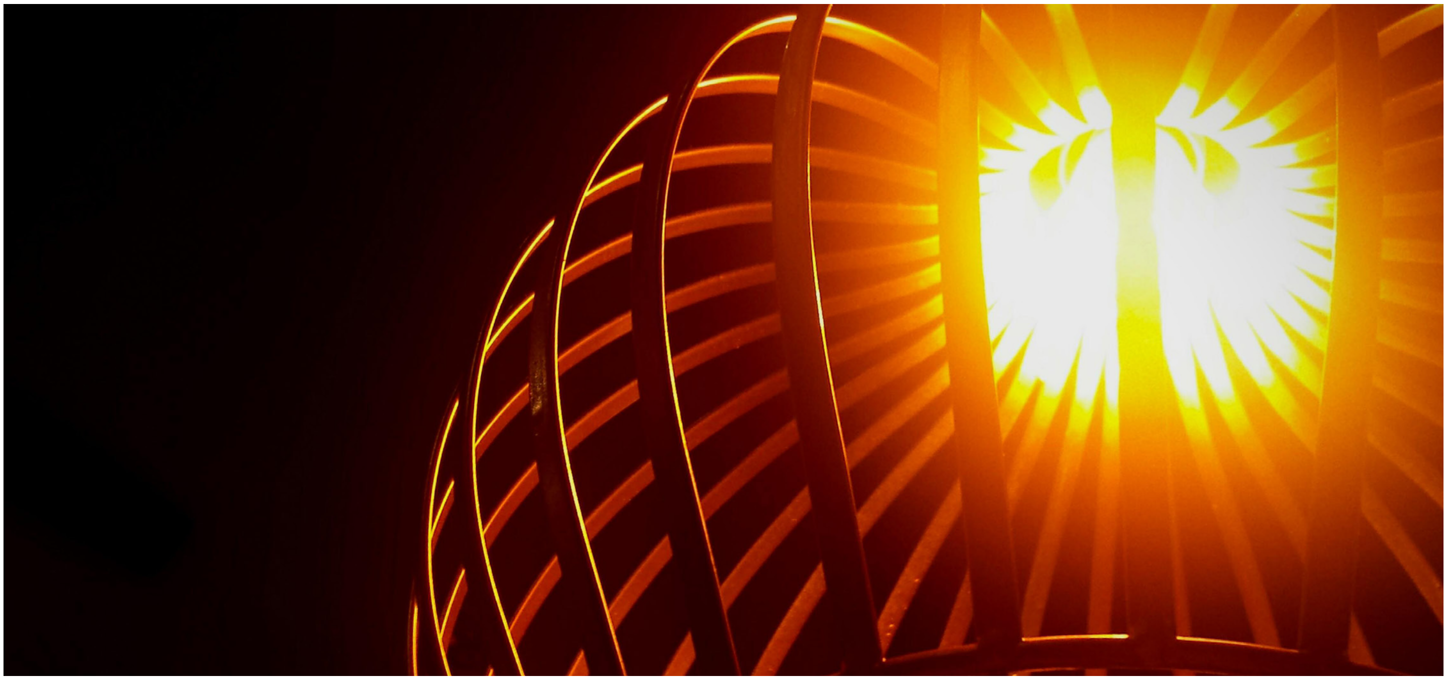

In This Issue

Cloud Migration Complexities

Background

Many organizations today are recognizing the benefits of cloud computing and migrating their on-premise software footprint to the cloud. Depending on their needs, organizations can engage with vendors for different types of cloud-based arrangements, including, but not limited to, the following:

- Software as a service (SaaS), which gives entities cloud-based Internet access to a wide range of applications managed by third-party vendors.
- Platform as a service (PaaS), an arrangement in which a third-party vendor provides a framework (a "platform") for a customer's in-house software developers (or a mix of in-house and third-party developers) to create and manage one or more applications.
- Infrastructure as a service (IaaS), a more comprehensive arrangement in which a third-party vendor delivers cloud computing infrastructure (including servers, a network, and storage) to a customer through a dashboard or visualization. The customer has complete control over the infrastructure, while the vendor is responsible for managing the servers, network, and storage.

Different approaches to determining how an organization will migrate its applications to the cloud will affect the type and scale of costs incurred. For example, rehosting (often referred to as "lift and shift"), which involves redeploying existing applications and data (the "lift") into a public cloud (the "shift") will most likely result in costs associated with data migration and configuration of the hosting environment. Replatforming,[1] which builds on rehosting, involves making changes to data and applications to optimize performance in the cloud. Replatforming will most likely involve incremental costs since additional changes are often made to modify or enhance the functionality of the applications that are migrated to the cloud. Other cloud

[1] Replatforming is often referred to as "lift, tinker, and shift."

migration approaches that require significant revisions of existing architectures, such as full or partial rebuilds[2] of existing code, may involve broader and more significant costs because of the amount and potential complexity of coding necessary to develop the desired functionality that the cloud environment enables.

Regardless of how an entity migrates applications to the cloud, the accounting for the migration costs can be complex and may require additional processes and controls. Many of the costs incurred will be within the scope of ASC 350-40.[3] However, identifying the costs that should be expensed as incurred, capitalized, or deferred can be challenging. It is imperative for management to have a process in place for appropriately identifying and categorizing costs and a strong understanding of the scope and recognition criteria in ASC 350-40 that apply to cloud migrations.

Scope Considerations

The accounting framework used to account for costs incurred in connection with a cloud migration is the same regardless of whether the cost associated with implementing a hosting arrangement is for a service contract or for the acquisition or development of internal-use software. However, entities that undergo cloud migrations will still need to understand the nature of both the underlying cost and the technology to which those cloud migrations are related so that they can properly (1) identify the costs that should be deferred or capitalized and (2) present the costs in the financial statements.

Differentiating Between a Service Contract and Internal-Use Software

As noted in paragraph BC2 of ASU 2018-15,[4] hosting arrangements that are service contracts include SaaS, PaaS, and IaaS. Accordingly, the implementation activities associated with these arrangements will be within scope of the guidance in ASC 350-40 applicable to hosting arrangements. This means that while eligible costs incurred during the application development stage to implement SaaS, PaaS, or IaaS may be deferred, they will ultimately be presented in the same financial statement line item as that of the hosting fees (i.e., an operating expense).

However, some hosting arrangements may include internal-use software. ASC 350-40-15-4A notes that software that is accessed through a hosting arrangement is considered internal-use software if (1) the entity "has the contractual right to take possession of the software at any time during the hosting period without significant penalty" and (2) "[i]t is feasible for the [entity] to either run the software on its own hardware or **contract with another party unrelated to the [software] vendor** to host the software" (emphasis added). Accordingly, software hosted by a third party with whom the entity has contracted (i.e., a party other than the software vendor) is considered internal-use software (rather than a hosting arrangement that is a service contract). This is because the guidance acknowledges that internal-use software can be hosted by a party unrelated to the software vendor.

Costs incurred to implement SaaS, PaaS, or IaaS should be distinguished from those incurred to develop or obtain internal-use software because the capitalized costs are presented differently. On an entity's balance sheet, the deferred costs of implementing SaaS, PaaS, or IaaS are presented with prepaid expenses rather than with software assets. Further, when such costs are amortized, they are presented in an entity's income statement as an operating expense with the associated hosting fees rather than as amortization expense. Entities will need to analyze the incurred costs associated with migrating applications to the cloud to

[2] In a partial rebuild (often referred to as "refactoring"), an organization rebuilds application code to optimize the cloud. Partial rebuilds are often performed with third-party partners through PaaS.

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

[4] FASB Accounting Standards Update (ASU) No. 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* — a consensus of the FASB Emerging Issues Task Force. For a discussion of the ASU's key provisions, see Deloitte's September 11, 2018, *Heads Up*.

determine whether to account for them as costs related to a service contract, an internal-use software asset, or both since hybrid cloud migrations often involve both internal-use software components and SaaS, PaaS, or IaaS components.

Example 1

Entity C is refactoring its enterprise resource planning (ERP) system (an internal-use software asset) to be hosted by Company X, a third-party hosting provider. The parties enter into a contract in which X promises to provide hosting (computing capacity and storage) to C for a three-year period. Entity C incurs $50,000 to configure the hosting environment for its use and $100,000 to modify and enhance the ERP system so that the system can be migrated to X's environment. Entity C concludes that (1) the $50,000 incurred to configure the hosted environment is within the scope of the guidance on implementing a hosting arrangement that is a service contract and (2) the $100,000 incurred to modify and enhance the ERP system is within the scope of the guidance on developing or obtaining internal-use software.

Connecting the Dots

The guidance in ASC 350-40 must be applied at the individual component or module level. While there is no specific guidance on what an individual component or module might be, an entity could consider the level of functionality that each component or module in a hosted software arrangement provides as well as the level of interdependence between the components or modules. Determining the appropriate components or modules is important for (1) assessing whether a component or module should be accounted for as a service contract or internal-use software and (2) identifying which stage of software development (as described below) an entity is in.

For additional discussion of scope considerations related to software development arrangements, see Deloitte's June 2020 *Technology Spotlight*.

Identifying Capitalizable or Deferrable Costs

ASC 350-40 provides a consistent recognition framework for identifying capitalizable costs regardless of whether an arrangement is a service contract or internal-use software. Costs incurred during the preliminary project stage, when entities are exploring different approaches and considering vendors to execute their cloud migration, will be expensed as incurred.

The application development period commences once (1) management with the relevant authority approves and commits funding for the project (to be considered at the component or module level) and (2) it is probable that the project will be completed and used as intended. During this period, certain costs should be either deferred and presented with prepaid expenses (to the extent that the costs are associated with implementing a hosting service contract) or capitalized as a software asset (to the extent that the costs are associated with acquiring, developing, upgrading, or enhancing internal-use software). Those costs include external direct costs of materials and services (e.g., purchase of software, fees paid to third-party developers or consultants) and internal direct costs of materials and services (e.g., payroll costs and other employee benefits of software developers, certain interest costs). However, indirect overhead costs should be expensed as incurred. Capitalization of development or implementation costs will cease once the application migration is complete and the software, the hosted environment, or both are substantially complete and ready for their intended use. This is typically after all testing is completed.

Entities migrating their applications to the cloud may incur different costs depending on the type of arrangement they enter into (SaaS, PaaS, or IaaS), the approach to cloud migration (rehosting, replatforming, refactoring, rebuilding, or replacing), and the mix of internal and external resources dedicated to the migration. Management will need to determine whether the costs incurred qualify for capitalization or deferral on the basis of the nature of the cost and the stage of development. The guidance in ASC 350-40 does not provide separate frameworks for the capitalization of internal costs (e.g., payroll, cost of materials) and the capitalization of external costs (e.g., third-party service providers), nor does it define “implementation costs.” In general, costs directly related to obtaining software; developing, upgrading, or enhancing software (e.g., coding and configuration); and testing will qualify for capitalization or deferral. However, certain costs must be expensed as incurred:

- *Data conversion costs* — While the costs associated with developing or obtaining software that allows for access or conversion of old data by new systems should be capitalized, costs of data conversion and data validation that are either performed manually or outsourced to a third party should generally be expensed as incurred. Entities that outsource data conversion activities may need to evaluate whether any costs incurred are related to obtaining internal-use data conversion software (even if the data conversion software is temporary); if so, such costs would be capitalized. All other data conversion costs must be expensed.
- *Training costs* — Costs of training an organization’s employees should be expensed as incurred. These costs may be (1) internal or (2) external (since in many cloud migrations, such training is provided by the hosting provider or another third-party consultant). However, costs incurred to develop or obtain a training module within a cloud-based application can be considered for capitalization or deferral.
- *Maintenance costs* — ASC 350-40 does not define maintenance; however, entities can look to the glossary of ASC 985-20, which defines the term 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. Those activities include routine changes and additions.” Entities may find it challenging to differentiate maintenance costs that must be expensed as incurred from capitalizable costs of software upgrades and enhancements. To qualify for capitalization, upgrades and enhancements must provide additional functionality.
- *Business process reengineering costs* — Costs of reengineering activities, which often are associated with new or upgraded software applications, are not within the scope of ASC 350-40; rather, they are within the scope of ASC 720-45. It is critical for entities to carefully track activities undertaken during cloud migration and software development since a cloud migration is a natural time for entities to reengineer or integrate business processes.

When migrating existing applications to the cloud, entities should carefully evaluate whether upgrades or enhancements are made to each application that is moving to the cloud. This is because only costs associated with upgrades and enhancements that add new functionality can be capitalized.

Example 2

Entity T is migrating two of its existing applications (Software X and Software Y) to a third-party hosted environment. Software X will be rehosted with minimal changes that do not add new functionality in the hosted environment, while Software Y will be refactored with significant changes to the coding that will add new functionality to Software Y when that software goes live in the hosted environment. Entity T concludes that the costs incurred to modify Software X are not eligible for capitalization because no new functionality is being created. However, T also concludes that eligible costs incurred during the application development stage to modify Software Y should be capitalized since new functionality is being developed as a result of the cloud migration.

In addition to the costs listed above, any general and administrative costs must also be expensed as incurred. Entities undergoing cloud migrations will need to carefully analyze payroll and payroll-related costs to determine the amount of costs that qualify for capitalization and the amount of costs that must be expensed as incurred since certain employees may devote their time to various activities across numerous projects in different phases of development.

Example 3

Company B is a large manufacturing entity that has scaled up through acquisitions and now has global operations. Accordingly, B decided to consolidate and move certain inventory and purchasing applications to the cloud through an IaaS arrangement. IT Supervisor 1 is partially responsible for overseeing B's implementation of this arrangement. The cloud-based software will contain the following applications, which are considered separate modules: (1) Product Planning, (2) Materials Purchasing, and (3) Inventory Management.

The Inventory Management application is in the preliminary project stage, while Product Planning and Materials Purchasing are in application development. Using B's current job cost tracking system, the company's accounting department determines that IT Supervisor 1 is spending her time as follows:

- Planning the design of the Inventory Management module: 20 percent.
- Reviewing changes to coding, which provide additional functionality, for the Product Planning and Materials Purchasing modules: 50 percent.
- Reviewing customized user training manuals: 20 percent.
- Holding meetings with accounting department personnel to ensure that software development and business processes are integrated: 10 percent.

Company B determines that (1) only the time spent on reviewing changes to code for the Product Planning and Materials Purchasing modules qualifies for capitalization and (2) the remainder of IT Supervisor 1's payroll and payroll-related costs must be expensed as incurred.

Similarly, entities undergoing cloud migrations will need to carefully analyze third-party invoices to determine which costs must be deferred or capitalized. Third-party service providers may provide some or all of the services required to migrate applications to the cloud, including the third-party hosting services. Entities may need to allocate third-party costs to the different elements in the arrangement (e.g., configuration, training, hosting); such allocation should be based on the relative stand-alone selling prices of the elements in the contract and not necessarily on the elements' respective prices as stated in the contract.

Connecting the Dots

The accounting guidance clearly indicates that in an arrangement accounted for as a service contract, the hosting fees should be expensed unless paid in advance of the hosting period (e.g., a prepayment of an annual fee for hosting services). However, upon determining that costs are incurred during the application development stage of developing or obtaining internal-use software, an entity may have to use judgment to determine how to account for hosting fees paid to a third-party service provider. ASC 350-40-30-1(a) requires the capitalization of "[e]xternal direct costs of materials **and services consumed** in developing or obtaining internal-use computer software" (emphasis added).

Because hosting an entity's software is a form of service provided by a third party, there may be instances in which hosting fees constitute a service consumed in connection with application development. Such instances would be limited to when the hosting fees are (1) directly attributable to the cloud environment used to develop the internal-use software in the hosted environment and (2) solely related to the consumption required to develop the internal-use software. For example, if a company procured a dedicated development environment with a third-party hosting service provider that was solely used to develop internal-use software, the incremental fees for hosting services consumed during the application development stage would be considered direct costs of the internal-use software being developed and would therefore be capitalized (as services consumed in the development of internal-use software). Entities will have to use significant judgment to determine whether hosting fees are directly and solely attributable to the internal-use software being developed.

The table below summarizes the different activities performed and the related accounting for costs incurred for cloud migrations based on the nature of the activities and the scope conclusion.

Type of Activity	Development or Purchase of Internal-Use Software Hosted by the Entity or a Third Party	Implementation of a Cloud Computing Arrangement That Is a Service Contract
Planning activities	Costs expensed as incurred	Costs expensed as incurred
Hosting	Costs generally expensed as incurred (see above)	Costs deferred only if prepayments are made; otherwise, expensed as incurred
Configuration of hosted software that is a service contract	N/A	Costs deferred, presented with prepaid expenses, and recognized over the applicable service period
Internal-use software development (e.g., rebuilding or replacing code)	Costs capitalized on the basis of their nature	N/A
Modification of internal-use software code to adapt to the cloud (e.g., replatforming or refactoring)	Costs capitalized on the basis of their nature if new functionality is added; otherwise, expensed as incurred	N/A
Customization of hosted software that is a service contract	N/A	Costs deferred, presented with prepaid expenses, and recognized over the applicable service period
Data conversion or validation	Costs expensed as incurred unless the entity is obtaining internal-use conversion software	Costs expensed as incurred unless the entity is obtaining internal-use conversion software
Training, indirect overhead, business process reengineering, general and administrative activities	Costs expensed as incurred	Costs expensed as incurred
Upgrades to internal-use software after completion	Costs capitalized on the basis of their nature if new functionality is added; otherwise, expensed as incurred	N/A
Operation and maintenance after completion	Costs expensed as incurred	Costs expensed as incurred

Impact on Existing Capitalized Software Costs

Entities that migrate applications to the cloud should also carefully evaluate the impact on existing capitalized software costs. ASC 350-40 provides that significant changes in the extent or manner in which software is used or significant changes made to the software could require an entity to evaluate the capitalized costs for impairment in accordance with ASC 360. In addition, some significant changes may make it necessary for an entity to reassess the amortization period.

Some cloud migrations might not affect how the associated software is being used. For example, an entity may rehost its internal-use software with a third-party hosting service provider and make minimal changes to the underlying software or the manner in which the entity uses that software. In this instance, the entity may conclude that it does not need to evaluate the software for recoverability because there is no substantive change in the extent or manner in which the software is used.

However, in many cloud migrations, entities may make significant changes to existing internal-use software or implement new cloud-based technologies that replace or augment existing internal-use software. These instances will require entities to use judgment to determine whether capitalized costs should be assessed for recoverability.

Example 4

Company M's human resources (HR) department uses an out-of-the-box on-premise HR software product (Software X) that M licenses from Vendor P for a five-year term and implements on January 1, 20X1. Software X contains different modules for features such as storing employee data, administering benefits, and tracking employee compliance. Software X was originally determined to have a five-year useful life (equal to the license term).

Having grown its workforce substantially, M determines that it requires more advanced HR software. On July 1, 20X3, M engages Vendor S to obtain all of its HR solutions as part of a SaaS arrangement. The SaaS arrangement will commence on a staggered basis for different modules, with the first module expected to go live on January 1, 20X4, and all modules going live by December 31, 20X4. Once the SaaS for all modules is live, M will discontinue using Software X.

On July 1, 20X3, M determines that there has been a significant change in the extent or manner in which it will use Software X. Company M evaluates Software X for recoverability as of July 1, 20X3, and updates Software X's expected useful life (at the individual module level).

Example 5

Assume the same facts as in Example 4 except that rather than engaging Vendor S for its SaaS on July 1, 20X3, Company M switches to Vendor P's cloud version of Software X that P offers as SaaS (i.e., a hosting arrangement that is a service contract). The functionality of P's cloud version of Software X is substantially the same as that of the on-premise version. Vendor P offers M a credit for the unused portion of the Software X term license originally provided (i.e., 50 percent of the original license fee is provided to M as a credit toward the future SaaS), and M will pay an incremental fee for the SaaS offering.

Company M concludes that Software X is not impaired because (1) M is continuing to use Software X in a manner similar to how it used that software before converting to P's SaaS offering and (2) P is providing M a credit for the unused portion of the Software X term license. However, because Software X is no longer considered internal-use software, M may reasonably reclassify the costs capitalized (net of accumulated amortization) for Software X to the same line item on the balance sheet as that of prepaid expenses since the carrying value of Software X is akin to a prepayment made for P's SaaS offering. Company M will subsequently present the related amortized costs in the same line item as that of the other hosting fees paid to P for the SaaS offering.

Where to Find Additional Information

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