the costs incurred.

- Cloud computing continues to evolve and become a more widely used method for providing or accessing software applications, servers, data centers, and other IT-related items. Such computing offers increased flexibility and lower-cost IT solutions, allowing entities to outsource their traditional enterprise resource planning (ERP) systems or any other on-site application to an off-site, on-demand solution.
- Cloud arrangements can be structured in various ways, including (1) public clouds, (2) private clouds, (3) community clouds, and (4) hybrid clouds. The delivery method that users select typically depends on their business needs.
- Despite the increasing use of clouds, accounting standard setters have opted not to release industry-specific guidance on accounting for costs associated with providing or using cloud arrangements. Therefore, entities must consult various Codification topics to determine the appropriate accounting treatment.
- Because of the lack of industry-specific accounting guidance, it can be difficult to know which guidance to apply. This determination depends on the nature of the costs incurred. Cloud service providers (CSPs) incur various costs, including costs associated with (1) Web site development, (2) development or acquisition of software to be used by the customer, (3) infrastructure purchases, (4) contract acquisition, and (5) maintenance or provision of ongoing services. Cloud service users may incur costs such as (1) fees for service, (2) fees for application software, or (3) various other costs.

Beyond the Bottom Line

This *Technology Spotlight* discusses the accounting for certain costs associated with cloud computing services.

Background

Over the past few years, cloud computing has revolutionized the business and technology landscape, offering more flexible and lower-cost IT solutions that allow businesses to outsource their traditional ERP systems or any other on-site application to an off-site, on-demand solution. Clouds can take various forms, from the access that a CSP provides to a single software application to outsourcing of an entity's entire IT infrastructure. The following diagram highlights the three main cloud service types:

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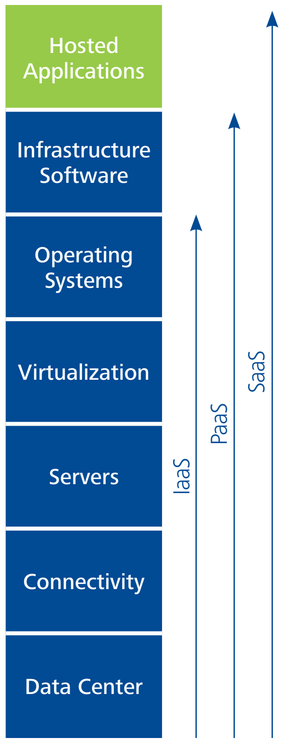


Service Type	Definition	Cloud Candidates
Software-as-a-Service (SaaS)	Customers **run finished applications** from the cloud service provider on a subscription basis, with no software license, and with limited operational control.	• CRM. • HR, payroll. • Finance. • Productivity apps, e-mail, collaboration.
Platform-as-a-Service (PaaS)	Customers **load and run software** on cloud platforms through a subscription service, without visibility to the underlying server environment.	• Custom development. • Java, ruby, and extensions to SaaS environments.
Infrastructure-as-a-Service (IaaS)	Customers **provision servers, storage, and database services** on cloud infrastructure through a subscription service, with direct operational control.	• Dev and test environments. • High-compute calculations (e.g., Monte Carlo scenario analysis). • Web servers.

A cloud may be created entirely within a customer's firewall, or the software applications, platform, and infrastructure may be managed by the CSP and made accessible to the customer over the Internet. The following diagram summarizes the typical cloud service delivery models:

Delivery Model	Definition	
Public cloud	• External to a client's premises. • Infrastructure third-party owned and managed. • Multitenant.	• Subscription-based. • Scalable and elastic. • Metered by use. • Access via Internet.
Virtual private cloud	• External to a client's premises. • Third-party owned and managed. • Multitenant (but virtually private).	• Scalable and elastic. • Access via dedicated but private link to public cloud. • Segmented, secured, or compartmentalized for client.
Private cloud	• Usually internal and delivered on a client's premises (but can be hosted by third-party provider). • Only used by internal customers.	• Scalable but with elasticity constraints. • Accessed via private link or internally. • Exclusive membership. • Spectrum of control/ownership.

Delivery Model	Definition
Community cloud	Similar to private cloud but infrastructure resources are shared with "communities" or groups with similar requirements (e.g., industry peers).
Hybrid cloud	Mix of private and public cloud environments (e.g., data is stored on private premises but other infrastructure is shared in public cloud).

The accounting for cloud computing service costs can be complex and challenging. The structure of the cloud may significantly affect customer pricing, costs incurred, and the related accounting treatment from both the CSP's and the customer's perspectives. The paragraphs below address typical costs that CSPs and customers incur in a cloud service arrangement and the potential accounting considerations.

Costs Incurred by Cloud Service Providers

CSPs incur various costs in providing services to their customers, including costs associated with:

- Web site development.
- Development or acquisition of software to be used by the customer.
- Infrastructure purchases.
- Contract acquisition costs.
- Maintenance or ongoing services.

The recognition section of ASC 350-50 provides guidance on accounting for costs associated with the activities within each of the Web site development stages.

Web Site Development

A CSP's Web site might be used as a marketing tool to attract attention and describe products or services offered or for other purposes. ASC 350-50[1] provides guidance on whether to capitalize or expense costs incurred in each of the following stages of Web site development:

- Planning stage.
- Web site application and infrastructure development stage.
- Graphics development stage.
- Content development stage.
- Operating stage.

The implementation guidance in ASC 350-50 contains descriptions and examples of the types of activities that would be performed in each of these stages. For example, the Web site application and infrastructure development stage would include acquiring or developing software necessary to operate the Web site and obtaining an Internet domain name. Costs incurred for activities in the planning, content development, and operating stages are generally expensed as incurred (with certain exceptions). However, the accounting for costs associated with other activities, such as those related to Web site application, infrastructure, or graphics development, depends more on the nature of the costs incurred. For example, the accounting for costs associated with software or graphics development may depend on whether the software is developed for internal needs or to be marketed externally. (ASC 350-40 provides guidance on accounting for software that is used internally and not marketed externally, while ASC 985-20 provides guidance on accounting for software that is marketed and used externally.) The recognition section of ASC 350-50 provides guidance on accounting for costs associated with the activities within each of the Web site development stages.

[1] For titles of *FASB Accounting Standards Codification* (ASC) references, see Deloitte's "Titles of Topics and Subtopics in the *FASB Accounting Standards Codification*."

Development or Acquisition of Software to Be Used by the Customer

Cloud arrangements may provide access to internally developed or externally purchased software applications or to software applications that give customers access to the cloud. The accounting for the costs incurred by a CSP to either develop or purchase the related software can depend on (1) the structure of the cloud, (2) how the software is used, and (3) the nature of the arrangement. Further, the costs that are eligible for capitalization may depend on whether the costs are accounted for in accordance with ASC 985-20 or ASC 350-40.

> ASC 985-20 (formerly FASB Statement 86[2]) provides guidance on accounting for costs incurred to purchase or internally develop software that will be sold, leased, or marketed. Under this guidance, costs incurred to establish technological feasibility of the software are expensed as incurred and subsequent production costs, such as those for testing or producing master copies, are capitalized.
>
> ASC 350-40 (formerly SOP 98-1[3]) details how to (1) determine whether purchased or internally developed software is for internal use and (2) account for costs incurred for developing or obtaining internal-use software. Under this guidance, costs incurred during the preliminary project and post-implementation stages are generally expensed as incurred, while certain costs incurred during the application development stage are capitalized.

If a cloud arrangement allows the customer to take possession, or have the ability to take possession, of a software application without incurring a significant penalty, the CSP would account for the costs of the software in accordance with ASC 985-20.

Accounting for the costs associated with acquired or internally developed software depends on whether the hosting arrangement (i.e., certain cloud arrangements) contains a software element. Specifically, ASC 985-605 indicates that hosting arrangements are **not** considered software products (and therefore would not be within the scope of ASC 985-20). ASC 985-605-55-121 clarifies that in a hosting arrangement, the customer does not take possession, or have the contractual right to take possession, of the software at any time during the arrangement without incurring a significant penalty, nor is it possible for the customer to operate the software on its own hardware or engage another third party to host the software for the customer. Therefore, if a cloud arrangement allows the customer to take possession, or have the ability to take possession, of a software application without incurring a significant penalty, the CSP would account for the costs of the software in accordance with ASC 985-20.

ASC 350-40 provides guidance on accounting for costs related to software developed or obtained for "internal use." Internal-use software is described as being "acquired, internally developed, or modified solely to meet the entity's internal needs" and as being developed with no substantive plan to "market the software externally." Therefore, if the software is used to produce a product or in a process to provide a service to the customer, but the customer is not given the right to obtain or use the software, the related costs would be accounted for in accordance with ASC 350-40. ASC 985-20 also does not specifically define the term "process"; however, ASC 730-10 states that a "process may be a system whose output is to be sold, leased, or otherwise marketed to others [and] may be used internally as a part of a manufacturing activity or a service activity where the service itself is marketed." Further, if the CSP maintains software on its own servers and allows customers to access, but not take possession of, the software at any time during the contractual period without incurring a significant penalty (i.e., a public cloud or on-demand access), the cost associated with producing or acquiring the software would be accounted for under ASC 350-40.

However, a CSP's business model may permit its customers to elect a service arrangement (i.e., to access a particular software application on demand via the Internet) or a software arrangement (i.e., to take possession of the same software for use at the customer's location). A CSP with this business model would apply the ASC 985-20 guidance to account for costs associated with internally developed or acquired software applications.

[2] FASB Statement No. 86, *Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed.*

[3] AICPA Statement of Position 98-1, *Accounting for the Costs of Computer Software Developed or Obtained for Internal Use.*

Infrastructure Purchases

A CSP may incur costs when creating the cloud services infrastructure, such as costs associated with acquiring storage, mainframe equipment, or servers.

For public clouds, the infrastructure is generally maintained at a CSP-specific location and is accessible to customers via the Internet. This type of equipment would generally represent a CSP's property and would be recognized as such and depreciated over its estimated useful life in accordance with ASC 360.

Other types of cloud arrangements may allow a customer access to a dedicated server or other equipment. While the guidance in ASC 360 may still apply, CSPs would need to consider whether such arrangements contain a lease in accordance with ASC 840 (since the customer may have the right to control the use of the underlying assets). Specifically, ASC 840-10-15-6 states that an arrangement qualifies as a lease if it "conveys to the purchaser (lessee) the right to control the use of the underlying property, plant, or equipment." The guidance provides specific conditions for determining whether this right exists. If an agreement is deemed to transfer such a right, the CSP would account for it as a lease in accordance with ASC 840 "even though substantial services by the contractor (lessor) may be called for in connection with the operation or maintenance of such assets." On the other hand, arrangements that allow multiple customers access to the servers or equipment generally would not convey the right to control the use of the equipment and therefore would not be considered a lease.

Other types of cloud arrangements may allow a customer access to a dedicated server or other equipment. While the guidance in ASC 360 may still apply, CSPs would need to consider whether such arrangements contain a lease in accordance with ASC 840 (since the customer may have the right to control the use of the underlying assets).

Editor's Note: In August 2010, the FASB and IASB (the "boards") issued a joint exposure draft (ED) on leases, which was released by the FASB as a proposed ASU.[4] Since then, the boards have continued deliberating this topic; they plan to issue a revised converged lease standard that will amend the definition of a lease. On the basis of decisions reached as of October 2012, the boards have tentatively defined a lease as "a contract in which the right to use a specified asset (the underlying asset) is conveyed, for a period of time, in exchange for consideration." Under the new standard, an entity would still need to use judgment to determine whether the cloud arrangement constitutes a lease.

Contract Acquisition Costs

When acquiring a new contract, a CSP may incur certain costs such as sales commissions or costs to set up a new customer. Although there is no specific U.S. GAAP guidance on how to account for these costs, entities have historically looked to the guidance in SAB Topic 13,[5] which allows an entity to make an accounting policy election to either expense the costs as incurred or defer and recognize direct and incremental costs in proportion to the related revenue being recognized. The SEC staff has stated that "expensing customer or contract acquisition costs is almost always acceptable." Alternatively, an entity may elect to capitalize certain direct and incremental costs of acquiring specific contracts by analogy to the guidance on capitalizing costs of originating loans under ASC 310-20-25-2 and separately priced extended warranty and product maintenance contracts under ASC 605-20-25-4. ASC 310-20 defines incremental direct costs as:

> Costs to originate a loan that have both of the following characteristics:
>
> a. Result directly from and are essential to the lending transaction
>
> b. Would not have been incurred by the lender had that lending transaction not occurred.

[4] FASB Proposed Accounting Standards Update, *Leases*.

[5] SEC Staff Accounting Bulletin 13, "Revenue Recognition."

Further, ASC 605-20-25-4 states:

> Costs that are directly related to the acquisition of a contract and that would have not been incurred but for the acquisition of that contract (incremental direct acquisition costs) shall be deferred and charged to expense in proportion to the revenue recognized. All other costs, such as costs of services performed under the contract, general and administrative expenses, advertising expenses, and costs associated with the negotiation of a contract that is not consummated, shall be charged to expense as incurred.

When determining the types of costs that qualify as direct and incremental for a particular contract, an entity must carefully consider the facts and circumstances associated with the contract being acquired. The accounting policy that an entity elects for this purpose should be disclosed and applied consistently.

Just as there is a lack of guidance on accounting for costs incurred to acquire a contract, there is no specific guidance on how these costs should be presented in the income statement. An entity should exercise judgment in determining the appropriate classification. However, an entity should present costs that are deferred and amortized in the income statement as if the entity had expensed them as incurred.

Costs related to maintenance and ongoing services are generally expensed as incurred, while certain other enhancements or upgrades that provide additional features and functionality may qualify for capitalization in certain circumstances.

Editor's Note: The boards' November 2011 joint revised ED on revenue recognition, released by the FASB and IASB as a proposed ASU,[6] is intended to supersede this guidance. As currently drafted, the ED requires entities to capitalize costs associated with obtaining a contract if certain criteria are met; it would no longer be acceptable for entities to expense qualifying costs as incurred. However, as a practical expedient, entities would be permitted to expense such costs as incurred when the expected amortization period is one year or less. This guidance is in line with that in other standards, including the tentative conclusions reached as part of the leases and insurance contract projects.

Maintenance or Ongoing Services

Once a customer's cloud services begin, a CSP can incur costs to maintain and support the ongoing level of service. Depending on the specific cloud structure, these costs may be related to various activities, such as phone support, routine maintenance, software enhancements, or hardware upgrades or replacements.

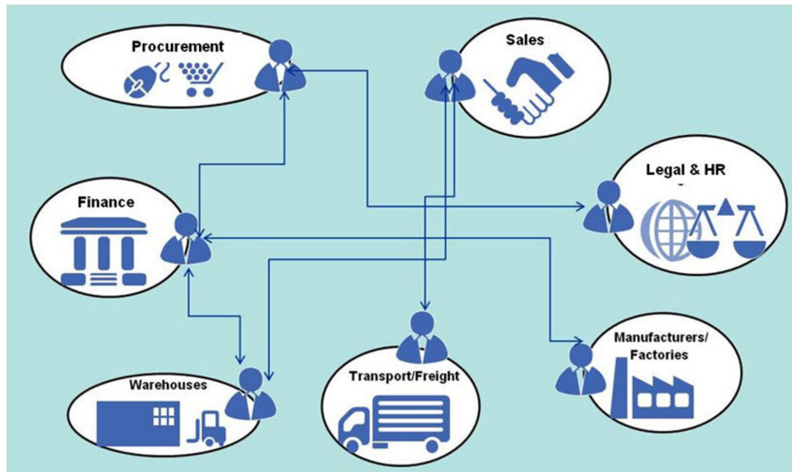
Costs related to maintenance and ongoing services are generally expensed as incurred, while certain other enhancements or upgrades that provide additional features and functionality may qualify for capitalization in certain circumstances. While not specifically defined in ASC 350-40, maintenance is defined in ASC 985-20-20 as "[a]ctivities undertaken after the product is available for general release to customers to correct errors or keep the product updated with current information [including] routine changes and additions." Maintenance would include modifications to the software to correct errors or omissions, apply bug fixes, install minor upgrades, or provide other general support services. For example, a modification to allow a software product to work on a new operating system without providing additional functionality would be considered maintenance. Other (non-maintenance-related) costs that provide the software with additional features and functionality may qualify for capitalization under ASC 350-40 or ASC 985-20. Specifically, ASC 350-40 allows for capitalization of costs for specified upgrades and enhancements to internal-use software if the costs will result in additional functionality, and ASC 985-20 allows for capitalization of certain costs related to enhancements to external-use products if technological feasibility of the product enhancement has been established. As with the accounting for other costs, an entity must use judgment when determining whether costs should be expensed as incurred (maintenance) or qualify for capitalization as product upgrades or enhancements.

[6] FASB Proposed Accounting Standards Update, *Revenue From Contracts With Customers*.

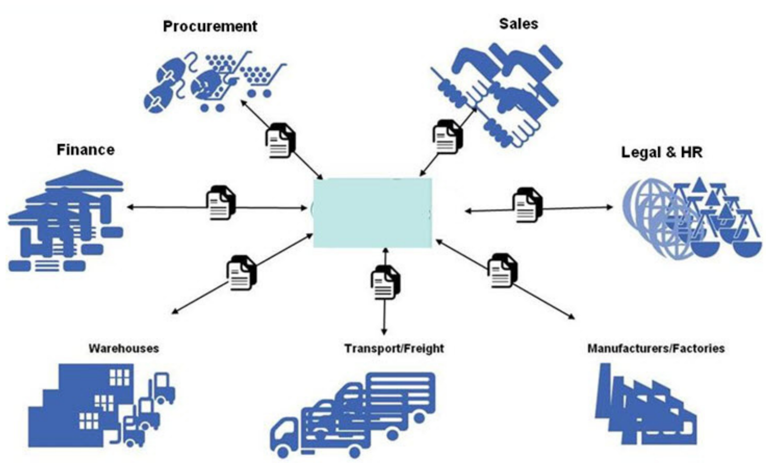
Costs Incurred by Customers

Entities have been changing traditional IT operating models and entering into arrangements with third-party CSPs for the use of specific software or platforms accessible through the Internet or for the outsourcing of their entire IT departments through cloud service models. The diagram below illustrates how a change from a traditional system operating model to a cloud-enabled operating model can affect an entity's IT infrastructure.

Traditional Operational Model



Cloud-Enabled Operating Model



Depending on the scale and size of the customer's needs, cloud service arrangements may include fees for the use of the services, the costs of software applications, or various other costs. The paragraphs below briefly describe these costs and the related accounting guidance that entities should consider.

Fee for Service

For use of the cloud services, a customer may pay a subscription fee based on a contractual rate in an arrangement with the CSP. Depending on the specific terms of the arrangement, the fee may be (1) billed periodically (e.g., monthly, annually), (2) fixed or variable, or (3) based on some measure of actual usage (e.g., per user, per service, per click). Subscription-type fees are generally expensed in the period in which the entity receives the benefit of using the related services. Often the period in which the benefit is received is clear; however, in certain circumstances, an entity may need to use judgment to determine the appropriate period in which to expense the cloud service fees in a manner consistent with accrual accounting. For example, if an entity pays a fee for the use of a CSP's cloud services for a specified period, the entity would most likely be receiving the benefit of the software throughout the specified period and would therefore recognize the related expense ratably over this period (unless evidence suggests that the entity is receiving the benefit in a pattern other than ratably). Depending on the timing of the payment of the fee, the entity would recognize a related asset or liability accordingly.

Because each cloud structure can be unique, an entity should carefully evaluate its specific facts and circumstances, including the structure of the cloud, the terms of the arrangement, and the use of software, when determining and applying the related accounting guidance.

Fees for Software Applications

When an entity purchases a software application from a third-party provider, the entity may intend the application to be kept, maintained, and accessed through a cloud network. This network could be a private cloud that is within the customer's firewall or a public cloud in which the software resides on a CSP's servers and the customer only has access to use it. An asset would be recorded and amortized over its expected useful life if the customer owns the software.

Other Costs

A customer may incur various other costs in a cloud arrangement, such as internal or external labor or consulting costs. These costs should be evaluated on the basis of the customer's specific facts and circumstances and recorded in accordance with the applicable guidance.

Customers should also be aware of and consider potential tax implications associated with cloud services. Examples of such implications may include timing differences between book and tax bases resulting from a shift from capital expenditures to operating expenses, transfer pricing issues, and receiving energy credits (i.e., from consuming less energy).

Conclusion

Because each cloud structure can be unique, an entity should carefully evaluate its specific facts and circumstances, including the structure of the cloud, the terms of the arrangement, and the use of software, when determining and applying the related accounting guidance. Given the judgment necessary and complexities of these types of arrangements, entities should consider consulting a qualified professional adviser to help them determine the proper accounting treatment for both book and tax purposes.

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