

# The Principle of Measurement of Revenue based on International Financial Reporting Standard (IFRS) in Pharmaceutical Corporation

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## Abstract

Revenue is one of the most important financial statement measures to both preparers and users of financial statement. It is used to measure and assess aspects of reporting entity's past financial performance, future prospects, and financial health. The pharmaceutical and life sciences industry includes a number of sub-sectors, the largest being pharmaceutical, biotechnology, contract research organization, and medical devices. The common feature is that each sub-sector develops, produces, and market a diverse array products, technology, and services that relate to human health. Measurement of revenue issues arise not only from the sale of drugs and medical devices, but increasingly from arrangement between companies in the industry to develop and bring products to market. Companies in the pharmaceutical and life sciences industry often enter in to arrangement to develop drugs, either as a supplier of services, consumer of those services, or through execution of licence arrangements. These complex transactions are accounted for under the revenue standard (IFRS 15, *Revenue from contracts with customers*). This paper focuses on how the revenue standards will impact companies in the pharmaceutical and life sciences industry and contrasts the guidance with current practice under IFRS.

**Keywords:** Revenue, IFRS 15, Pharmaceutical Corporation.

DOI: 10.47750/pnr.2022.13.S03.251

## INTRODUCTION

Accounting standards in general are divided into either rules-based accounting standards or principles-based accounting standards. Unlike rules-based accounting standards where the rules are very detailed and complex, principles-based accounting standards are more abstract and brief (Song & Zhou, 2021). An example of a principles-based standard practiced by European publicly listed companies is the IFRS. The IFRS, which are handled by the International Accounting Standards Board (IASB), are continuously updated and discussed as to improve the quality of financial reports to better reflect current economic situations (Lumbantobing et al., 2022). One of the recently effective standard in the past five years is the IFRS 15 regarding *Revenue from Contracts with Customers*.

The IFRS 15 was issued in 2014 and effective since 2018 with amendments and clarifications along the years. With the release of IFRS 15, many industries are affected with one of them being the pharmaceutical industry. Therefore, it is necessary to look further into how pharmaceutical companies are affected by this standard and how said companies will measure revenue guided with the new standard. The purpose of this article is to explain what is IFRS 15 and try to answer how it is applied in pharmaceutical corporations.

## LITERATURE REVIEW

### 1. IFRS 15

IFRS 15 was first issued in May 2014 to replace IAS 11 *Construction Contracts*, IAS 18 *Revenue*, IFRIC 15 *Agreements for the Construction of Real Estate*, IFRIC 18 *Transfer of Assets from Customers* and SIC-31 *Barter Transaction Involving Advertising Services*, which were the previous standards in recognizing revenue from contracts with customers. The effective date was set to January 2018 with the application of the standard further clarified to the public on April 2016 to provide ease in transitions.

The main objective of IFRS 15 is to provide a more comprehensive framework for addressing revenue recognition problems, simplify the preparation of financial statements by reducing the amount of guides to refer to, improve comparability of revenue recognition practice across entities, and guide entities to report information regarding the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customer to relevant parties (Haggenmüller, 2019). The scope of IFRS 15 applies to all contracts with customers except: contracts within the scope of IFRS 16 *Leases* and IFRS 17 *Insurance Contracts*, financial instruments and other contract related rights and/or obligations within the scope of IFRS 9 *Financial Instruments*, IFRS 10 *Consolidated Financial Statements*, IFRS 11 *Joint*

*Arrangements, IAS 27 Separate Financial Statements, IAS 28 Investments in Associates and Joint Ventures*, and non-monetary transactions between companies in the same industry to increase sales to customers. In the case that a contract with a customer is within the scope of IFRS 15 and another standard, if other standards do not provide guideline on how to separate or initially measure one or several parts of the contract, then IFRS 15 will be applied. Otherwise, the other standards shall be applied first (IFRS Foundation, 2022).

The main principle of IFRS 15 is delivered in a five-step model framework, which are:

1. Identifying the contract.
2. Identifying performance obligations.
3. Determining the transaction price.
4. Allocating the transaction price to performance obligations.
5. Recognition of revenue after a performance obligation is fulfilled.

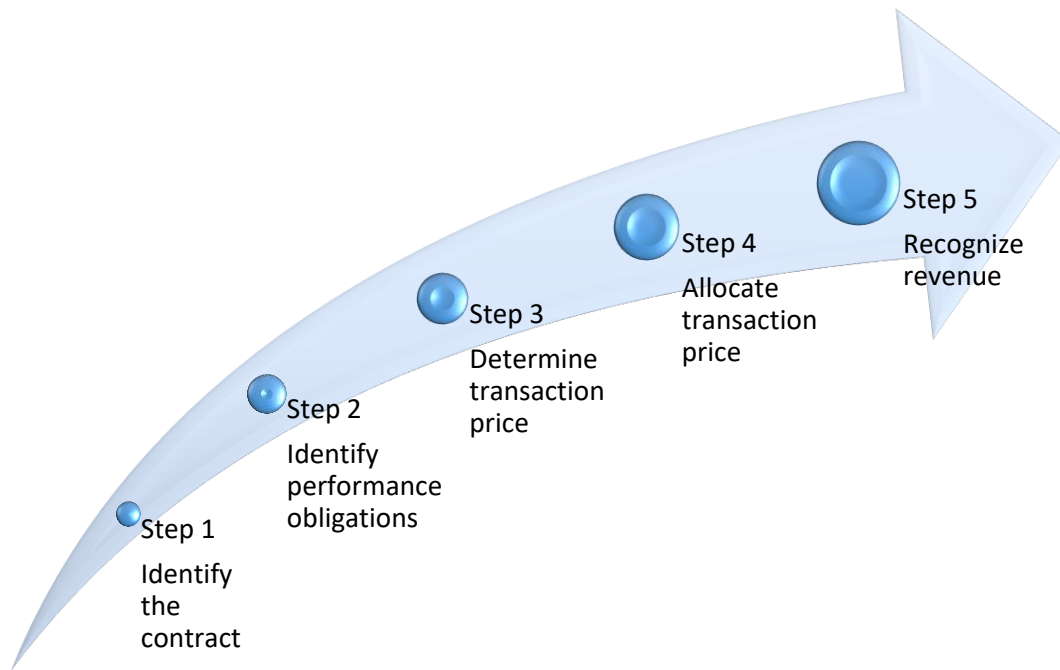


Figure 1. Five-step model

### Identifying the contract

Five criteria must be met for a contract with a customer to be identified, which are:

1. Contract must be approved by the parties involved in the contract, either in written or non-written form
2. The rights of each party involved in regards to the transfer of goods and services are clear and enforceable
3. Payment terms relating to the goods and services can be determined
4. The contract has a commercial basis
5. The ability and desire of the customer to pay is taken into account

According to Haggemüller (2019), the above criterias imply that the contracts must be fortified by the law for the rights and obligations from said contract to be accepted. This differentiates IFRS 15 with the previous principles, such as IAS 32, where it is implied that a contract must not always be imposed by the law. Furthermore, if the above criterias are not met, the entity may reevaluate the contract to see whether it will meet the above the criteria in the near future where then IFRS 15 will be applied to the contract.

IFRS 15 also gives details regarding contract modifications

where if a new performance obligation is added or additional goods sold have a standalone price, then it will be considered as a new contract. In other situations, it will simply be a modification of the original contract (Oncioiu & Tănase, 2016).

### Identifying performance obligations

The distinct promise to transfer specific goods or services, differing from other goods or services, is considered as a performance obligation. Performance obligation is distinct when it fulfills the criteria of: the goods and services are beneficial to the customer and are immediately available, and the goods and services are not dependent on other goods and services within the contract. A performance obligation may also be a series of distinct goods or services transferred to the customer in the same pattern over time and a method would be used to calculate the customer's satisfaction towards the performance obligation over time (Peters, 2016).

Separate performance obligations may not be identifiable when the entity integrates the goods or services with other goods or services within the contract, the goods or services impacts or changes other goods or services within the

contract, or the goods or services within the contract are highly dependent on each other (IFRS Foundation, 2022).

### Determining the transaction price

The transaction price is the amount expected by the entity in return for the fulfillment of the performance obligation to the other party as stated in the contract. The price in a contract may be affected by variable considerations such as discounts, rebates, refunds, credits, incentives, penalties, however, there should be a low possibility of significant change in the cumulative revenue as soon as the uncertainty has been resolved (Lubis et al, 2022). If the goods or services are returned then no revenue will be recognized as performance obligation is considered unfulfilled (Peters, 2016).

Other factors affecting transaction price would be significant financing components such as timing of payment in regards to the fulfillment of performance obligation. If cash is received in advance from the customer, then the entity will realize finance cost and increase deferred revenue. On the other hand, if the cash received in arrears from the customer then the entity is to record finance income and reduction in revenue. However, no changes are made for a financing component if the period between the transfer of goods and services and the payment is settled within one year (Hagenmüller, 2019). For non-cash cases, fair value are to be used and if not available, market price will be considered instead (Petersen, Bansbach, Dornbach, & KLS Accounting, 2015).

### Allocating the transaction price to performance obligations

In the case that a contract has multiple differing performance obligations, an allocation of the transaction price must be conducted in reference to their estimated relative stand-alone selling prices. Stand-alone selling prices are the payments the customer is willing to give for the different goods or services if it was sold separately to them. These stand-alone selling prices will then be calculated in reference to the total amount in the original contract (Peters, 2016). If a stand-alone price cannot be estimated, the IFRS 15 provides several methods that may be applied such as adjusted market assessment approach, expected cost plus a margin approach, and residual approach which may only be applicable in certain situations (IFRS Foundation, 2022).

Variable considerations may also be applied to some or a single performance obligation within the contract. However, due to the complexity and workload, this may cause contract modifications and require reassessment.

### Recognition of revenue when performance obligation is satisfied

Compared to IAS 18 where revenue is admitted when all risks and rewards have been shifted to the customer, in IFRS 15 revenue is recognized as control over asset is shifted to the customer either over time or at a point in time. Control over

an asset is explained as the capacity to use and obtain all of the leftover benefits from the asset, including preventing others from managing the asset. Leftover benefits of the asset influence the cash flows either directly or indirectly (IFRS Foundation, 2022), such as:

1. Using the asset to create goods or provide services
2. Using the asset to strengthen the value of other assets
3. Using the asset to reduce expenses or liabilities
4. Exchanging or selling the asset
5. Setting up the asset as a guarantee for a loan
6. Withholding the asset

The entity may realize revenue over time when one of the three situations occur, which are (Peters, 2016):

1. The entity's satisfied performance obligation creates or amplifies an asset owned by the customer
2. The customer at the same time receives and uses the benefits given by the entity's performance or
3. The entity's performance does not produce an asset with benefits to the entity and the entity has a right enforced by the law to receive payment for a performance obligation that has been completed as per the contract. However, the entity does not have an enforceable right for payment if terms of contract allow the customer to cancel or modify the contract, or circumstances written in the contract occurred allowing the customer to not pay at all.

Revenue over time may be recognized through output method or input method. The output method is a direct calculation of the value of goods or services given to the customer up to that point in time such as amount of goods delivered, milestones accomplished, etc. The input method looks at the amount of costs incurred and resources used in completing the performance obligation.

Meanwhile, if revenue is not recognized over time, then it will be realized at a point in time. Factors indicating the point in time at which revenue may be recognized include: when the customer has legal rights and title to the asset, the entity has enforceable rights to payment for the performance obligation, a physical transfer of the asset has occurred between the customer and the entity, and that the risks and rewards related to the asset belongs to the customer (IFRS Foundation, 2022).

### Licenses of intellectual property

Separate from the recognition of revenue for goods and services, revenue obtained from licenses of intellectual property (IP) has a different set of application. Granting a license of IP to a customer is defined as either the right to use the entity's IP or the right to access the entity's IP throughout a certain time period. A licensed IP requires a request for rights to access if the following criteria are met:

1. Activities that significantly impact the IP to which the entity has rights to will be committed.

2. The rights granted will expose the entity to any positive or negative outcome of the requester’s activities.
3. Said activities does not result in a transfer of goods or services between both parties.

Revenue can only be recorded after the rights-to-use license of IP has started and the customer is able to use and experience benefit from the license.

Under IFRS 15, a license provides access to a company’s

Intellectual Property (IP) if all of the following criteria are met: The licensor will undertake (either contractually or based on customary business practice) activities that significantly affect the IP to which the customer has rights, the Licensor’s activities do not otherwise transfer a good or service to the customer as they occur, the rights granted by the license directly exposed the customer to any effects (both positive and negative) of those activities on the IP.



**Figure 2:** Step model in Pharmaceutical Corporation

Qualitative and quantitative information about contracts with customers must be disclosed under the new standard, including estimates calculated and applied, decisions and judgments regarding the contract, contract assets, and liabilities, categories of the segmented revenue as well as the performance obligations that are still effective even after the end of the contract (Haggenmüller, 2019).

## 2. Difference between IFRS 15 and previous standards

As summarized by Dalkılıç, (2015), the major differences between IFRS 15 and the old standards are:

**Table 1.** Difference between IFRS 15 and previous standards

Under previous IFRS	Under IFRS 15
Multiple standards and differing interpretations	A single combined standard
Different standards for different types of revenue	A single standard for revenues across all sectors
Fair value used to measure consideration	Consideration measured in line with the amount of what the company expects to receive
Various timing of revenue recognition	Revenue recognized over time only if the criteria specified in IFRS 15 are met, otherwise revenue is recognized at the point where control over asset is transferred to customer
Lack of detailed guide on how to measure revenue when variable considerations exist	Variable consideration included only when there are indications that the entity will offer a change in transaction price

## METHODS

This study uses a qualitative descriptive approach where previous literatures regarding the principle of revenue measurement based on IFRS 15 are collected and analyzed. Sources of data are obtained from various journals, analysis reports done by accounting corporations, and directly from IFRS handbook. This study will give a description on how the pharmaceutical industry applies IFRS 15 with given examples regarding IFRS 15 five-step model framework. Therefore, the methodology used is pure literature analyzation, evaluation, and drawn conclusions from theoretical analysis and discussion results, adding deeper insight to achieve a better understanding.

## RESULT & DISCUSSION

As presented in the literature review, the five-step model framework of IFRS 15 is applicable in the pharmaceutical and life sciences industry where the process can be broken down as below:

### 1. Identifying the contract

As part of identifying the contract, pharmaceutical companies should consider any history of the other party requesting changes of the terms within a contract as one of the criteria in identifying the contract is a clear and enforceable rights of every party involved. Another criterion of identifying the contract is consideration of whether a payment collection is probable. In general, IFRS interprets this as a probability higher than 50% and this assessment is made with variable considerations in mind.

A case example would be a pharmaceutical company selling products to another entity for \$1 million. The pharmaceutical company has sold products to the entity for several years and had always experienced a delay in collection. Payment has always been received only after significant adjustments in price. This adjustment in price will be a variable

consideration that will help evaluate whether collection is possible. Assuming there are no problems in obtaining the payment and the pharmaceutical company satisfied its' performance obligation, then the transaction price, which are the price after adjustment, will be recognized as the revenue (PwC, 2019).

**2. Identifying performance obligations**

When identifying performance obligations for a pharmaceutical corporation's contract, it is necessary to distinguish between goods and services that must be transferred to the customer and administrative activities that are not part of the promised goods or services. Often times, pharmaceutical corporations provide multiple products or services that are part of a single package, such as transferring equipment while also performing installation, training, and or other maintenance services. IFRS 15 does not detail which part of promised goods or services that an entity may consider separately distinct, however it is noted in the Basis for Conclusions that pharmaceutical corporations should consider materiality when assessing the performance obligations within a contract. For example, if a transferred equipment cannot be used without pre-installation services, then both the goods and services may be considered as a single package. To add even further, free or discounted goods or services given to the customer from the promise of an already existing contract must also be assessed for materiality and treated as separate performance obligations if a material right exists (EY, 2017).

Example given for this criteria would be if a pharmaceutical corporation creates an arrangement with a hospital for the transfer of surgical instruments. Simultaneously with the sale of surgical instruments, the corporation gives the option to purchase consumables to use with the surgical instruments at a standalone selling price. The consumables are necessary to operate the surgical instrument and said corporation is the only one that sells them

Thorough analysis of the above example would show that at the start of the contract, the mentioned consumables are not part of the performance obligation of the initial contract as the consumables were offered with a standalone price. The statement that only the lone pharmaceutical corporation sells those consumables does not change the assessment of the consumables being a separate contract if the hospital decides to purchase those goods (PwC, 2017). However, if the consumables were offered at a discounted price that cannot be found on a stand-alone basis then the consumables would be treated as a separate performance obligation instead as it contains material right.

**3. Determining the transaction price**

If a contract price is fixed then determining the transaction price is simple, however when variable considerations are taken into account, things start to get complex. As mentioned in literature review, variable considerations include things

such as discounts, rebates, refunds, credits, incentives, penalties, and more. Common cases of variable considerations within the pharmaceutical industry are development-based licensing agreements, milestone-based sales payments, sales-based royalties, discounts for certain volume thresholds, and distribution arrangements with retailers, wholesalers, and end consumers. When these variable considerations are recorded as a payable, if these considerations are economically linked to the revenue of a contract, then the transaction price of said contract must be reduced. The reduction of transaction price will then reduce the amount of revenue recognized as well.

Pharmaceutical corporations are expected to estimate variable considerations using either the 'most likely amount' method or the 'expected value' method, whichever method is likely more predictive. A case example of both methods would be when a pharmaceutical company enters into a contract where said entity sells product to a customer. The customer has rights to a rebate based on its' annual purchases where different purchasing levels grant different percentages of rebate. The pharmaceutical company then compiles an estimated list of the probability for each levels of variable considerations which will not result in a significant reversal of cumulative revenue recognized. The compiled list are as below.

**Table 2.** The Transaction Price

Units purchased	Per unit rebate	Expected probability
0 – 100,000	5%	90%
100,000 – 500,000	10%	20%
Above 500,000	15%	5%

Using the 'expected value' method, the pharmaceutical corporation will calculate a probability-weighted estimate based on the table above, which are ((5%\*90%)+(10%\*20%)+(15%\*5%)) which will result in a 7% estimated rebate. Meanwhile, the 'most likely' method means the estimated result will be a 5% rebate. If the pharmaceutical company is unsure whether both estimates will result in a significant reversal of cumulative revenue, then the following indicators of significant reversal may be taken into consideration, such as (PwC, 2017):

- a. The considered amount can be heavily influenced by external factors such as market volatility and third party action
- b. Solution to the uncertain amount of consideration cannot be seen in the near future
- c. The entity lack experience in similar case of contracts
- d. The entity has a history of changing payment terms or offering price changes
- e. The contract is gigantic in number and has a broad array of possible consideration amounts.

If the price cannot be determined due to the large number of variable considerations and possible significant reversal, then revenue cannot immediately be recognized.

Another point to note in the pharmaceutical industry is the possibility of sales with a right of return. Pharmaceutical corporations often include the rights to return product within a few months before and after product expiration within the contract. These returns may take the form of a trade-in agreement which resulted from the purchasers’ desire to reduce risk and the sellers’ desire to build good relation with their customers. Similar to the above variable considerations, revenue recognition will only be made towards the amount of goods or services that is unlikely to be returned as long as there is no risk of significant revenue reversal.

**Allocating the transaction price to performance obligations**

Pharmaceutical corporations often incorporate multiple product and/or services into their contract in a single arrangement. Under IFRS 15, the transaction price will need to be allocated into each separate performance obligations using standalone selling price of each product and/or service as the relative base. Factors that could affect allocation of transaction price are discounts and variable considerations that needs to be allocated to related performance obligations as well as residual approach that should only be used in highly uncertain goods or services under IFRS guidance.

An example of transaction price allocation in a pharmaceutical corporation is as seen below.

**Table 3.** Transaction price allocation in a pharmaceutical corporation

Performance obligation	Standalone selling price	Allocation %	Allocation of consideration
Medical equipment	\$ 14,250	15%	\$ 12,750
Consumables	\$ 65,000	70%	\$ 59,500
Maintenance	\$ 9,000	10%	\$ 8,500
Training	\$ 5,000	5%	\$ 4,250
Total	\$ 93,250	100%	\$ 85,000

A contract with transaction price of \$85,000 has 4 performance obligations with differing standalone selling prices. In allocating the transaction price, the percentage of each performance obligation is calculated through dividing each standalone selling price with the total standalone selling price. After each allocation percentage has been obtained, the transaction price is then allocated based on the calculated percentage.

**4. Recognition of revenue when performance obligation is satisfied**

As referred to in the literature review, revenue is recorded when control over asset is shifted from the customer either over time or at a point in time. In the context of a pharmaceutical corporation, revenue is often recorded through a “sell-through” approach which means revenue is

admitted when the product reaches the end customer. This approach came through because the inventory of a pharmaceutical company may be under consignment at distributors, hospitals, or other places that cause the final transaction price to not be determinable until it finally reaches the end customer (PwC, 2017). Pharmaceutical corporations using the “sell-through” approach will need to assess at what point control over asset is shifted to the customer as guided by IFRS 15. The point determined will change when the revenue is realized by the entity.

Additionally, it should be noted that determining whether a contract for pharmaceutical corporation is within the scope of IFRS 15 can be difficult. For example, a joint product development with another company with shared risks and benefits may be considered as outside the scope of IFRS 15 as it is not part of the usual goods or services sold. However, if the other party is simply licensing its’ intellectual property (IP) or selling base substances of a product to the pharmaceutical company or providing services in aid of the research and development of the pharmaceutical company, then it may be within the scope of IFRS 15. It is advised that pharmaceutical companies reevaluate such contracts and properly determine whether the elements of the contract fall within the scope of IFRS 15 as arrangements outside the scope of the said standard will instead be recorded as other income or even contra-expense in other cases (PwC, 2017).

In regards to the license of intellectual property, pharmaceutical corporations commonly out-license the IP developed related to a drug that has not been approved by the regulation. The common terms of contract in the pharmaceutical industry include allowing the licensee to further modify the IP and create and sell the final commercialized product. The revenue for license of IP is recognized either at a point in time or over time, which are determined by the terms of contract, the rights given to the licensee as well as the activities that have been undertaken by the licensee which impacts the licensor. Revenue for license of IP is commonly recognized sometime after the control of the license has been transferred to the licensee (PwC, 2017). For more complex licensing agreements, revenue might not be recognized immediately as pharmaceutical corporations often include R&D services as a part of licensing the IP.

Disclosure of contract with customers as guided by the new standard means life science entities may include information regarding the estimate of standalone prices of goods or services, the variable considerations estimated as well as the calculation of allocation of variable considerations and transaction prices. Disclosure of disaggregated revenue is also required for pharmaceutical corporations to illustrate the unpredictability of revenue and cash flows from contracts with customers. Explanation regarding the relationship between the disclosed information is also necessary (EY, 2017).

## CONCLUSION

Multiple concerns in the previous standards are clarified in IFRS 15 with the standard being the ultimate guideline across all industries, including pharmaceutical industry. IFRS 15 guides pharmaceutical corporations to a clearer principle of revenue measurement while still giving the entities room to make judgements and decisions more beneficial to the company itself, either economically and/or for the sake of better information within the financial reports.

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