

Making sense of a complex world

Online gaming: Real issues in virtual worlds

This paper explores some of the key IFRS revenue recognition issues in the world of online gaming.





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Introduction to MIAG

Our Media Industry Accounting Group (MIAG) brings together our specialist media knowledge from across our worldwide network. Our aim is to help our clients by addressing and resolving emerging accounting issues that affect the entertainment and media sector.

With more than 4,200 industry dedicated professionals, PwC's global entertainment and media (E&M) practice has depth and breadth of experience across key industry sectors including: television, film, advertising, publishing, music, internet, video and online games, radio, sports, business information, amusement parks, casino gaming and more. And just as significantly, we have aligned our media practice around the issues and challenges that are of utmost importance to our clients in these sectors. One such challenge is the increasing complexity of accounting for transactions and financial reporting of results – complexity that is driven not just by rapidly changing business models but also by imminent changes to the world of IFRS accounting.

Through MIAG, PwC¹ aims to work together with the E&M industry to address and resolve emerging accounting issues affecting this dynamic sector, through publications such as this one, as well as conferences and events to facilitate discussions with your peers. I would encourage you to contact us with

your thoughts and suggestions about future topics of debate for the MIAG forum, and very much look forward to our ongoing conversations.

Best wishes



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¹ PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity

Online gaming: Real issues in virtual worlds

PwC's Global E&M Outlook 2014-2018 forecast an increase in global spending on video games from €66 billion in 2014 to €89 billion in 2018, with online gaming being one of the key drivers. Our eighth MIAG paper explores some of the key revenue recognition issues in these virtual worlds.

Video gaming encompasses not only traditional console or PC games, which have been in existence for over 20 years, but also online gaming. The significant growth of online gaming is driven partly by online players interacting with online friends and rivals, and partly by the rise of mobile gaming facilitated by increasing penetration of smartphones and tablets.

The rise of online gaming encompasses not just expensively-produced blockbusters but also low-cost mobile games. The low cost of producing certain types of games has drastically lowered barriers to entry compared with console and PC games, causing the number of game developers to explode over the past five years.

New technology platforms and new entrants have driven new business models such as 'freemium' games that are free to play but in which real cash must be spent to acquire virtual goods or other premium content. This paper considers the resulting accounting challenges in various practical examples covering principal/agent arrangements, virtual items and virtual currencies, and multiple element arrangements. Our scenarios are clearly not designed to be

exhaustive; but they will hopefully provide food for thought for online gaming companies when considering the real revenue recognition issues that arise in virtual worlds.

We hope that you find this paper useful and welcome your feedback.

Best wishes



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Background

PwC's Media Industry Accounting Group (MIAG) is our premier forum for discussing and resolving emerging accounting issues that affect the entertainment and media sector – visit our dedicated website: www.pwc.com/miag

What are the most common online gaming business models?

Online games can be categorised by how they are monetised (i.e. how the game enjoyment experience is sold), and by game type and genre.

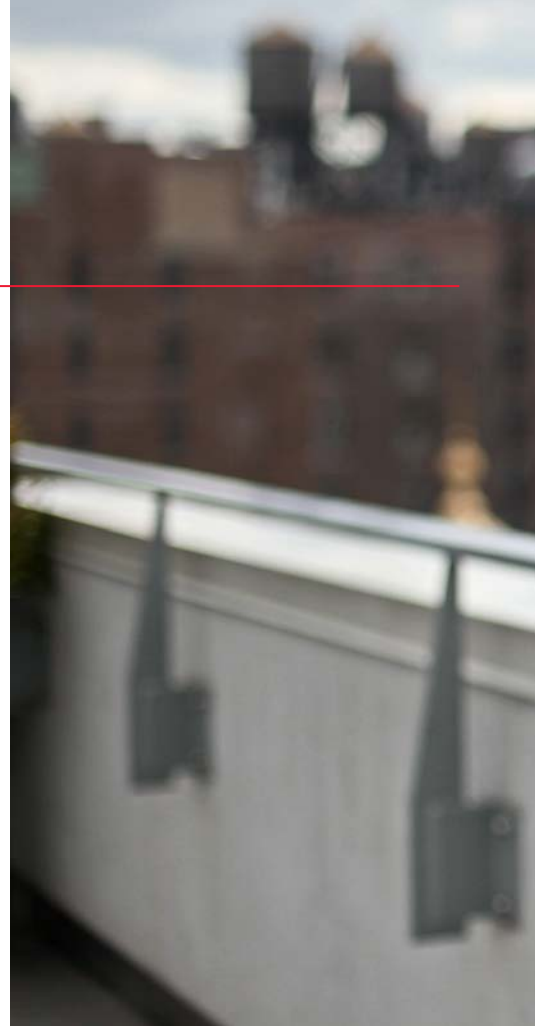
- **Monetisation:** Subscription-based games are monetised by either a periodic subscription fee, a download fee or other usage fee. Non-subscription-based games are typically free to play ('freemium') but are monetised through the sale of virtual items or other premium content to the game player ('gamer'). Successful monetisation of a freemium game involves creating a gaming experience where players are incentivised to spend money on virtual items that enhance overall enjoyment. A virtual item represents either the digitisation of a real-world product (e.g. virtual hat) or a digital concept with its own meaning within the game (e.g. power, magic, special ability).
- **Game types:** Games can be for a single player (solo) against pre-scripted rules or for multiple players in a world designed to foster collaboration and/or competition. The types of online games can be summarised in many different ways but perhaps most commonly as follows:
 - **Large multi-player games** – often termed 'massive multi-player online

games' (MMOGs), these games are characterised by longer playing periods and high game intensity. The gamer makes a significant emotional and/or cognitive investment in the game, and game play may last for a few hours per session, with many such sessions. These games are typified by the virtual gathering of multiple players in the same online environment (via internet connection), with gamers often cooperating or competing in the context of an epic adventure or thematic experience. MMOGs typically require dedicated software to be downloaded through which the game is delivered and played on computer screens of video game consoles. Large multi-player games can be delivered on a subscription or non-subscription basis.

- **Web games** – also known as browser game, these games are played over the internet via a web browser, generally on PC. Web games include all game genres (such as hardcore games, midcore games, casual games, social games etc.) and can be single-player or multi-player. Unlike MMOGs that attract more hardcore players, web games appeal to a wide spectrum of age groups and demographics due to easy and free access. Also, they are often played in more frequent, shorter

sessions compared to traditional MMOGs. One popular type of web games are those social games played on social network platforms. Web games typically do not require any software installation apart from a web browser or sometimes browser plug-in. Web games are often free-to-play but players can choose to purchase virtual items to enhance the game-playing experience (the 'freemium' model).

- **Mobile games** – are those games played on smartphones, tablets, PDAs and other mobile devices. They share a lot of the same characteristics as web games, such as that they include all game genres, can be single-player or multi-player, and appeal to a broader audience. However, mobile games are even easier to access than web games so people tend to play in even more frequent and shorter sessions. Due to the limitations of the screen, mobile games tend to be less complex and include more casual games and social games. Unlike web games, mobile games require the installation of software known as the application ('app'). Apps are generally downloaded by players





from mobile app stores but sometimes are pre-installed by mobile carriers and mobile device makers. Mobile games can be played both online and offline. The pay-per-download model is most common but subscription-based and freemium model are also becoming more popular. With the development of cross-platform delivery of content, publishers are increasingly delivering a seamless connection between web games and mobile games. Gamers are able to play their chosen games on both their computers and their mobile devices.

- **Game genres:** Within both single – and multi-player online games there are numerous genres including action, sports, mystery, fantasy, adventures, science fiction, and so on. Often, the game environment is adapted from a popular trademark (brand), book or movie with the right to use such intellectual property licensed from another party.

Who have the key roles in delivery?

Delivery of an online game to paying and non-paying players often involves the following roles. These different roles can be carried out by different entities or one entity may serve one of more of the roles.

- **Game developers** combine programmers, graphic artists and other specialists to develop the code and intellectual property (IP) underlying a game. Game developers may be involved in post-release game upgrade, maintenance, and bug-fixing activities. Game development used to be mostly an in-house function of a fully integrated gaming company that also markets, distributes, operates games and supports game customers. Today, there are more and more studios and individuals focused exclusively on game development.
- **Game publishers** release the game code by selling DVDs or making the game available for access on the internet or storefronts. Game publishers may use their own IT infrastructure connected to the internet, or they may use a delivery intermediary. Game publishers may also be responsible for marketing,

game maintenance, and providing customer service functions (e.g. call centre, player support, online forum).

- **Distribution channels and intermediaries** are other parties involved in this gaming ecosystem. For mobile and some web games, the distribution channel might be the publisher. These intermediaries include:
 - Storefronts such as the Apple App Store, Google Play or Amazon Appstore (for Android) are distribution channels that have direct access to end users;
 - Other delivery intermediaries providing e.g. IT infrastructure; social websites; and online portals and other commercial websites that allow access to the game; and
 - Payment intermediaries that facilitate payment transactions between a gamer and another party. These include credit card payment processors, distributors of prepaid cards or online payment service providers such as Paypal. Payment functions can also be provided by storefronts and delivery intermediaries.



The arrangements will be different for different types of games. Operations in different territories may also differ. For example, in traditional MMOGs, there are typically only two main parties involved in providing game service to end users. Game developers focus on research and development as well as the creation and upgrade of the games. Game publishers license the games from the developers and are responsible for distribution, marketing and operations of the games. Occasionally, the publisher and the developer is the same company. However, the operation of a web game or mobile game generally involves more parties. In addition to game developers and publishers, mobile app stores, mobile carriers, social networks, and online portals might also be involved. Or the mobile game developer may launch its game directly on Apple's App Store. The role of each party might vary significantly depending on specific arrangements.

The online gaming industry is currently undergoing dramatic change driven by significant technology and consumer trends including (1) rapid growth of mobile platforms, (2) social networks as an integral part of the entertainment fabric, and (3) mobile platforms and social networks opening their platforms to developers. There is also an emergence of independent mobile game

publishing platforms built by mobile game publishers on the strength of their products and user base. These platforms offer functions including publishing, promotion, operation, social connectivity and account management to game developers. These trends are transforming the distribution and consumption of online games.

What is the relevant IFRS guidance?

IAS 18 *Revenue recognition* does not provide industry-specific guidance and indeed was written long before online gaming even existed as a concept! A general approach to revenue recognition for online gaming companies is as follows:

- **Determine who the customer is** – this helps to determine whether revenue is recognised gross (as a principal) or net (as an agent) and what the company's obligations are to its customer.
- **Determine if the transaction is one unit or comprises multiple elements** – the transaction should generally be viewed from the perspective of the customer and not the seller i.e. what does the customer believe he or she is purchasing? If the customer views the purchase as one product, then it is likely that the recognition criteria

should be applied to the transaction as a single unit. Conversely, if the customer perceives there to be a number of elements to the transaction, then the revenue recognition criteria should be applied to each element separately.

- **Apply the revenue recognition criteria to each element** (or to the transaction as a whole) – revenue is recognised when (i) it is probable that economic benefits will flow to the seller; (ii) revenues and costs can be measured reliably; and (iii) the risks and rewards of ownership have been transferred with minimal ongoing involvement (for sale of goods) or the stage of completion can be measured reliably (for provision of services).

For the gaming industry, two models generally emerge:

- **Gaming as software:** e.g. traditional packaged console and PC games, for which the company is selling software.
- **Gaming as service:** this model encompasses online or hosted games where the operational business model is the delivery of the game as a service, regardless of whether accessed by PC, console, or mobile device. It is this type of gaming that is explored in the subsequent scenarios in this paper.



This paper considers the resulting accounting challenges in various practical examples covering principal/agent arrangements, virtual items and virtual currencies, and multiple element arrangements. Our scenarios are clearly not designed to be exhaustive; but they will hopefully provide food for thought for online gaming companies when considering the real revenue recognition issues that arise in virtual worlds. As business models continue to develop, other issues might become increasingly important for this industry, such as appropriate recognition of ‘in-game’ advertising revenue, the timing of cost recognition and broader principal/agent issues. As always, the answer for complicated real life arrangements will depend on specific facts and circumstances.

What about IFRS 15?

This paper focuses primarily on the revenue recognition challenges that online gaming companies face today. However, for each scenario, we have also included relevant considerations under the new revenue recognition standard IFRS 15, which is expected to be effective

for accounting periods beginning on or after 1 January 2017 (or 2018) with earlier adoption permitted. Transition to IFRS 15 will require companies to review all sales arrangements closely, which in practice might result in media companies needing to revisit historical policies and judgements even where there is not an obvious difference between IAS 18 and IFRS 15. Even if a company expects revenue recognition to be similar under IFRS 15 to its existing practice under IAS 18, it cannot simply assume that this will be the case. IFRS 15 is a fundamentally different model to the current revenue guidance and even where revenue recognition is unchanged, the rationale might be different. We expect practice to develop quickly over the coming months and recommend that companies consult with their accounting advisors as they work through their transition projects.

Are there any tax implications?

This paper is concerned primarily with accounting, which should be consistent across companies reporting under IFRS, rather than tax, which will vary with each country’s local laws and tax regulations. We note that both corporation (income) tax and sales tax

often follow accounting revenues. So judgements about revenue recognition in online gaming scenarios can affect the timing of tax cash payments.

Some countries may have tax legislation specifically designed to address online gaming, in which case the accounting treatment adopted should in theory be tax neutral. However, even in such countries, the accounting treatment adopted might have implications with regards to corporation tax and sales tax, since differing treatments for accounting and tax purposes might raise the attention of local tax authorities or accounting regulators. Tax authorities might also pay close attention to sales to, or distribution by, related group companies to understand the substance of intra-group transactions.

We would always recommend consulting with a local tax expert to determine possible tax consequences of revenue recognition judgements.

Example 1: Who is my customer?

“As a game publisher, all my income ultimately derives from gamers. But are these gamers my customers?”

In example 1 we consider what the game publisher is selling and who it is selling to. As set out below, this assessment is key, as the measurement of revenue could be significantly different dependent on who the game publisher identifies as its customer. For example, identifying the customer can be important when assessing whether payments made or discounts given to either the developer or the gamers are the publisher's marketing costs or revenue deductions.

Complex gaming arrangements – involving a game developer; publisher; distribution channel (e.g. internet portal or platform provider or internet store); and gamer – typically require the game publisher to assess whether it is functioning as:

- **A principal selling directly to ultimate gamers**, using the internet portal or store as its agent, in which case the game publisher would recognise as revenue the gross amount paid by the gamers, with the amount paid to the developer and portal/store representing a cost of sales; or
- **A sales agent acting on behalf of the game developer**, i.e. its customer is really the developer so it recognises as revenues only the net amounts retained after deducting directly related payments; it is worth noting that the 'net revenue' recognised might either (i) include a deduction for the amount paid to the distribution channel, if the publisher's transactions with the distribution channel are closely directed by the game developer or (ii) not include a deduction for the

amount paid to the distribution channel (the expense instead being presented as a cost) if the publisher has significant latitude over the relationships with distribution channels and responsibility for the transactions with them.

Another possibility (perhaps less common) is that the game publisher's customer is the distribution channel. This might be the case where the distribution channel is acting principal selling to the ultimate gamer and the publisher sells game software or provides a game service to the channel.

In certain situations, the publisher might also need to consider whether it is actually an intermediary between the developer and the ultimate gamers and in fact has two customers because its efforts benefit both the developer and the ultimate gamer. This is sometimes known as the 'dual customer' model.

A company is acting as principal when it has exposure to the significant risks and rewards associated with selling goods or rendering services. In contrast, a company that acts on behalf of another party realises revenues by receiving commissions or fees, because it is acting as an agent. The illustrative examples attached to IAS 18 set out some indicators to consider when assessing potential principal/agent arrangements. Indicators that a company should account for a transaction as principal include:

- **The company has the primary responsibility for providing the goods or services to the customer or for fulfilling of the order** – i.e. the

company is responsible for the acceptability of the products or services or has the most influence on their content.

- **The company has inventory risk before or after the customer order, during shipping or on return** – for this indicator the general sales risk of the developed good could also be considered i.e. who bears the greater risk from the investment in content and distribution.
- **The company has latitude in establishing prices** – this might be the case if the company sets the sales price or has the ability to set prices within a broad range. An agent is more likely to have earnings that are predetermined via a fixed fee per transaction or a stated percentage of the amount billed to the customer.
- **The company bears the customer's credit risk for the amount receivable from the customer** – this 'traditional' risk might be mitigated by up-front electronic payment.

These indicators are not exhaustive; nor must all of them have been met to confirm that a company is acting as principal. In practice, some indicators might suggest that one party is principal, while other indicators suggest the reverse. Relevant indicators are therefore considered as a whole to assess the economic substance of the arrangement, with the greater weight being assigned to the most important. In some cases a small change in the relevant contractual terms or business practice can affect the principal/agent assessment.



Scenario

Game publisher P obtains from overseas game developer D an exclusive licence to operate a MMOG in P's country by paying an up-front licence fee and a sales-based royalty.

Publisher P is responsible for arranging IT infrastructure, internet connections, deciding the game price in the country's local currency, and providing customer service to domestic gamers. Publisher P promotes itself as the operator of the game and enters into agreements with gamers accordingly.

Publisher P also pays distribution channel C (e.g. an internet portal or app store) a fixed price per game sold to make available the game for sale as well as an agreed amount of banner advertisements. Channel C collects cash from the gamers and remits that cash, net of the fixed fee, back to publisher P. Gamers click through to P's infrastructure from channel C to download the game.

P sets the price of the game at €10; and P pays €3 to D as a sales-based royalty and €2 to channel C for each game sold.

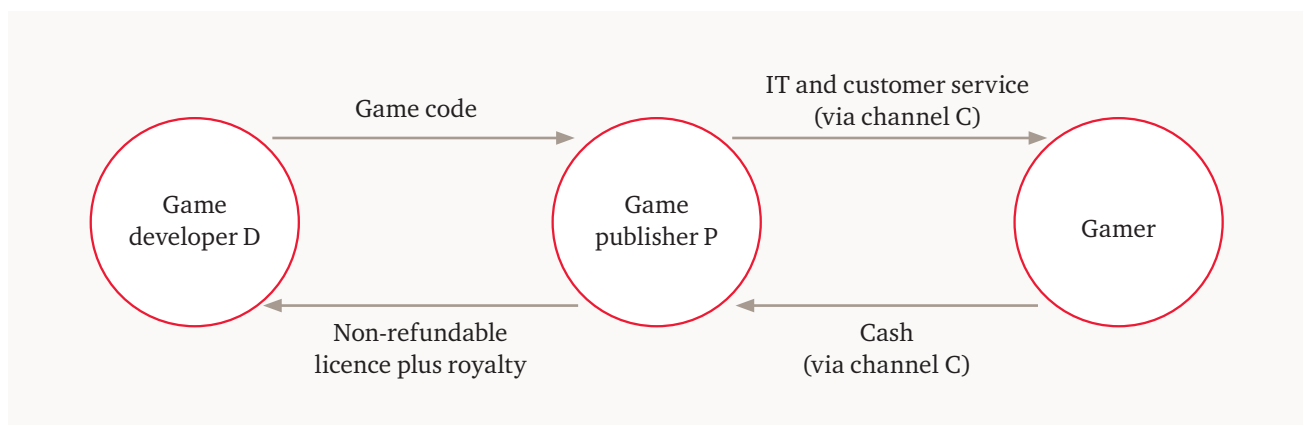
How should game publisher P account for its sales?

Game publisher P must decide who its customer is. That is, whether it is acting as:

- Principal selling the game to ultimate gamers, using channel C as its sales agents i.e. record gross revenues of €10 received from gamers with €5 costs comprising €3 to developer D and €2 to channel C; or
- Sales agent acting on behalf of developer D i.e. record net revenues of (i) €7 retained from gamers after deducting amounts paid to developer D with costs of €2 paid to channel C; or (ii) €5 if P is not taking overall responsibility for the services provided via channel C; or
- Principal selling to channel C, recording as revenue the €8 it receives from channel C with costs of €3 paid to developer D.

Game publisher P's net profit under each treatment is €5.

(Note: If P is the intermediary agent acting on behalf of both developer D and the gamers by bringing them together in the 'dual customer' model, the analysis would be similar to the second treatment above where P is acting as an agent on behalf of the developer. However, identifying the customer as developer D alone, or both D and ultimate gamers, may have other accounting consequences e.g. (i) whether gamer incentives are presented as a cost or revenue deduction; and (ii) determining P's explicit and implicit obligations to the 'customer'.)



Assessment of key principal/agent indicators

The ultimate sale is to the gamer and the gross payment of €10 is received from the gamer. But the gross amount is not

remitted directly to game publisher P. P receives €8, from distribution channel C, net of the channel's fee.

Publisher P considers four key indicators to establish whether or not the gamer is publisher P's customer:

Indicator	Assessment by game publisher P
Primary responsibility for providing the goods and services	<ul style="list-style-type: none"> The gamer visits channel C (e.g. internet portal or app store) and might consider that he or she pays channel C for the game The gamer might be aware of who originally developed the game However, P appears to be the primary obligor to gamers in that it clearly markets itself as the game operator and this is reflected in its contracts with gamers Further, P is responsible for IT infrastructure, internet connections, and customer service Indicates game publisher P (rather than developer D or channel C) is acting as principal selling to gamers
Inventory risk	<ul style="list-style-type: none"> There is no traditional inventory risk for online gaming since there is no physical product It may be considered that publisher P takes something akin to inventory risk by paying developer D a non-refundable initial licence fee It seems likely that D takes the most significant risk given its historical investment to develop the game, although that investment is not specific to sales in this country Both D and P take some risk here (which might be considered analogous to inventory risk) and as such, this indicator is mixed
Latitude in establishing prices	<ul style="list-style-type: none"> Publisher P sets the price charged to gamers P's revenues are not predetermined i.e. P can vary prices to drive sales volumes Both developer D and channel C receive a fixed amount per sale Indicates game publisher P is acting as principal selling to gamers
Credit risk	<ul style="list-style-type: none"> Online gaming is generally paid by credit card and the distribution channel would typically obtain authorisation for the charge prior to completing transactions Credit risk is therefore largely mitigated Lack of substantive credit risk means this indicator unlikely to be determinative

Conclusions

The principal/agent indicators suggest that game publisher P is acting as principal in selling the game to gamers. P would therefore record gross revenues of €10 received from gamers with €5 costs, comprising €3 to developer D and €2 to channel C.

Of course, alterations of this scenario's fact pattern could result in different conclusions.

For example, if channel C had the power to determine the price charged to gamers and paid a fixed amount per game to publisher P, then the conclusion might be that P is selling to C. P would then record net revenues of €8 received from C, with separate costs of €3 paid to developer D.

However, even if publisher P were to give some pricing latitude to channel C, it might still be principal based on the other indicators. Occasionally, game publishers that use distribution channels do not have visibility of the exact final selling price. In such cases, the game publisher should make its best estimate of the price paid by gamers, so that it can recognise that amount as revenue with the difference between that gross amount and the cash it receives treated as cost of sales (the channel's commission). If the publisher believes it cannot make a reasonable estimate of the price paid by gamers, it should consider the reasons for this. If the range of prices open to the channel is sufficiently broad that an accurate estimate is difficult, the publisher should

reconsider its determination that it is acting as a principal because the channel appears has significant pricing latitude. These judgements can be difficult and must be made in light of all available facts and circumstances, considering all the indicators and not just who sets selling price.

For mobile games, in many cases publisher P may actually be an internet portal, which provides access to many different casual game titles (i.e. the role of publisher P and distribution channel C are combined). Where P makes clear to gamers that it is acting as the sales and payment intermediary, and that developer D

has ultimate responsibility to the gamers, P should be recording revenue on a net basis. As noted above, this might be the case even if P has some latitude to set the selling price.

Alternatively, developer D might be marketing the game under its own brand, providing IT infrastructure and customer support, setting the prices charged to gamers, but uses publisher P to administer the game locally (via approved distribution channels) by drawing up relevant contracts, acting with gamers and channels on its behalf and collecting and disbursing cash. In this case publisher P might be acting as an agent for developer D.

In this example we focused on game publisher P's perspective but game developer D would of course also be

required to make its own assessment of whether it was selling to publisher P, to channel C, or direct to gamers.

Factors that can help inform these judgements by the game publisher and developer include:

- **Agreements with gamers:** which company (developer or publisher or channel) presents the gamers with their terms and conditions; and which of them has ultimate responsibility, legally or otherwise, to gamers if game service is not properly provided?
- **Cooperation agreements between game developers, publishers, and channels:** do the agreements indicate a clear service provider? For example, some agreements might indicate that the channel is supplying payment processing services to the game publisher, while others may indicate that the game developer is providing

game code services to the publisher for it to sell to gamers. The agreement should also make it clear who sets prices, maintains user accounts and provides IT infrastructure.

- **Business practices:** is the game available via multiple channels, or exclusive to one? If either the publisher or channel has an exclusive right to operate in a particular territory, the gamers might view that exclusive provider as the primary obligor as opposed to a situation where the same game appears via many channels. Which company name does the gamer see when he logs on? And who is responsible for customer service to gamers? What do the marketing materials and the game's website indicate?

Considerations under IFRS 15

IFRS 15 is a control based model under which a company is now defined as principal if it obtains control of the goods or services of another party in advance of transferring control of those goods or services to a customer.

Conversely, a company is an agent if its performance obligation is to arrange for another party to provide the goods or services. These criteria can be contrasted to the previous 'risk and reward' model described above.

The nature of a company's obligation is not always clear and so IFRS 15 provides indicators to help companies decide whether or not a good or service is controlled before it is transferred. These are broadly unchanged from the principal/agent indicators included in IAS 18:

- **Fulfilment:** who has primary responsibility for fulfilment of the contract?

- **Inventory risk:** who has inventory risk in the transaction?
- **Pricing:** who has discretion in establishing prices?
- **Credit risk:** who has customer credit risk?
- **Commission:** is consideration in the form of a commission?

Although the indicators are broadly unchanged, transfer of control is not necessarily equivalent to transfer of risks and rewards so close review of sales arrangements might result in revised principal/agent conclusions.

It is worth noting that the application of the new principal/agent guidance in IFRS 15 was discussed at the July 2014 meeting of the Transition Resource Group (TRG), which informs the IASB and the FASB of any issues arising with implementation of the new standard. The TRG was also asked to consider "how a principal should recognise

revenue when its agent has some pricing discretion (the 'dual customer' model). The TRG's discussions highlighted that application of the IFRS 15 guidance in this area is not straightforward, especially in the context of online transactions. The TRG recommended that the IASB and FASB discuss this issue at a future meeting. It might be that the IASB and FASB decide to provide further clarification on this topic, although at the time of this publication, it is currently not clear whether any further guidance will be provided and, if it is, when that would be.

Example 2: Virtual items and virtual currencies

“How long does a digital energy drink last? What about a digital sword?”

In example 2 we consider the challenging question of when a company has fulfilled its obligation, so that it is entitled to recognise revenue for virtual items. It is clear that the sale of virtual items can be viewed differently from the sale of physical goods. For example, after the sale of a physical red hat to a customer, the retailer will usually have no further obligations to the customer. When a virtual hat is sold to a gamer, he or she can only benefit by wearing the hat in a digital environment that must be maintained by the game publisher (or developer). In this example we assume the company is the principal in selling to the gamer.

Although payments made by gamers are generally non-refundable and the publisher might legally be able to terminate game operation without any penalty, game publishers typically have an implied obligation to maintain the digital game environment that enables the virtual items to be used. This implicit obligation is created by the game publisher's intention to continue its online game business and supporting operations. Accordingly, revenue should be recognised over the period of the implied obligation (the ‘delivery period’) for those virtual items that provide prolonged utility or enjoyment to the gamer.

(The rest of this example focuses on games that require a digital environment to be maintained in which to use the virtual items. There are also simpler, single-player mobile games where an application can be downloaded to a gamer's smartphone and played remotely without an online connection. In these instances, a virtual item might carry no implied obligation so the game publisher could recognise revenue immediately.)

What are some common types of virtual items and the associated revenue recognition?

- **Consumable items** are consumed virtually for immediate or near-immediate gratification. For example, a virtual ice cream can only be consumed once; a virtual bundle of three non-reusable arrows is fully consumed after the third arrow is shot. Consumption might take place immediately on purchase or there could be a short ‘consumption window’ between purchase and expiry. Revenue should generally be recognised as these items are consumed.
- **Periodic items** are consumed over a specified duration or period of time. For example, a virtual vial of magic power once purchased/consumed may last for only 90 days. Revenue should generally be recognised rateably over the period in which gamers enjoy access to, or benefit from, these items.
- **Durable (or permanent) items** are made available to gamers over a longer period of time, often for as long as the user continues to play the game. For example, a virtual sword can be used as long as the user plays the game. Revenue from these items should generally be recognised over the estimated life of the gaming relationship.

It is not always straightforward to fit a virtual item into the above categories. For example, players may purchase a virtual cow for their farm that can reproduce virtual calves that can be gifted to friends or kept in the farm; the cow might also produce virtual milk that players can give to friends or use in their virtual restaurant to make ice cream. The game company should look at the underlying substance by focusing on the period over which the gamer enjoys the benefits of that virtual good or its direct derivatives.

How is the delivery period determined?

If possible, the delivery period should be estimated at the item level (or grouping of similar items) and revenue recognised over that period. But publishers may have millions of virtual items spread across many thousands of users so keeping track individually might be cost prohibitive or impossible. Publishers might therefore need to estimate the average consumption period based on the nature of the item(s) and the game.

This can be complex: for example, a virtual sword might be technically a permanent item, but with a shorter consumption period if the game publisher can demonstrate the sword is rarely used or abandoned after a given period; but conversely its consumption period could be longer than an individual gamer's game life if the sword can be transferred among players.



Estimating the virtual item delivery period is often particularly difficult for start-up publishers and/or new games. Start-ups might not retain the historical data on player behaviour, item consumption and item transfer that is necessary for an accounting estimate of delivery period. And for new games such data by definition does not exist. Additionally, for some publishers, the information might not be available because such information may only be accessed by the developer. In such cases game publishers could estimate the average user life of paying players and use that as the delivery period for virtual items. If a lack of relevant history or data precludes both an item level approach (**'life of the good'**) and a user life approach (**'life of the gamer'**), then revenue can be recognised over the estimated **'life of the game'**, as the delivery period would not extend beyond that date:

- **Life of the good:** item (or group of items) is classified as consumable, periodic or durable and revenue is recognised accordingly.
- **Life of the gamer:** revenue is recognised over the average period for which a paying player participates in the game or related games. The estimation of average gamer life might include (i) defining a player as terminated after a certain period of no activity and calculating an actual attrition rate and average player life based on that definition; and/or (ii) using historical player behaviour data and employing statistical extrapolation methods to the whole player population to project future player attrition, and calculating player life based on that projected attrition rate. The most sophisticated publishers might use actuarial methods similar to those used by life insurance companies to estimate the life of policyholders.
- **Life of the game:** if the average paying player life cannot be estimated, or if a durable virtual item is likely to be traded and used indefinitely, revenue can be recognised over the life of the game. This method is not commonly used and results in a build-up of revenue towards the end of the game life as each payment is spread over the remaining (shrinking) estimated game life. Game life can reflect factors such as plans for new game content or sequels or game closure; industry data for games in similar genres; and impacts from the launch of competitor games.

Scenario

Game publisher P is acting as the principal in selling the game *Warriors & Wizards*, a massive multi-player online swords-and-sorcery game. Players can buy enhanced sword-skills with differing characteristics as listed below.

For each type of sword-skill, what is an appropriate approach to revenue recognition and what are the factors to consider?

Sword-skill characteristic	Proposed revenue recognition	Example factors to consider
When used, the gamer's sword-skills are improved for one duel only	Consumable item therefore recognise revenue at single point in time when used	If tracking such items individually is too onerous then consider estimating average period between purchase and use
On purchase, gamer's sword-skills are improved for next 3 months	Periodic item therefore recognise revenue straight-line over 3 months from purchase	What is the probability the gamer will continue to play for the full 3 months?
On purchase, gamer's sword-skills are permanently improved	Durable item therefore recognise revenue straight-line over estimated life of gamer	Is information available to estimate gamer life? What if sword-skills become less relevant as gamers progress from being warriors to wizards?
Sword-skills are permanently improved and are transferred to anyone that defeats that character	Durable item therefore recognise revenue straight-line over estimated life of game	Is there really an ongoing obligation? Can game life be estimated based on genre etc? Will sword-skills remain relevant throughout? What if gamers tend to drop out rather than their character be defeated? Are sequels planned or probable?

Conclusions on virtual items

As described above, when developing a revenue recognition policy for the sale of virtual items, one of the three methods might be appropriate depending on the facts and circumstances. Game publishers will also need to consider the availability of information about how virtual items are consumed. Estimating the virtual item delivery period is likely to be more difficult for games publishers with a limited operating history or those launching a new game in a new genre.

When it is not possible or practical to estimate the delivery period at the item level, game publishers might need to instead estimate the average

life of the gamer or the life of the game. This is sometimes the case for newer game companies, whose data collection systems are still developing.

For mobile and web games, the publisher (often also the distribution channel) is commonly acting as an agent for the developer. If this is the case, determining the appropriate revenue recognition model can be more complex. For example, such games publishers often do not necessarily have all the data for the virtual items as such information may only reside with the game developer.

Game publishers should ensure they have robust processes and controls to develop and periodically review these

estimates. If a publisher were to expand its data collection and analytic capabilities, enabling a more precise estimate, this would represent a change in accounting estimate so would be implemented prospectively. Start-up companies reporting under IFRS for the first time will need to consider all available information in determining the proper estimates for their historical financial statements.



Considerations for virtual currency

Online games often include virtual currency that can be exchanged for virtual items. Virtual currency can be sold to gamers by distribution channels such as:

- Physical prepaid cards of virtual currency, sold in internet cafes or other retailers; or
- Electronic virtual currency, sold by intermediaries such as social website or directly by game publishers through payment aggregators such as Paypal.

The accounting on purchase of virtual currency is typically straightforward: debit cash, credit deferred revenue. Generally, revenue recognition remains unaffected if the gamer must first buy virtual currency to acquire a virtual item i.e. revenue should be recognised when or as the service is provided, which means on delivery and consumption of the virtual item, not at the purchase of the virtual currency.

Complications can arise from promotional programs. For example, free virtual currency may be granted as part of a promotion (e.g. a gamer receives free virtual currency in exchange for first-time registration or

for completing a customer survey) or in connection with purchasing a specified amount of virtual currency (e.g., purchase 500 points and receive 100 points free). While these virtual currency points are merely digital strings of ones and zeros and are fungible, entities need to determine the amount of real money represented by each virtual currency point.

A moving averaging approach is often adopted by game companies that periodically blend together existing unused currencies and successive issuance to calculate an average unit price. For example, assume gamers have 1,000 unused virtual currency units representing real cash payments of €100 (an average unit price of €0.10 per unit), and a gamer pays for 500 units for €50 at €0.10 each, and receives 100 'free' units. In this simple example, the incentive simply results in a lower effective per-unit price below €0.10 per unit (more precisely, €150 divided by 1,600 units). If promotions are significant and frequent, keeping track of such promotions can be a challenge. (See also example 4 below for further discussion on unused currency and virtual items.)

Considerations under IFRS 15

Under IFRS 15 online gaming companies must decide whether control of virtual items is delivered over a period of time or at a point in time. IFRS 15 sets out three criteria to assess whether control of a good or service is transferred over time. If none of these criteria are met, the control passes at a point in time, and that point in time must be established. Since these criteria are different from the guidance in current standards, the pattern of revenue recognition will not always be the same.

One key consideration might be whether the virtual item purchased is distinct from the underlying licence to play the game. If it is determined that the virtual item is distinct from the hosted underlying licence, the pattern of revenue recognition might be different from that under IAS 18. However, if it is determined that the virtual item is not distinct from the underlying licence, it is likely that the approaches used today and described above will remain appropriate under IFRS 15.

Example 3: Multiple element arrangements

“Can I buy some more magic arrows for my magic bow?”

In example 3 we consider the challenges with separating virtual items into multiple elements.

IAS 18 requires that, when the substance of a single transaction indicates it includes separately identifiable components each with value to the customer, revenue is allocated between these components, usually by reference to their fair values. Under current IFRS this might mean relative fair value or, if the standalone fair value of an element is unknown (perhaps because it is never sold in isolation), it can be imputed by deducting the sales price of known elements from the total transaction price i.e. the ‘residual’ and ‘reverse residual’ methods are both permitted.

What types of multiple element arrangements might arise in online gaming?

Two common examples are:

- **Bundled virtual items:** a game publisher may bundle different types of virtual items together and sell the combination to a gamer, perhaps with a discount on the total.
- **Subscription for premium access bundled with virtual items:** as the industry evolves these types of bundled arrangements are becoming more common. When gamers purchase these packages, they receive a specified period (e.g. one month) of premium access or VIP status within the game, plus virtual currency or items that may have a life beyond the premium access period.

The usual multiple element rules apply to online gaming arrangements but there are some unique considerations that make the accounting inherently judgmental and complex.

Scenario

As in example 2 above, game publisher P runs *Warriors & Wizards*, a massive multi-player online swords-and-sorcery game.

Players can buy virtual magical bow-and-arrows that never miss their target. The bow always comes with a quiver of arrows and additional quivers of arrows can also be bought separately.

What are the key judgements involved in recognising revenue on the sale of a bow-and-arrow?

- **Does the item have standalone value to the customer?** Although the bow is never sold in isolation, it seems likely that the customer thinks he or she is purchasing two items (the bow and the arrows). In the real world, companies often look to competitors to assess whether goods can be sold standalone, but given the variations between games and publishers a comparison between games is less meaningful here. Instead, publishers can look within their game – into the virtual world – and assess whether they could sell the items standalone or indeed if gamers have created a secondary market by buying and selling goods (in this case, a bow without arrows) within the game.

- **Can revenue be reasonably allocated between elements?** IAS 18 permits appropriate methods of allocating revenue between elements, meaning ideally relative fair value but also allowing the residual and reverse residual. In this bow-and-arrow scenario, since arrows are sold standalone, the value of the bow can be imputed using the residual method, being the total price of bow-and-arrow less the standalone selling price of a bundle of arrows. Switching to a strict relative fair value approach would result in a different pattern of revenue recognition compared to the residual model.



Conclusions

Multiple element arrangements within online gaming should follow the rules of the real world i.e. separate elements where possible and then recognise revenue for each element as it is delivered. But sometimes, in the online world, this can mean looking within the game (rather than outside it) to assess whether a transaction can be unbundled.

Even if a transaction can be theoretically unbundled it may be impractical (or cost-prohibitive) to track immaterial items individually (such as virtual arrows) for revenue recognition purposes. However, if all the virtual items have similar delivery periods, then revenue could be recognised over the total estimated delivery period. The delivery period itself, whether for individual elements or bundled items, would be determined in accordance with the guidance under example 2 above.

Similar considerations would apply to other gaming scenarios, such as when gamers pay for VIP access to a virtual world for a period of time (e.g. three months) that includes other 'free' virtual goods or services that are used within that period (e.g. a virtual limousine that can be used by the gamer only in the first month of the subscription period).

Considerations under IFRS 15

The IFRS 15 model is built around 'performance obligations'. A performance obligation is a distinct promise (or group of promises) in a contract to transfer goods or services to a customer. Performance obligations replace the current concept of 'elements'. IFRS 15 includes factors to consider when determining whether a contractual promise is separately identifiable from the other promises in the contract. While in many cases the performance obligations identified under IFRS 15 might be the same as under IAS 18, contracts will still need to be reassessed in light of the new guidance.

If more than one performance obligation is identified, IFRS 15 includes more specific guidance on the allocation of the total value of the contract (the transaction price) to each of the performance obligations. Companies will be required to use a relative standalone selling price basis. This means that the company must establish what each of the performance obligations would have been sold for if sold on their own (using actual or estimated selling prices), and then allocate the total contract value based on the relative value of each. The residual method described above, which

is one of the most common methods used today, is now only permitted in very limited circumstances. Where there are no directly observable standalone selling prices, estimation and allocation can be complicated and requires significant judgement.

Example 4: Unused currency and unused items

“What if I don’t spend all my virtual currency? Or I leave some magical arrows in my quiver?”

In example 4 we consider how game publishers should account for unused virtual currency and unused virtual items – that is, the accounting for ‘breakage’.

What is ‘breakage’?

Game publishers often sell prepaid cards that a customer can use to acquire virtual currency or virtual goods. On sale of a prepaid card or virtual currency the game publisher has an obligation to provide a future game service to the customer. Typically, holders do not use all prepaid cards and/or all virtual currency. The unredeemed portion is commonly referred to as ‘breakage’.

Based on the gamer’s contractual rights, publishers must determine whether unredeemed amounts represent deferred revenue or other liabilities. Additionally, in some countries publishers should evaluate whether escheatment laws apply i.e. should the unredeemed portion be treated as unclaimed property and remitted to a government authority. A game publisher would be unable to recognise revenue from breakage if it represents escheatable funds.

How should a game publisher account for unused virtual currency?

If unused prepaid cards and unused virtual currency are not escheatable, a game publisher can recognise income from the estimated breakage. IFRS does not prescribe a specific method for recognising breakage so game

publishers must choose an appropriate accounting policy. (Recognising all of the expected breakage upfront is generally not allowed!) The appropriate model will depend on the specific features of the arrangement and the game publisher’s ability to reliably estimate breakage. Three possible approaches are:

- **Liability model:** the publisher could choose to recognise revenue when a gamer’s right to redeem expires. This model might be most appropriate if the publisher is not able to reliably estimate breakage. However, this model is unlikely to be appropriate if the prepaid cards or virtual currency have no expiry date.
- **Remote model:** publishers that can reliably estimate the pattern of redemptions over time may be able to determine when the likelihood of further redemptions becomes remote. It would be appropriate to recognise breakage at that time, based on the expectation that the gamer holding the rights will not demand performance. That expectation should be developed using relevant historical experience. Such a model should not result in immediate revenue recognition for forecast breakage since some time must elapse before the point is reached when further redemptions become a remote possibility.
- **Proportional model:** when a reliable, supportable estimate can be made for expected breakage, revenue recognition by the game publisher can

reflect expected forfeitures prior to the actual expiry date. Such a treatment would be dependent on a reliable and evidenced history of breakages. In this model, a proportional part of the estimated breakage is recognised together with actual redemptions as they occur. In other words, the amount that is expected to be forfeited is recognised as revenue at the same time as services are delivered for the portion is redeemed.

How should a game publisher account for unused virtual items?

In addition to unredeemed prepaid cards and virtual currency, there can also be breakage for virtual items. The attention of many gamers inevitably moves from one game to the next, meaning some unused consumable virtual items will not be consumed and some durable virtual items will no longer be used.

- **Consumable items:** if a game publisher has adequate historical data, the revenue associated with the unused consumable virtual items can usually be accounted for under one of the three acceptable approaches to unused virtual currency discussed above.
- **Period items:** for items that are consumed over a specified period of time, the concept of breakage is usually not applicable as the items will expire as the period ends. Assuming this period is shorter than the anticipated gamer life, revenue for the periodic item will already be recognised before ‘breakage’ occurs.

- **Durable items:** for unused durable virtual items, revenue is recognised over the estimated life of the gamer or game, both of which are developed based on estimated player attrition. Such estimation of player attrition naturally takes into account repeated game play and breakage factors so automatically spreads the revenue associated with breakage over the delivery period.



Conclusions

In conclusion, breakage can have a significant effect on the timing and pattern of revenue recognition. The model adopted will depend both on actual usage patterns and the quality and granularity of available data. The selection of a recognition model for breakage is an accounting policy election that the game publisher should apply consistently to similar arrangements.

The discussions above assume that the game publisher is transacting directly with the gamer so has no obligation to provide anything other than the virtual goods or services when the gamer demands them. Sometimes, if the game publisher is acting as an agent for a game developer, the game publisher might be acting as an intermediary that collects cash from the gamer and that is then obliged to pay cash to the

developer when the gamer demands a certain good or service. Alternatively, virtual currency sold by the publisher might be redeemed by the gamer with another company, which would require the publisher to make a payment to that company.

Where the game publisher has to pay cash when virtual currency is redeemed, rather than just provide a good or service, it is less clear how any expected breakage should be accounted for. At the time of this publication, the IFRS Interpretations Committee is debating whether the liability to pay cash in such scenarios constitutes a financial liability, which would mean that no breakage can be recognised. Given that this is a developing area of guidance and could be complex, we recommend that you consult with an adviser if this might apply to you. (This ongoing debate will be equally applicable when IFRS 15 is adopted.)

Considerations under IFRS 15

If the game publisher expects that not all unused items will be used by the customer, the guidance in IFRS 15 is more prescriptive than current practice. Where the publisher expects there to be breakage, the pre-paid amount that is expected to be forfeited is recognised as revenue when services are delivered for the portion that is redeemed (similar to the proportional model described above), subject to the requirement that the publisher must be satisfied that it is highly probable that it will not be necessary to reverse a material amount of revenue in a future period.

If the publisher does not expect there to be breakage, revenue is recognised only when it considers that there is only a remote possibility that the customer will exercise his or her right to demand further goods or services.

Conclusion

The significant growth of online gaming is driven partly by online players interacting with online friends and rivals, and partly by the rise of mobile gaming facilitated by increasing penetration of smartphones and tablets. New technology platforms and new entrants have driven new business models such as ‘freemium’ games that are free to play but in which real cash must be spent to acquire virtual goods or other premium content.

This paper has considered the resulting accounting challenges in various practical examples covering principal/agent arrangements, virtual items and virtual currencies, and multiple element arrangements.

The scenarios in this paper are clearly not designed to be exhaustive; but they will hopefully provide food for thought

for online gaming companies when considering the real revenue recognition issues that arise in virtual worlds. The answer for complicated real life arrangements will depend on the specific facts and circumstances in each case. Where transactions are significant, management should include disclosures in the financial statements that enable users to understand the conclusions reached. As always, planning ahead can prevent painful surprises.

We hope you find this paper useful and welcome your feedback.

To comment on any of the issues highlighted in this paper please visit our dedicated website www.pwc.com/miag or contact your local PwC entertainment and media specialist.



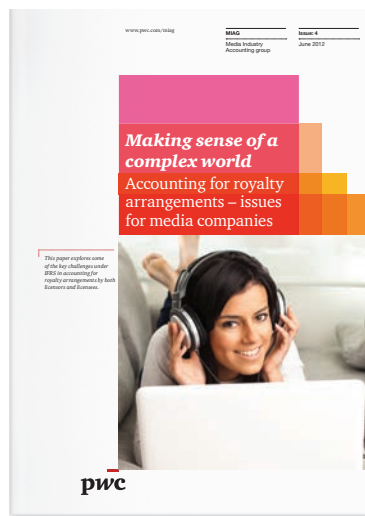
Further reading



MIAG Issue: 3

Broadcast television: Acquired programming rights

This paper explores the critical considerations under IFRS relating to the recognition, presentation, amortisation and impairment of acquired programming rights.



MIAG Issue: 4

Accounting for royalty arrangements – issues for media companies

This paper explores some of the key considerations under IFRS in accounting for royalty arrangements by both licensors and licensees.



MIAG Issue: 5

Content development and cost capitalisation by media companies

This paper explores the critical considerations relating to the classification, capitalisation and amortisation of content development spend under the applicable IFRS standards IAS 2 *Inventories* and IAS 38 *Intangible Assets*, focusing on the television production, educational publishing and video game sectors.



MIAG Issue: 6

Revenue recognition: principal/agent arrangements – issues for media companies

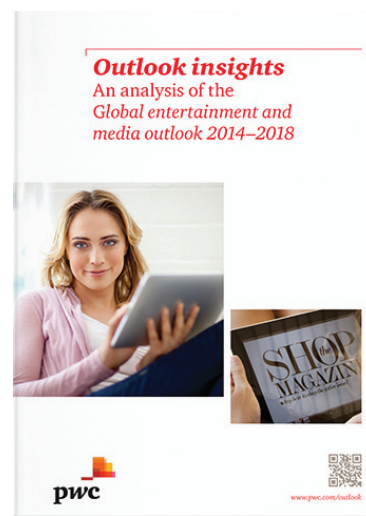
This paper considers the assessment of the key principal/agent considerations in various practical examples, covering physical books, eBooks, television content and film production.



MIAG Issue: 7

Revenue recognition: payments to customers – issues for media companies

This paper explores some of the key IFRS accounting considerations for payments by media companies to their customers, covering the purchase of advertising space, physical and digital 'slotting fees', outsourced advertising sales and video game prizes.



Global E&M Outlook

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