Hot Topic: Digital assets

Accounting for staking rewards

August 2022

This Hot Topic explores the accounting for staking rewards by validators and delegators.

Introduction

Two KPMG Executive Summaries provide a high-level overview of the accounting for 'crypto assets' that meet the definition of an intangible asset (crypto intangible assets) under US GAAP:

— Accounting for crypto assets – entities that are not broker-dealers or investment companies; and
— Accounting for crypto assets – investment companies.

The latter Executive Summary also addresses whether staking activities affect an entity's designation as an investment company and includes considerations for those entities about presenting and disclosing staked crypto intangible assets and staking rewards revenue. In this Hot Topic, we explore the accounting for rewards earned by entities for staking their crypto intangible assets.

There is currently no explicit US GAAP that directly addresses the accounting for digital assets. In addition, the accounting for staking and many other digital asset-related activities, as well as the activities themselves, continue to evolve and frequently differ by blockchain. Therefore, the views we express herein may not be the only acceptable views, or the only views currently being applied in practice. Our perspectives may change as practice evolves, the FASB establishes US GAAP in this area or if the SEC staff expresses views. We encourage entities to discuss their digital asset accounting and specific facts and circumstances with their auditors or other accounting advisors.

Applicability

All entities that stake crypto intangible assets; including both:

— validators; and
— delegators.

Key concepts

The following key concepts underlie this Hot Topic.

Concept	Application in this Hot Topic
Proof of stake	A blockchain consensus mechanism (or consensus protocol) in which only holders of the blockchain's native digital asset are permitted to validate transactions on the blockchain.
Staking	The act of posting digital assets as collateral to a proof-of-stake (PoS) blockchain network either as (1) a 'validator' or (2) a 'delegator'.
Node	A device connected to the blockchain that maintains a full or partial copy of the blockchain. The node operator is the blockchain participant (e.g. an individual or entity) that operates the node.
Validator	A blockchain participant (e.g. an individual or entity) that verifies transactions on a PoS blockchain as part of the blockchain's consensus mechanism. Validators generally must be node operators to sign blocks of transactions as valid.
Delegator	An individual or entity that stakes its digital assets with a trusted validator instead of operating a node and validating blockchain transactions itself.
Burning	The act of permanently removing a digital asset token from circulation.
Bonding (unbonding) period	On some blockchain networks, a bonding period may be required before a staking entity can earn staking rewards; the bonding period establishes the entity's commitment to the network before the entity can begin to earn staking rewards. When an entity elects to de-stake digital assets, an unbonding period may apply. During this period, the entity typically no longer earns staking rewards on the de-staked digital assets, but cannot sell (or otherwise transfer) those tokens. A delegator may, depending on the blockchain, be permitted to redelegate its de-staked tokens during the unbonding period. Some blockchains use different, but analogous, terms to refer to bonding or unbonding periods – e.g. warm-up or cooldown periods, respectively. By contrast, on some other blockchains, warm-up and cooldown periods may be different from bonding or unbonding periods.
Transaction fees	Transaction fees are paid by the transaction initiator. For example, if Participant A wants to send 100 crypto units to Participant B, A may need to post more than 100 crypto units (e.g. 101 or 102 units) to pay the transaction fee and have B receive 100 crypto units. Transaction fees vary by blockchain, both in (1) terms of amount and (2) how they are distributed. In some blockchain networks, the transaction validator receives the entire fee. In others, the validator may receive only some or none of the fee because the blockchain's protocols (1) burn all or a portion of the fee or (2) use all or a portion of the fee to pay staking rewards.
Staking rewards	This term generally refers to tokens, typically of the blockchain's native token, awarded to those participating in validating transactions on the blockchain. Staking rewards may be comprised of either, or both, newly minted tokens (often referred to as inflationary rewards) or redistributed transaction fees.

Concept	Application in this Hot Topic
Slashing	Slashing refers to losing a portion of one's staked digital assets on a PoS blockchain for misbehavior. Examples of misbehavior include excessive downtime (i.e. the validator is unavailable to validate transactions) and double signing (i.e. signing two blocks simultaneously). In some validator-delegator arrangements, the validator agrees to reimburse any slashed tokens of its delegators.
Epoch	On a blockchain network, a defined period of time (which may be described in terms of a number of activities or actions, instead of a time interval) used to specify when blockchain events occur, such as when new validators are assigned or staking rewards distributed. The epoch duration varies by blockchain but is often a few days. 'Era' is another term used by some blockchains that has a similar meaning.

Accounting for staking rewards

This section of the Hot Topic is divided into the following subsections aligned to key decision points in the accounting process.

- Accounting for staked crypto assets (tokens)
- Determining the principal to validation activities
- Accounting for transaction fees earned by a validator
- Staking rewards revenue recognition

Accounting for staked crypto assets (tokens)

Whether to derecognize staked tokens

When staking, the question arises about whether the staking entity, validator or delegator, should continue to recognize staked tokens as its own assets on its balance sheet. In general, we believe the staking entity should do so based on the analysis that follows.

Accounting guidance to apply

As intangible assets, staked tokens are derecognized by an entity only when the criteria in Subtopic 610-20 (gains and losses from the derecognition of nonfinancial assets) are met, unless a scope exception applies. [350-10-40-1, 40-3; 610-20-15-4]

- In most staking scenarios, none of the scope exceptions in Subtopic 610-20 are expected to apply (section 17.2.50 of KPMG Handbook, Revenue recognition, details these scope exceptions).
- Subtopic 610-20 relies on the control transfer guidance in Topic 606 (revenue from contracts with customers) to determine when and whether to derecognize a nonfinancial asset, such as a crypto intangible asset (sections 7.2 and 7.5 of KPMG Handbook, Revenue recognition, detail the Topic 606 control transfer guidance). [606-10-25-25, 25-30; 610-20-25-6 – 25-7]

Control evaluation

We believe the control transfer criteria in Topic 606 are typically not met for staked tokens for both of the following reasons.

— Staked tokens remain in the staking entity's wallet, and while they are staked no counterparty obtains the right or ability to direct their use (e.g. the right or ability to sell, lend or otherwise transfer them) and remaining economic benefits (e.g. the right to any appreciation in value). [606-10-25-25]

— Even *if* a counterparty was determined to obtain the right to direct the use of an entity's tokens while staked, the right of the entity to de-stake those tokens is akin to a repurchase right (i.e. a call option) on the staked tokens. Under Topic 606, control over an asset does not transfer when the transferor (here, the staking entity) has the substantive right to repurchase that asset (or a substantially equivalent asset – e.g. a fungible digital token). [606-10-55-66, 55-68]

Accounting for staked tokens

Because the staked tokens remain assets of the staking entity, it continues to account for them in the same manner as its other held tokens.

Determining the principal to validation activities

When no delegators are involved

When a validator's stake – i.e. that which earned it the right to validate transactions – does not include delegated tokens, the validator is the only party involved in the validation activities. Therefore, it must be the principal to the service of validating transactions on the blockchain. [606-10-55-36, ASU 2016-08.BC7]

The validator records the entire amount of the staking rewards to which its node is entitled for validating transactions as its own revenue (see *Staking rewards revenue recognition*).

When delegators are involved

When a validator's stake includes the staked tokens of delegators, it is necessary to determine which entity, the validator or the delegator, is the principal to the service of validating transactions on the blockchain. Is the validator providing the validation service or, instead, is the delegator providing that service (i.e. with the validator, in effect, serving as a subcontractor)? The entity's accounting for the staking rewards will differ based on that determination.

— If the **validator** is determined to be the principal to the validation activities on the blockchain:

  – the validator records the entire staking reward earned by its validator node for validating transactions as its revenue in the same manner as it records staking rewards earned on its owned tokens, and records the portion remitted to the delegator as a cost of that revenue (**gross basis**); while

  – the delegator records only the portion of the staking rewards that will be remitted to it as staking revenue (**net basis**).

— If the **delegator** is determined to be the principal to the validation activities on the blockchain:

  – the validator records staking revenue only for the portion of the staking rewards to which it is entitled (**net basis**); while

- the delegator records the entire staking reward to which its stake is entitled, *inclusive of the portion (i.e. fee or commission) that the validator will earn for operating the node*, as staking revenue, and the portion remitted to the validator as a cost of that revenue (**gross basis**).

We believe an entity should look to the principal versus agent guidance in Topic 606 to make this determination.[1] Applying the principal-agent guidance requires judgment and consideration of all relevant facts and circumstances. However, we believe the validator is typically the principal to the service of validating blockchain transactions for the reasons that follow.

- The *validator*, not the delegator, operates the node that completes the validation.
- It is the validator node that is typically selected by the blockchain protocol (algorithmically) to validate a given transaction. And at no point after this assignment and before the assigned validation occurs can the delegator withdraw its delegation to the validator. Therefore, it is *not* the case that a delegator is selected and can then assign its transaction validation right to one of multiple validators.
- The validator owns (or leases/licenses) the equipment and software necessary to operate the node; therefore, the validator has investment risk in the form of these costs it generally must recoup by earning staking rewards. The delegator has no equivalent cost risk.

In addition, depending on the blockchain and the staking service provider (or similarly titled) agreement between the validator and the delegator, one or both of the following may be true. We believe either of these, when present, strengthens a 'validator as principal' conclusion.

- The validator may agree to accept the risk of slashing from its node operations; that is, the validator may agree to compensate its delegators should they be slashed because of the validator's action(s) or inaction(s).
- It is frequently the case that staking rewards are distributed directly – via the blockchain's protocols – to the wallets of the validator and its delegators. However, in other arrangements the staking rewards may all be initially remitted to the validator's wallet, with the validator responsible for distributing those earned rewards to its delegators. The remittance order of payments is normally not important to a principal versus agent analysis; however, in these latter arrangements, we believe the initial remittance of the staking rewards entirely to the validator further supports that the blockchain network recognizes the validator as the entity responsible for fulfillment of the validation activity.

Accounting for transaction fees earned by a validator

When transaction fees are not burned by the blockchain or added to the staking rewards pool, they are generally paid to the validator of the applicable transaction; delegators typically are not entitled to any portion of them.

Any transaction fee tokens added to the staking rewards pool are accounted for in the same manner as inflationary tokens included in the pool (see *Staking rewards revenue recognition*).

We believe transaction fees earned by a validator generally reflect revenue from a contract with a customer under Topic 606 that should be recognized at the point in time the validator successfully validates the transaction to the blockchain. This view is consistent with the conclusion reached in Question 27 of the AICPA Guide for transaction fees earned by miners on a proof-of-work (PoW) blockchain (e.g. Bitcoin). See Question 27 for additional detail.

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[1] See chapter 9 of KPMG Handbook, Revenue recognition, for details and interpretive guidance.

Staking rewards revenue recognition

As an inflow of digital assets from rendering the service, or carrying out the activity, of validating blockchain transactions, we believe staking rewards generally reflect 'revenue' for a validator or a delegator. [CON 8.E80]

Revenue from a contract with a customer or 'other revenue'?

Validators

As similarly concluded for block rewards on a PoW blockchain like Bitcoin (see Question 27 of the AICPA Guide), whether staking rewards revenue earned reflects revenue from a contract with a customer under Topic 606 or 'other revenue' (which is required to be presented or disclosed separately from Topic 606 customer revenue) is based on the facts and circumstances, including the blockchain's protocols, and frequently involves judgment. However, even if the facts and circumstances suggest staking rewards revenue is other revenue, we believe analogizing to the revenue recognition guidance in Topic 606 will typically be appropriate. [606-10-50-4(a)]

Delegators

When the validator is the principal to the validation activities (which we believe is typically the case), the delegator's staking rewards revenue will generally be revenue from a contract with a customer. We believe the validator will normally qualify as a customer for the delegator's service of, in effect, lending the use of the delegator's staked tokens to the validator for the purpose of increasing the number of validations the validator gets selected to complete. Because the staked tokens are intangible assets, lending their use to the validator cannot be a lease. [842-10-15-1(a)]

Applying Topic 606

Applying Topic 606 (whether directly or by analogy) to staking rewards requires an evaluation of the specific facts and circumstances and often requires judgment. Its application may differ from one blockchain to another. This is because blockchains' staking protocols differ in ways that may affect how Topic 606 is applied (e.g. how staking rewards are calculated, when staking rewards are paid out and the existence and duration of bonding/unbonding or warm-up/cooldown periods). Delegators' revenue recognition may also be affected by the terms of their arrangements with validators (e.g. a staking service provider agreement).

The following, each discussed further below, also create complexity when applying Topic 606 to staking rewards:

- staking rewards are typically paid in the native token of the blockchain (i.e. noncash consideration); and
- the amount of the staking rewards to which an entity is entitled for validation activities is often variable.

Noncash consideration

Noncash consideration is measured at its contract inception date fair value under Topic 606; therefore, staking rewards revenue should be measured based on the fair value of the tokens to which the entity is entitled at contract inception. The difference between the tokens' fair value at (1) contract inception and (2) reward receipt (or availability for withdrawal/transfer) date does not affect the amount of staking revenue recognized. For example, if an entity earns 1 token as a staking reward, with a fair value of $100 at contract inception and a fair value of $90 when it is remitted to the entity (e.g. at the end of the

epoch), its staking rewards revenue for that validation is $100; the $10 difference does not affect recorded revenue.[2] [606-10-32-21, 32-23]

Contract inception may differ depending on the blockchain (and for a delegator, also its validator arrangement). For example, if the entity can de-stake its tokens at any time, a new contract may be deemed created with each validation the entity is assigned. By contrast, if the entity is obligated to remain staked for a defined period of time (e.g. an epoch) and is subject to slashing or other penalties for unresponsiveness or misbehavior throughout that period, the contract may be deemed to exist for that entire committed period; this would mean contract inception occurs at the start of each committed staking period instead of upon each assigned validation.

Recognition

Ignoring accounting conventions an entity may be able to adopt based on materiality, staking entities may frequently conclude that staking rewards revenue should be recognized when the amount of the staking rewards to which the entity is entitled for validations it (or for a delegator, its chosen validator) has completed becomes known or calculable (i.e. using inputs upon which the amount depends, such as the total number of tokens staked or the total circulating supply of native tokens) by the entity.

This amount may not be known or calculable by the entity at the time a validation is completed. For example, the amount may depend on inputs (see preceding paragraph) or actions (e.g. if a delegator, its validator's 'uptime' over a defined period) outside of the entity's control. When this is the case, the staking rewards may be constrained under the Topic 606 guidance on variable consideration. While variable consideration is constrained, it is excluded from the 'transaction price' and, therefore, *not* recognized as revenue.[3]

The specific facts and circumstances will affect whether and how the constraint applies to different staking scenarios; however, if the amount of staking rewards to which the entity is entitled (1) depends on inputs or actions outside of the entity's control and (2) is subject to significant variability, all of the staking rewards may be constrained until those inputs or actions become known or knowable to the entity. On some blockchains, this may not occur until well after the validation to which the reward relates is completed (e.g. the end of the 'epoch' or 'era' during which the validation occurs or even a subsequent epoch or era).

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[2] See section 5.6 of KPMG Handbook, Revenue recognition, for more information on noncash consideration.

[3] See section 5.3 of KPMG Handbook, Revenue recognition, for more information on accounting for variable consideration; section 5.3.40 specifically discusses the variable consideration constraint.

For further information

See KPMG Executive Summaries, Accounting for crypto assets – entities that are not broker-dealers or investment companies and Accounting for crypto assets – investment companies, and other digital asset Hot Topics.

This document highlights issues specific to the accounting for crypto intangible assets.

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