**Technology Alert**
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# Technology Highlights

## Challenges Associated With Applying the New Revenue Standard: Highly Variable or Uncertain Pricing

*by Sandie Kim, Jeff Jenkins, Mohana Dissanayake, and Michael Wraith, Deloitte & Touche LLP*

For public entities, the new revenue standard (ASC 606[1]) became effective for annual reporting periods beginning after December 15, 2017. The standard is effective for all other entities for annual reporting periods beginning after December 15, 2018. Early adoption is permitted for annual reporting periods beginning after December 15, 2016.

While ASC 606 will affect organizations differently depending on their facts and circumstances, we have identified certain aspects of its application that are especially challenging for technology companies. This *Technology Alert* is part of a series intended to help technology entities better understand the new guidance, particularly private organizations that are currently adopting the standard's requirements.

## Executive Summary

ASC 606 generally requires entities to allocate a contract's transaction price among distinct performance obligations by using the relative stand-alone selling price (SSP) of each distinct performance obligation. However, certain goods or services can be sold for a wide range of prices, which may make it difficult to establish the SSPs. This is especially true in the software industry, in which incremental costs incurred to sell additional software licenses are often minimal, thus allowing entities to sell their software at a wide range of discount prices or even premiums. Such pricing practices present challenges when entities attempt to determine the SSP by using traditional models that depend on the identification of consistent pricing practices in observable historical sales transactions. To address these challenges, the FASB established the residual approach  as a means of determining the SSP and noted that in these types of situations, such an approach[2] will often be "the most reliable way of determining the [SSP]."[3]

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

2 The residual approach in ASC 606 is different from the "residual method" in ASC 985-605, which is used to determine the amount of revenue to be recognized for delivered elements in certain software arrangements (if there is vendor-specific objective evidence of the selling price for the undelivered elements).

3 See paragraph BC271 of FASB Accounting Standards Update (ASU) No. 2014-09, *Revenue From Contracts With Customers*.

The questions and answers (Q&As) below address a number of challenges associated with the residual approach, including (1) determining when its use is appropriate, (2) deciding whether an entity must reassess the appropriateness of its use in each reporting period, and (3) identifying material rights in contracts that include highly variable or uncertain pricing for optional future goods or services.

## Interpretive Guidance

### Q&A 1 Appropriateness of Using the Residual Approach

#### *Question*

When is it appropriate to use the residual approach?

#### *Answer*

Under ASC 606, an entity must maximize the use of observable inputs but is not required to use a particular method to determine the SSP. However, various criteria must be met for the residual approach to be applied, including those discussed below.

#### *Pricing Is Highly Variable or Uncertain*

ASC 606-10-32-34(c) indicates that the residual approach may be used only if the selling price of a good or service (or bundle of goods or services) meets either of the following conditions:

- The selling price is **highly variable**. This is the case when an "entity sells the same good or service to different customers (at or near the same time) for a broad range of amounts" so that a single-point estimate of SSP or even a sufficiently narrow range of values representing SSP is "not discernible from past transactions or other observable evidence." For example, the selling price of a software product may be highly variable if an entity has historically sold the software product for prices between $1,000 and $20,000 and there is no discernable concentration around a single price, range of prices, or other metric.
- The selling price is **uncertain**. This is the case when an "entity has not yet established a price for [a] good or service, and the good or service has not previously been sold on a standalone basis."

In determining whether one of the above conditions is met, an entity should disaggregate (i.e., stratify) its selling prices into different populations to the extent that pricing practices differ for each population. In doing so, the entity should take into account market conditions, entity-specific factors, and information about the customer or class of customer (e.g., by product, by geography, by customer size, by distribution channel, or by contract value). However, the entity should also consider whether there are enough data points for it to determine a meaningful SSP relative to its pricing practices.

#### *The Allocation Objective Is Met*

In addition to assessing whether one of the two pricing conditions above has been met, an entity must determine whether the resulting amount allocated to a performance obligation under the residual approach satisfies the allocation objective in ASC 606-10-32-28 (i.e., an allocation that depicts the amount of consideration to which an entity expects to be entitled in exchange for a good or service). If the application of the residual approach to a particular contract results in either an SSP that is not within a range of reasonable SSPs or an outcome that is not aligned with the entity's observable evidence, use of the residual approach would not be appropriate even if one of the conditions in ASC 606-10-32-34(c) is met. An entity should use all available information to determine whether the SSP is reasonable, which may include an assessment of market conditions adjusted for entity-specific factors. When such an analysis results in a highly variable or broad range and the residual approach is used to estimate the SSP, this observable information should still be used to support the reasonableness of the resulting residual amount. In addition, as the FASB states in paragraph BC273 of ASU 2014-09, "if the residual approach in paragraph 606-10-32-34(c) results in no, or very little, consideration being allocated to a good or service or a bundle of goods or services, the entity should consider whether that estimate is appropriate in those circumstances."

The requirement that the amount allocated to a performance obligation under the residual approach must meet the allocation objective is not the same as the previous requirement under legacy GAAP in ASC 985-605 related to the use of a stated renewal rate to establish vendor-specific objective evidence of the selling price. Under ASC 985-605, the determination of whether an amount or rate is substantive was often made by comparing the stated renewal rate to industry norms and historical rates, including evaluating whether the rates were within a reasonable range. While the guidance in ASC 606 on determining the SSP is not aligned with ASC 985-605, we nevertheless believe that they are similar because in both cases, the SSP must be substantive. That is, the SSP must be consistent with a vendor's normal pricing practices.

### *There Are Observable SSPs for Other Goods or Services in the Contract*

The residual approach is applied by subtracting observable SSPs from the total transaction price and allocating the remainder (i.e., the residual) to the performance obligation or obligations for which pricing is highly variable or uncertain. Accordingly, for an entity to apply the residual approach to a contract containing performance obligations whose pricing is highly variable or uncertain, that contract must include at least one performance obligation for which the SSP is observable. If a contract contains multiple performance obligations with pricing that is highly variable or uncertain, a combination of approaches (including the residual approach) may be necessary as described in ASC 606-10-32-35. For more information about allocating the transaction price under the residual approach when the pricing of more than one good or service in a licensing contract is highly variable or uncertain, see Deloitte's June 12, 2019, *Technology Alert*.

The examples below illustrate the application of the concepts described above.

**Example 1-1**

Entity S licenses its software to customers for terms ranging from one to five years. Along with its software licenses, S frequently sells other services such as postcontract customer support (PCS), professional services, or training, and it has observable SSPs for such services. Taking into account market conditions, entity-specific factors, and information about customers or classes of customers, S stratifies its historical software sales data. It analyzes the pricing of stand-alone license transactions as well as the pricing of the software when sold with other goods or services and determines the following:

- Fifteen percent of software transactions are priced between $150 and $1,200.
- Thirty-five percent of software transactions are priced between $1,201 and $1,800 (plus or minus 20 percent concentration around a midpoint).
- Thirty percent of software transactions are priced between $1,801 and $2,700 (plus or minus 20 percent concentration around a midpoint).
- Twenty percent of software transactions are priced above $2,700.

There are no discernable concentrations within the above ranges.

**Question**

Is it reasonable for S to use the residual approach to determine the SSP of its software license?

**Answer**

Yes.

On the basis of an analysis of the available observable data, including appropriate stratification of that data, S may conclude that it sells software licenses for a broad range of amounts and that therefore there is no discernible SSP. Accordingly, the selling price of software licenses is highly variable. In addition, there are observable SSPs for the other services in S's contracts. If the resulting allocation under the residual approach meets the objective in ASC 606-10-32-28, the use of that method is acceptable.

### Example 1-2

Assume the same facts as Example 1-1 except that in this case, the software vendor, Entity K, determines the following:

- Fifteen percent of software transactions are priced between $150 and $1,200.
- Sixty-five percent of software transactions are priced between $1,201 and $1,800 (plus or minus 20 percent concentration around a midpoint).
- Fifteen percent of software transactions are priced between $1,801 and $2,700 (plus or minus 20 percent concentration around a midpoint).
- Five percent of software transactions are priced above $2,700.

Entity K determines that enough data points exist for it to conclude that there is a sufficient concentration of selling prices between $1,201 and $1,800.

**Question**

Is it reasonable for K to estimate the SSP of its software license by using its historical software data rather than by using the residual approach?

**Answer**

Yes.

While K sells software licenses for a broad range of amounts, there is a discernible range of SSPs given the sufficient concentration of selling prices between $1,201 and $1,800. Accordingly, K may conclude that the selling price of its software license is not highly variable or uncertain.

For more information about establishing SSP as a range, see Deloitte's December 14, 2018, *Technology Alert*.

### Example 1-3

Entity B licenses its software to customers for terms ranging from one to five years. Along with its software licenses, B frequently sells other services such as PCS, professional services, or training, and it has observable SSPs for such services. Taking into account market conditions, entity-specific factors, and information about the customer or class of customer, B stratifies its historical software sales data and analyzes the pricing of stand-alone license transactions as well as the pricing of the software when sold with other goods or services. Entity B determines that the vast majority of its software transactions are priced between $500 and $2,400 and that there are no discernable concentrations within that range. Further, the selling-price range is consistent with B's normal pricing policies and practices.

Entity B concludes that it is appropriate to use the residual approach to estimate the SSP of its software license in contracts that contain other services. In a few of its contracts, application of the residual approach results in the allocation of between $0 and $50 to the software license performance obligation.

**Question**

Is it reasonable for B to use the residual approach to determine the SSP of the software license for those contracts for which the residual approach results in the allocation of between $0 and $50 to the software license performance obligation?

**Answer**

No.

Even though the selling price for the software license is highly variable, the allocation objective in ASC 606-10-32-28 is not met. This is because the amount allocated to the software license in a given transaction ($0 to $50) does not faithfully depict "the amount of consideration to which the entity expects to be entitled in exchange for transferring the promised goods or services to the customer."

Since B typically prices its software between $500 and $2,400 and has no substantive history of selling software licenses for a price below $50 (i.e., such pricing is not indicative of its normal pricing policies and practices), those amounts do not represent substantive pricing. Accordingly, B must use another method or methods to determine the SSP of its software license performance obligations.[4] This conclusion is consistent with that in Case C in Example 34 in ASC 606-10-55-269. By contrast, if B's application of the residual approach resulted in the allocation of between $500 and $2,400 to software license performance obligations, use of the residual may be reasonable since these amounts appear to be within B's normal pricing policies and practices.

[4] One method may be to use the range of observable pricing in other transactions for which the SSPs were determined to be reasonable and in line with B's normal pricing policies and practices.

## Q&A 2 Reassessment

### *Question*

Is an entity required to reassess whether the residual approach remains appropriate prospectively?

### *Answer*

Yes.

ASC 606 requires entities to maximize the use of observable data in determining an SSP. The observable data available for a good or service may change over time. In addition, an entity's pricing practices may change as a result of market or entity-specific factors. Therefore, the appropriateness of the residual approach for a particular good or service may also change from one period to another. For example, an entity may implement pricing policies that cause the price of a good or service that was previously highly variable to become consistent enough for an SSP to be estimated (either as a point estimate or a range).

Entities that use the residual approach to determine an SSP should continually assess whether its use remains appropriate prospectively. In making this determination, entities should monitor and consider entity-specific and market conditions. A change from the residual approach to another method for determining an SSP should be accounted for prospectively, and corresponding changes may need to be made to disclosures about the determination of the SSP and allocation of the transaction price (e.g., ASC 606-10-50-17).

## Q&A 3 Material Right

### *Question*

Is an entity required to assess whether a customer option to purchase additional goods or services conveys a material right to the customer when the residual approach was used to establish the SSPs of the goods or services that are subject to the option?

### *Answer*

Yes.

Under ASC 606-10-55-41 through 55-45, a customer option to purchase additional goods or services gives rise to a material right if the option gives the entity's customer a discount that is incremental to the range of discounts typically given for those goods or services to that class of customer (e.g., a customer in a particular geographical area or market). It would not be appropriate for the entity to conclude that no material right was conveyed to the customer simply because the selling prices of the goods or services that are subject to the option are highly variable or uncertain and the residual approach was therefore applied.

## Q&A 4 Identification of Material Right

### *Question*

How should an entity determine whether a customer has obtained a material right as a result of the pricing of an optional future purchase of a good or service for which the entity used the residual approach to determine the SSP (i.e., pricing is highly variable or uncertain)?

### *Answer*

When the residual approach is used to determine the SSP of a good or service because pricing is highly variable or uncertain, an entity may need to use significant judgment when assessing whether option pricing for that good or service provides a material right because of the lack of a point estimate or sufficiently consistent range representing the SSP. While we believe that entities are likely to identify fewer material rights in such cases, they are nonetheless required to base their determination of whether a material right was provided on all reasonably available information. Although the presence of highly variable or uncertain pricing complicates the identification of material rights, we believe that when doing so, an entity should consider (1) the definition of a material right[5] and (2) the allocation objective in ASC 606-10-32-28. In other words, an entity must determine whether the pricing of the optional good or service (1) indicates that preferential pricing would not have been received "but for" the initial contract or (2) reflects the amount to which the entity expects to be entitled in exchange for transferring that good or service to the customer. If the pricing does not meet the allocation objective (i.e., it is a discount that is incremental to what other similar customers would receive), a material right should be identified. We believe that an entity might find the following factors useful in determining whether a material right is present when the pricing of optional future purchases is highly variable or uncertain:

- How the pricing of the optional future purchase aligns with current pricing policies and practices. For example, if a good or service is not typically sold below a certain amount because it is a premium offering, an option to buy that good or service at an amount below that floor would be at odds with standard pricing practices and may therefore convey a material right to the customer.
- How the pricing of the optional future purchase compares to historical amounts allocated to the good or service in similar situations. Such a comparison is likely to require an entity to look to historical data and SSPs that were derived by using the residual approach. Accordingly, while there will not be an established point estimate or narrow range of SSPs against which to compare the pricing of the optional future purchase, ASC 606-10-32-34(c) indicates that the residual approach is a method of establishing SSP. Therefore, the amounts determined under that approach represent the SSP for that good or service.[6] Consequently, we believe that in assessing whether a customer has been given a material right, an entity may obtain useful information by comparing the pricing of an optional future purchase with historical SSPs that were determined as a result of applying the residual approach. In addition, to determine which range of historical SSPs to compare with the pricing of the optional future purchase, entities should consider only those transactions that are similar to the transaction in question. For example, an entity might disaggregate historical SSP data by one or more of the following characteristics: class of customer, geography, distribution channel, or contract value.
- How the pricing of the optional future purchase compares to historical contractually stated pricing (if any) of the good or service in similar situations. While the contractually stated pricing may not represent the SSP (see ASC 606-10-32-32), it may be indicative of an entity's pricing practices and discounts it may offer on future purchases.
- Whether the pricing of the optional future purchase is intended to incorporate a discount. If the intent during negotiations was to give the customer a discount on future purchases, a material right may exist since the allocation objective is less likely to be met in such cases. For example, a customer may only have agreed to enter into an initial contract if the vendor offered discounted pricing on future purchases.
- Whether the pricing of the optional future purchase is discounted relative to (1) the price of similar goods or services sold under the initial contract or (2) the list price when compared with the discounted list prices of all goods or services (whether similar or not) sold under the initial contract. We acknowledge that this factor conflicts with the FASB's reasons for departing from its definition of a significant incremental discount in legacy GAAP under ASC 985-605. In paragraph BC387 of ASU 2014-09, the Board indicates its rationale for defining "incremental" solely by reference to other comparable transactions:

  > [T]he Boards observed that even if the offered discount is not incremental to other discounts in the contract, it nonetheless could, in some cases, give rise to a material right to the customer. Consequently, the Boards decided not to carry forward that part of the previous revenue recognition guidance from U.S. GAAP into Topic 606.

  However, we believe that when evaluated in conjunction with all other available evidence, a comparison of the pricing of the optional future purchase with any discounts offered in the initial contract may provide insight into an entity's pricing practices and discounting intentions.
- How the pricing of the optional future purchase aligns with any intended future pricing for similar goods or services. For example, an option to buy add-on software at a set price may not give the customer a material right if that price approximates the amount at which management intends to sell that software on a stand-alone basis in the near future.

[5] A material right arises from pricing on an option to acquire additional goods or services in the future that would not have been received if the initial contract had not been entered into. In such cases, the customer with the option has essentially prepaid for the future purchase.

[6] This is the case if the entity has determined that the output of the residual approach is reasonable because it is consistent with the allocation objective in ASC 606-10-32-28.

- The relative negotiating power of the entity and the customer. In certain situations, customers may have a greater ability to demand discounted pricing on optional future purchases if the customers represent significantly larger, well-known brands that are dominant in their markets, are more mature, or are otherwise better positioned than the entity selling the goods or services.

The above factors are not intended to be all-inclusive or prescriptive, and each factor on its own may not be determinative. Entities may need to use significant judgment when determining whether a material right has been granted. Entities with highly variable or uncertain pricing should establish a policy for evaluating material rights and apply that policy consistently in similar situations.

The examples below demonstrate the application of some of the concepts described above.

**Example 4-1**

Entity J, an early-stage software developer, enters into an arrangement with Customer T, a large U.S.-based company, to license its software on a term basis and provide PCS for one year. The arrangement also includes hardware and professional services. The total transaction price is $2 million, and J has established that the license, PCS, hardware, and professional services each represent a distinct performance obligation.

Entity J has concluded that the pricing of software licenses is highly variable and uses the residual approach to determine the SSP. The observable SSPs of the other performance obligations are as follows:

- PCS — $200,000.
- Professional services — $500,000.
- Hardware — $300,000.

Under the residual approach, $1 million is allocated to the software license, which J determines is consistent with the allocation objective. The contract also indicates that the customer may renew the software license for $250,000 per additional year and that the pricing for other products and services will be at their SSPs.

Entity J reviews historical transaction data for sales of software licenses to large customers in the United States to determine the amounts that have been allocated to the software license under the residual approach. Over the past year, a range of $500,000 to $3 million has been allocated to the software license, which is consistent with J's pricing policies. While J did not initially intend to give T a discount, it was willing to negotiate on renewal pricing because it wanted to secure the large contract and is able to enhance the marketability of its products by obtaining T as a customer (T is a well-known brand and dominant in its market). Therefore, J concludes that the pricing of the optional future purchase has given T a material right.

**Question**

Can J's approach be considered a reasonable basis for its conclusion that the pricing of the optional future purchase has given T a material right?

**Answer**

Yes.

We believe that the following factors indicate that T has received a material right:

- A comparison of (1) the price T must pay if it exercises its option to renew the license in the future ($250,000) and (2) the range of SSPs determined under the residual approach in similar historical transactions ($500,000 to $3 million) indicates that the pricing offered to T does not meet the allocation objective because T is receiving a significant discount that is incremental to the range of discounts offered to other similar customers.
- Although J did not initially intend to give T a discount on future purchases, other facts and circumstances indicate that J nonetheless offered T preferential pricing.

**Example 4-2**

Entity A enters into an arrangement with Customer C, a mid-sized company based in Europe, to license its software on a term basis and provide PCS for one year. The arrangement also includes hardware and professional services. The total transaction price is $20,000, and A has established that the license, PCS, hardware, and professional services each represent a distinct performance obligation.

Entity A has concluded that the pricing of software licenses is highly variable and uses the residual approach to determine the SSP. It has observable SSPs for its other products and services. The list prices, contractually stated prices, discounts from list price, and SSPs of each performance obligation are as follows:

| Performance Obligation | List Price | Contractually Stated Price | Discount From List Price | SSP |
|---|---|---|---|---|
| License | $ 7,500 | $ 4,500 | 40% | $ 5,000* |
| PCS | $ 3,500 | $ 3,500 | 0% | $ 3,000 |
| Professional services | $ 8,000 | $ 5,000 | 38% | $ 6,000 |
| Hardware | $ 10,000 | $ 7,000 | 30% | $ 6,000 |
| **Total** | $ 29,000 | $ 20,000 | 31% | $ 20,000 |

* Determined under the residual approach on the basis of a total transaction price of $20,000 minus the sum of the observable SSPs of the other performance obligations ($3,000 + $6,000 + $6,000 = $15,000).

The contract also indicates that the customer may renew the software license for $3,000 per additional year, which represents a 60 percent discount from the list price, and that the pricing for other products and services remains at the same contractually stated prices.

Entity A reviews historical transaction data for sales of software licenses to mid-sized customers in Europe to determine the contractually stated prices and related discount from list price for the software license. Over the past year, the software license has been priced between $1,000 to $20,000, thus ranging from a discount of 87 percent to a premium of 167 percent relative to the list price. Entity A's internal pricing policies require that discounts of over 50 percent must undergo an extensive approval process. Further, A intended to give C a discount on renewals of the software license because A is in a highly competitive market in which customer retention is difficult. In addition, C indicated that it would purchase large additional amounts of hardware. Therefore, A concludes that the pricing of the optional future purchase gives C a material right.

**Question**

Can A's approach be considered a reasonable basis for its conclusion that the pricing of the optional future purchase has given C a material right?

**Answer**

Yes.

We believe that the following factors indicate that C has received a material right:

- It is not especially meaningful to compare (1) the discount to the list price C receives if it exercises its option to renew the license in the future (60 percent) with (2) the range of discounts and premiums in similar historical transactions (87 percent discount to 167 percent premium) given the significant pricing variation observed in that data. However, A's internal pricing policies require any discounts of over 50 percent undergo an extensive approval process.
- On the basis of a comparison of (1) the discount from list price for the renewal pricing (60 percent) with (2) the other discounts offered in the same contract (0 percent to 38 percent for other goods and services and 40 percent for the same software license), A determines that the optional future purchase pricing conveys an incremental discount to C that it did not receive under the initial contract.
- Entity A's intention to give C a discount to secure its future business in a competitive market supports a conclusion that "but for the initial contract," C would not have received favorable pricing on future software license renewals.
- Customer C's indication that it would make many additional purchases of hardware supports A's decision to provide preferential pricing.

## Contacts

**Sandie Kim**
Audit & Assurance Partner
National Office Accounting and Reporting Services
Deloitte & Touche LLP
sandkim@deloitte.com

**Jeff Jenkins**
Audit & Assurance Senior Manager
National Office Accounting and Reporting Services
Deloitte & Touche LLP
jejenkins@deloitte.com

**Mohana Dissanayake**
Audit & Assurance Partner
U.S. Technology, Media & Telecommunications Industry Leader
Deloitte & Touche LLP
mdissanayake@deloitte.com

**Michael Wraith**
Audit & Assurance Partner
U.S. Technology Industry Professional Practice Director
Deloitte & Touche LLP
mwraith@deloitte.com