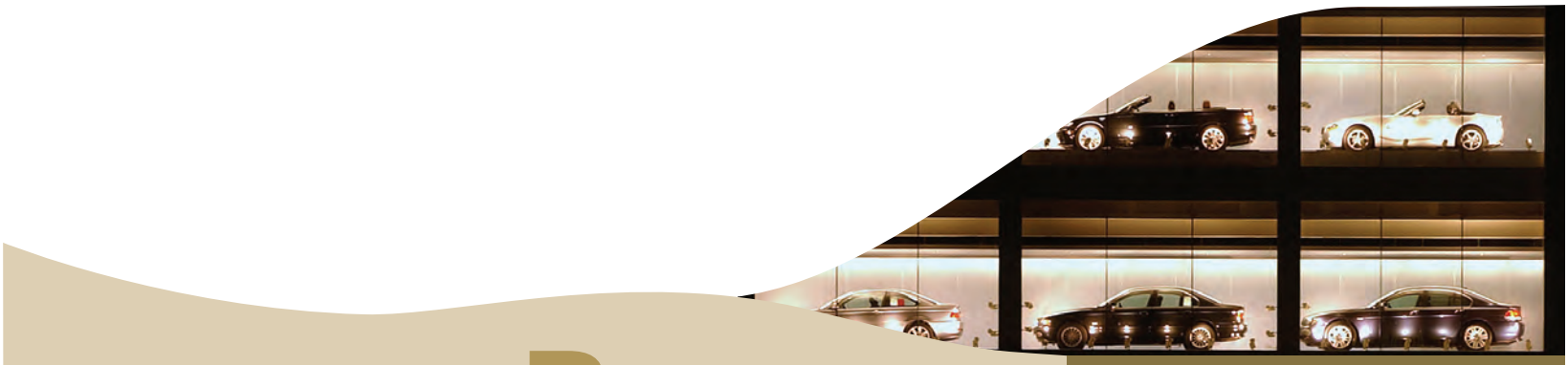
CHAPTER 4

Revenue and Expense Recognition



Rene Johnston/GetStock.com

BMW Group (Bayerische Motoren Werke or Bavarian Motor Works, www.bmwgroup.com, Frankfurt Stock Exchange ticker: BMW) is one of the world's leading luxury vehicle manufacturers. The company's portfolio includes well-recognized brands such as MINI, Rolls-Royce, and, of course, BMW.

You should already be familiar with the accounting for the revenue and cost of sales for tangible products such as cars: roughly speaking, revenue and costs are recorded "at the point of sale." However, BMW also sells some of its vehicles to car rental companies. In some cases, BMW has an obligation to take back the vehicles after a period of time. When should the company recognize revenues for such transactions? Is the appropriate time at the point of sale?

BMW often includes a package of services in conjunction with the sale of each vehicle. For example, if the sale of a BMW 323i sedan for $35,000 includes four years of maintenance services such as oil changes and tune-ups, should the company record the full $35,000 as revenue at the point of sale?

In addition to manufacturing and selling cars and motorcycles, BMW also provides financial services in the form of vehicle loans and leases. How should BMW recognize revenue from these financial services?

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

L.O. 4-1. Explain why there is a range of alternatives for revenue recognition that are conceptually valid and the rationale for accounting standards to prescribe a smaller set of alternatives.

L.O. 4-2. Apply the general revenue and expense recognition criteria to a variety of contexts involving the sale of goods and provision of services.

L.O. 4-3. Apply the specific revenue and expense recognition criteria for construction contracts, including the prospective treatment applicable to changes in estimates.

L.O. 4-4. Apply the principle of conservatism to the accounting for construction contracts.

L.O. 4-5. Evaluate the risks of revenue misstatements and the appropriateness of revenue recognition policies in specific circumstances by applying professional judgment.

CONTENTS

recognition The process of presenting an item in the financial statements, as opposed to merely disclosing that item in the notes.

Recognition is the process of presenting an item in the financial statements, as opposed to merely disclosing that item in the notes. Many transactions and items that meet the definitions of financial statement elements (asset, liability, equity, revenue, ordinary expense, gain, loss; see Chapter 2) do not appear on the balance sheet or income statement. For example, some patents will meet the definition of an asset, but the value of patents usually is not recognized on the balance sheet. In this chapter, we focus on the recognition of revenues and expenses on the income statement.

A. RANGE OF CONCEPTUAL ALTERNATIVES FOR REVENUE RECOGNITION

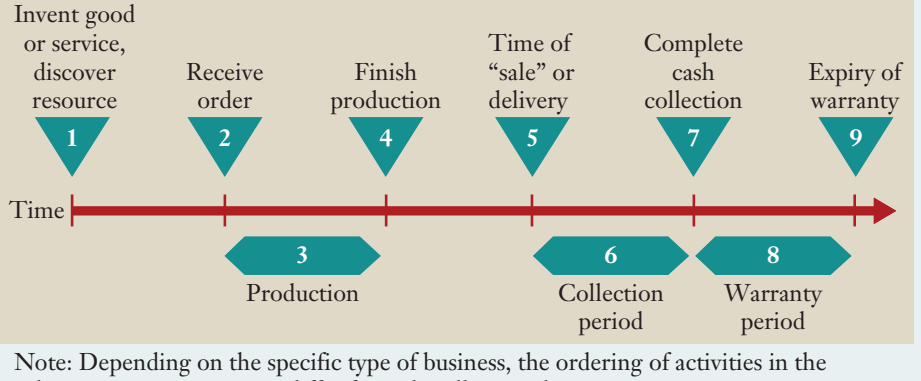
L.O. 4-1. Explain why there is a range of alternatives for revenue recognition that are conceptually valid and the rationale for accounting standards to prescribe a smaller set of alternatives.

In theory, there is a wide range of possible points at which revenue could be recognized. The breadth of this range reflects a business's value creation process, as illustrated in Exhibit 4-1. (For simplicity, the diagram is linear even though the different stages can sometimes overlap with each other.) In terms of value creation, the earliest point at which one can reasonably argue for revenue recognition is

when the knowledge for a business, product, or process is developed—for example, a biotechnology company creates value for its owners when it discovers a new vaccine for a disease, or a mining company when it discovers a rich deposit of aluminum. For a publicly traded company, the value created will often be evident in the stock price of the enterprise, if the discoveries are significant in relationship to the size of that enterprise. Conceptually, it is possible to argue for revenue recognition at this point because the company will be able to monetize these discoveries at some point in the future, either by commercializing the breakthroughs or selling the knowledge to another party.

The value creation process continues with marketing efforts and the receipt of orders from customers. The production process, of course, also adds value. Depending on whether the product is a good or service, delivery occurs during production (for a service) or after production (for a good). If the business makes the sale on credit, then a portion of value added is in the form of financial services (i.e., lending to the buyer). Furthermore, many businesses provide a guarantee against product defects or provide warranties that their products will be in good operating condition for a certain length of time. These guarantees are also part of the value-added services provided by the business since they encourage more customers to buy from the enterprise. At the most conservative extreme, a business would delay revenue recognition to the point at which the warranty period has elapsed and it has received all payments from the customer. This is illustrated on the far right in Exhibit 4-1.

Exhibit 4-1 A business's value creation process



Note: Depending on the specific type of business, the ordering of activities in the value creation process may differ from that illustrated.

If the full range of alternatives discussed above and portrayed in Exhibit 4-1 were acceptable accounting policies, the potential disparities among the financial statements of different companies would be immense. This great scope of choice obviously impairs the comparability of financial statements among enterprises. More importantly, the methods that recognize revenue early in the value creation process entail substantially more uncertainties about the cash flows that the enterprise will ultimately realize, and correspondingly lower degrees of verifiability and reliability. As we discussed in Chapter 1, less reliable accounting numbers are less useful for contracting purposes, particularly for evaluating the performance of management. Less reliable performance measures allow a greater degree of moral hazard: the easier it is for management to manipulate the reported performance, the more difficult it is to motivate desirable value creation activities. For example, if a biotechnology company were to be able to recognize revenue when it discovers a new vaccine, determining the amount of revenue would require estimates of the likelihood of the drug passing all regulatory

approvals and, subsequent to that, future price and demand for the vaccine. In turn, future price and demand forecasts depend on the availability of similar or alternative treatments, the potential development of other new and superior vaccines in the future, whether government or private health insurance providers will cover the cost of the vaccine and the amount they would be willing to pay, and so on. As you can see, this would be a daunting forecasting exercise. Not only would the forecast results lack precision, they would be virtually impossible for an auditor to verify. Given the lack of verifiability, management will have significant latitude to bias the forecasts to its advantage, so this information has questionable value as a reflection of management performance.

In summary, early revenue recognition methods entail more uncertainty, requiring more estimates and judgments from management, resulting in financial statements that are less accurate gauges of managerial performance. Consequently, accounting standards specify revenue recognition criteria that allow only a subset of revenue recognition policies depicted in Exhibit 4-1. The next section discusses these criteria.

B. GENERAL REVENUE RECOGNITION CRITERIA

L.O. 4-2. Apply the general revenue and expense recognition criteria to a variety of contexts involving the sale of goods and provision of services.

IFRS specifies revenue recognition criteria in IAS 18. The criteria differ depending whether the revenue relates to the sale of goods or the provision of services. The two sets of criteria arise due to the fact that goods and services differ fundamentally from each other in many key aspects. Let us first examine the sale of goods.

1. Sale of goods

Paragraph 14 of IAS 18 provides the following revenue recognition criteria for the sale of goods.

> ¶14. Revenue from the sale of goods shall be recognized when all the following conditions have been satisfied:
> (a) the entity has transferred to the buyer the significant risks and rewards of ownership of the goods;
> (b) the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
> (c) the amount of revenue can be measured reliably;
> (d) it is probable that the economic benefits associated with the transaction will flow to the entity; and
> (e) the costs incurred or to be incurred in respect of the transaction can be measured reliably.

Certainly, these look like sensible criteria consistent with what you know from introductory-level accounting. For example, a car dealership selling a car with a cost of $25,000 for $28,000 in cash would result in the entries shown in Exhibit 4-2:

Exhibit 4-2 Journal entries for sale of a car

Dr. Cash	$28,000	
Cr. Sales revenue		$28,000
Dr. Cost of goods sold	$25,000	
Cr. Inventories		$25,000

According to the revenue recognition criteria, the revenue entry is appropriate because (a) the risks and rewards of ownership have been transferred to the

buyer; (b) the car dealer no longer has control over how the car is used; (c) the amount of revenue is the cash collected; (d) the dealership has already received the cash from the sale; and (e) the dealership usually incurs no further costs subsequent to the sale.[1] As for the second journal entry for cost of goods sold, it is recorded to match expenses with revenue; we will explore this further in the next section, on expense recognition.

In general terms, the revenue recognition criteria for the sale of goods require a high degree of certainty (but not complete certainty) about the ultimate cash flows that the firm will realize. In terms of Exhibit 4-1, IFRS recommends revenue recognition at point 5. Reaching this point in the value creation process means that the following risks/uncertainties have been eliminated or reduced to a sufficiently low level:

- procurement risk associated with the ability to buy, build, or otherwise supply the product;
- demand risk associated with the ability of the enterprise to sell the product; and
- price risk associated with the amount to be realized from product sales.

However, the revenue recognition criteria permit some risks to remain. In particular:

- credit risk associated with selling on account rather than for cash; and
- indemnity risk associated with explicit or implicit guarantees of product quality.

The latter risk arises from, for example, a 14-day product return period at a retail store, a one-year warranty on a television set, or the need to meet fire safety standards for toasters. Thus, indemnity risk includes not only product refunds and repairs, but also potential legal liability for defective products.

A reasonable level of credit and indemnity risk is acceptable for revenue recognition to occur. If these risks are sufficiently high, then criteria (d) and (e) require that revenue be deferred to a later date at which these risks are reduced to a sufficiently low level. This assessment is subjective and a matter of professional judgment.

2. Provision of services

Paragraphs 20 and 26 of IAS 18 contain the revenue recognition criteria for the provision of services.

> ¶20. When the outcome of a transaction involving the rendering of services can be estimated reliably, revenue associated with the transaction shall be recognized by reference to the stage of completion of the transaction at the end of the reporting period. The outcome of a transaction can be estimated reliably when all of the following conditions are satisfied:
> (a) the amount of revenue can be measured reliably;
> (b) it is probable that the economic benefits associated with the transaction will flow to the entity;
> (c) the stage of completion of the transaction at the end of the reporting period can be measured reliably; and
> (d) the costs incurred for the transaction and the costs to complete the transaction can be measured reliably.

1. Automobile manufacturers, rather than dealerships, offer warranties on vehicles.

¶26. When the outcome of a transaction involving the rendering of services cannot be estimated reliably, revenue shall be recognized only to the extent of the expenses recognized that are recoverable.

The four criteria in paragraph 20 have differences as well as similarities with the criteria for the sale of goods:

- Noticeably excluded from paragraph 20 are criteria (a) and (b) in paragraph 14. Those criteria relate to the ownership and control of the goods, so their omission makes logical sense.
- Criteria (a) and (b) in paragraph 20 are the same as criteria (c) and (d) in paragraph 14. In both cases, the revenue must be measured reliably and the enterprise must have reasonable assurance of receiving the promised benefits, usually cash, for the transfer of goods or provision of services.
- Criterion (c) is unique for services; whereas the transfer of a good occurs at a point in time, the provision of a service can occur over an extended period of time.
- Criterion (d) loosely corresponds to criterion (e) in paragraph 14.

The following table (Exhibit 4-3) provides a side-by-side comparison of the revenue recognition criteria in paragraphs 14 and 20.

Exhibit 4-3 Comparison of IAS 18 revenue recognition criteria for goods and services

Criteria for the sale of goods ¶14	Criteria for provision of services ¶20
Recognize revenue when all of the following conditions have been satisfied.	When all of the following conditions are satisfied, revenue shall be recognized by reference to the stage of completion of the transaction at the balance sheet date.
(a) The entity has transferred to the buyer the significant risks and rewards of ownership of the goods. (b) The entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold.	Ownership and control not applicable for services.
(c) The amount of revenue can be measured reliably.	(a) The amount of revenue can be measured reliably.
(d) It is probable that the economic benefits associated with the transaction will flow to the entity.	(b) It is probable that the economic benefits associated with the transaction will flow to the entity.
Stage of completion not applicable to sale of goods.	(c) The stage of completion of the transaction at the balance sheet date can be measured reliably.
(e) The costs incurred or to be incurred in respect of the transaction can be measured reliably.	(d) The costs incurred for the transaction and the costs to complete the transaction can be measured reliably.

For many day-to-day services that we commonly encounter, the revenue recognition criteria are readily satisfied once the service is complete. In the simple case of a haircut, the price is reliably measured; there is no uncertainty regarding payment; the service is complete at the end of the cut; and there are no future costs to be incurred by the hair salon. In this simple situation, the revenue is recorded at the point of sale much like the sale of goods. However, many services are provided over longer periods that cover more than one accounting period. For such cases, we have to consider whether revenue should be recognized at the beginning, during, or at the end of the service period. In other words, we need to allocate the revenue between two or more periods.

Consider the construction of the Port Mann Bridge in Metro Vancouver for $3 billion. If the construction is to occur over four years, then the $3 billion will need to be allocated over those four years. Because many factors contribute to an unequal rate of progress on such projects, a simple straight-line approach whereby $750 million is allocated to each of the four years is not suitable for

most circumstances. Instead, the revenue recognition criteria require that revenue be allocated according to the stage of completion, meaning that the company records more revenue in years in which the company makes more progress. The details of the computations to apply this method will be discussed in Section E below.

As noted previously, in cases where the enterprise is unable to satisfy the revenue recognition criteria *for the sale of goods*, then the revenue is simply not recognized until a future date when the criteria can be satisfied. *For services*, the result is different. If criteria (a) through (d) of paragraph 20 cannot be satisfied, then the enterprise still recognizes some revenue (see paragraph 26). The amount of that revenue will be equal to the amount of costs incurred on the services provided and recoverable from the customer. In other words, a company cannot recognize any profits on the transaction until it satisfies the four criteria in paragraph 20. This is called the *cost recovery method*, which will be illustrated in Section E (subsection 6) as part of the discussion of construction contracts.

C. EXPENSE RECOGNITION

IFRS does not provide much in the way of specific guidance for the recognition of expenses. Instead, the guidance is provided as part of the conceptual framework discussed in Chapter 2.[2] The general principle is matching: the simultaneous recording of an expense and the revenue to which the expense relates. For example, Exhibit 4-2 records the cost of goods sold at the same time as the related revenue.

Some costs do not have a direct link with revenues. For example, the using up of office equipment is part of the operations of the enterprise and allows it to generate revenues; however, one cannot (at least not easily) make a direct link with specific revenues. In such instances, the recommended approach is a systematic and rational allocation of the costs. A common example of such an allocation is the depreciation of property, plant, and equipment. Another example is accruing interest expense in the period in which the borrowed funds are being used in operations.[3]

Some transactions give rise to expenses simply by virtue of not satisfying the condition for recognition as an asset. Recall from Chapter 2 that an asset's *definition* includes three characteristics (it must arise from past events, be controlled by the enterprise, and have future economic benefits), and *recognition* requires satisfying two additional criteria (the future benefits are probable, and the asset's value can be measured reliably). For example, if an enterprise spends $5 million but cannot demonstrate future benefits attributable to that $5 million, then the amount cannot be recorded as an asset and it must be expensed instead. Thus, the default position is that expenditures are expenses unless they satisfy the definition and recognition criteria for assets.

D. SPECIFIC REVENUE RECOGNITION SITUATIONS

This and the next section discuss situations in which revenue is recognized at a time that is different from the point of sale in order to illustrate the importance of the different revenue recognition criteria, such as measurement uncertainty and

2. See paragraphs 94–98 of "Framework for the Preparation and Presentation of Financial Statements" in IFRS.

3. For self-constructed assets, some interest costs may be capitalized instead of expensed. This issue will be addressed in Chapter 8 in relation to property, plant, and equipment.

the transfer of risks and rewards. This section provides relatively brief coverage of consignment sales, installment sales, franchise revenue, barter transactions, and revenue recognition at point of production. The next section will address long-term construction contracts in considerable depth.

1. Consignment sales

Recall from Section B on general revenue recognition criteria that one of the criteria for revenue recognition for the sale of goods is the *transfer of risks and rewards of ownership*. Situations in which sales are made on consignment highlight the importance of this criterion. **Consignment** is an arrangement where one party (the consignor) provides goods to a second party to sell; however, the second party (the consignee) has the right to return all or a portion of the goods to the first party if the goods are not sold. As a result, the consignor retains the risks of ownership. Therefore, the consignor does not record revenue when it delivers the product to the consignee; rather, it must defer the revenue to the date when the right of return expires. At that later date, the risk and rewards of ownership have been transferred, and the amount of sales can be determined with a reasonable degree of accuracy.

consignment An arrangement where one party (the consignor) provides goods to a second party to sell; however, the second party (the consignee) has the right to return all or a portion of the goods to the first party if the goods are not sold.

A common example of consignment sales is the distribution of magazines. There are a number of business reasons for using consignment rather than the more typical supply chain, but the most important is related to the uncertainty in demand. By offering a consignment arrangement, the publisher removes the demand risk from the retailer, which increases the number of retailers willing to stock the product as well as the volume of inventory held by retailers, thereby increasing the total volume of product sales. For magazines sold at convenience stores, supermarkets, and bookstores, ensuring that consumers are able to browse the magazines is a critical factor in maintaining and increasing circulation, while the marginal cost of printing extra copies is low relative to the costs of developing the magazine content.

For example, suppose Prestige Publications on March 1 delivers 100,000 copies of one of its monthly magazines to its distributor, which in turn delivers the magazines to retailers. Retailers have the right to return unsold copies to the distributor, who also has the right of return to the publisher. The retail price of each copy is $4.95, while the price charged to the distributor is $1.20. On April 15, the distributor returns 25,000 unsold copies to Prestige. Based on these facts, Prestige would recognize revenue on April 15 for 75,000 copies sold at $1.20 each, or $90,000. The inventory account would also be adjusted at this date.

2. Installment sales

Installment sales are arrangements whereby the vendor allows the buyer to make payments over an extended period of time even though the buyer receives the product at the beginning of the installment period. Often, legal title to the product does not transfer to the buyer until all the payments have been made. For example, a furniture retailer may allow consumers to pay for a sofa over 36 months. In such arrangements, there is a *higher degree of uncertainty over the amount that will ultimately be collected*, so it may be inappropriate to recognize all of the profits on the sale at the time of delivery to the buyer. Instead, it may be more appropriate to recognize profits in proportion to the amount of payment received. Whether collection is sufficiently uncertain to warrant the deferral of profit is a matter of professional judgment.

installment sale An arrangement whereby the seller allows the buyer to make payments over an extended period of time while the buyer receives the product at the beginning of the installment period.

To illustrate the accounting for installment sales when uncertainty about collections is sufficiently high such that profits need to be deferred, consider

the following example. Durable Furnishings makes installment sales of products with a retail price of $1,000,000 in the month of January. The cost of the products sold amounts to $800,000, so the average gross margin on these products is 20%. To record these transactions, Durable Furnishings would record the following for the initial sale:

Exhibit 4-4 Journal entry for initial recognition of Durable Furnishings' installment sales

Dr. Installment accounts receivable	1,000,000	
Cr. Inventory		800,000
Cr. Deferred gross profit [a liability account]		200,000

Thus, no revenue is recorded on the initial sale. Instead, we recognize the cost of the inventory ($800,000) and the deferred gross profit ($200,000), which appears as a liability on the balance sheet.

In February, Durable Furnishings receives $50,000 for these installment sales (after deducting amounts on account of interest).[4] To reflect these installment receipts and to recognize the revenue associated with those receipts, the company would record the following entries:

Exhibit 4-5 Journal entries to recognize installment receipts and revenue on Durable Furnishings' installment sales

Dr. Cash	50,000	
Cr. Installment accounts receivable		50,000
Dr. Deferred gross profit ($50,000 × 20%)	10,000	
Dr. Cost of goods sold ($50,000 × 80%)	40,000	
Cr. Sales revenue		50,000

Thus, the second entry recognizes revenue of $50,000 and related cost of sales $40,000, for a gross profit of $10,000 in the month of February. The liability for deferred gross profit declines by this same amount.

3. Franchise revenue

A **franchise** arrangement is one in which one party (the franchisor) licenses its trademarks, business practices, and so on to another (the franchisee). For example, 70% of McDonald's restaurants are operated under franchise arrangements between McDonald's Corporation and thousands of independent franchisees.[5] In these arrangements, the franchisee typically pays the franchisor two types of fees: an initial fee for establishing the franchise, and an ongoing fee. Accounting for the ongoing fee is usually straightforward: whether the fee is a fixed amount per period or a royalty related to revenues, the amount is revenue to the franchisor.

franchise A commercial arrangement in which one party (the franchisor) licenses its trademarks, business practices, and so on to another (the franchisee).

On the other hand, accounting for the initial fees requires more judgment. In some cases, the initial franchise fee can be quite substantial. Even though the franchisor has received payment, the issue is *whether the franchisor is entitled to recognize the entire initial fee as revenue* or whether it should defer the revenue to future periods. In other words, we need to consider the guidance provided by IAS 18 paragraph 20

4. Accounting for the interest portion of the installment receivables is very similar to that used for finance leases, which are discussed in Chapter 18. In fact, some of the characteristics of installment sales are very similar to finance leases.

5. McDonald's Corporation website.

(see Section B, subsection 2 earlier in this chapter). To what extent has the franchisor performed the services required to earn those fees? If the fee represents services to be provided during the term of the franchise agreement, over what period and in what amounts should the initial fee be amortized into income? There are no easy answers to these questions, and professional judgment must be applied on a case-by-case basis. For example, some portion of the initial franchise fee could represent compensation to the franchisor for a commitment to supply products to the franchisee at reduced margins. If the franchisor is the exclusive supplier of products such as hamburger patties, it may be very difficult to determine what the "normal" profit margin on the products should be.

To illustrate the accounting for franchise revenue, suppose Delicio Restaurants signs a franchise agreement to allow a franchisee to operate in northwest Calgary for a 10-year period. The agreement requires the franchisee to pay Delicio $200,000 initially, and a royalty of 2% of sales revenue thereafter. Sales at this franchise location for the first year are $2 million. The management of Delicio estimates that the value of services rendered to this franchisee—such as location and demographic analysis, initial staffing, and training—totalled $80,000. Management also believes that the remainder of the initial fee (i.e., $120,000) relates to services to be provided evenly over the 10-year period. To account for franchise revenue, Delicio would record the following entries:

Exhibit 4-6 Journal entries to record Delicio's franchise revenue from the northwest Calgary location

To record receipt of initial franchise fee		
Dr. Cash	200,000	
Cr. Franchise revenue		80,000
Cr. Deferred revenue		120,000
To recognize annual revenue on initial franchise fee		
Dr. Deferred revenue	12,000	
Cr. Franchise revenue ($120,000 ÷ 10 years)		12,000
To recognize annual revenue on sales royalty		
Dr. Cash	40,000	
Cr. Franchise revenue (2% × $2,000,000)		40,000

4. Barter transactions

barter transactions The exchange of goods or services with little or no monetary consideration.

Barter transactions involve the exchange of goods or services with little or no monetary consideration. *The accounting issue is one of measurement*: at what amount should the transactions be recorded? Such transactions should generally be recorded using estimates of the "fair value" of goods or services exchanged (i.e., loosely speaking, the prices that would be used if the transaction had been carried out using cash or similar monetary consideration). The concept of fair value will be discussed in a later chapter, and more detailed coverage of non-monetary transactions will follow in Chapter 8.

5. Revenue recognition at point of production

In a limited number of circumstances, it is possible for enterprises to satisfy the revenue recognition criteria at the point of production. One instance is the production of agricultural produce. Guidance in IAS 41 indicates that enterprises should record revenue for produce *on the date of harvest*. Chapter 9 will address this topic in more detail.

Another instance is the production of minerals that are widely traded on commodity exchanges (e.g., gold, steel). Enterprises could potentially satisfy the revenue recognition requirements of IAS 18 paragraph 14 (see Section B) by selling their production using forward contracts for delivery in the future but at fixed sale prices. Doing so transfers the risks and rewards of ownership of the minerals to the buyer prior to actual delivery. Hence, it is possible for the enterprise to recognize revenue once it has produced the minerals in the form that is ready for delivery according to the forward contract (e.g., gold bars, rolls of steel).

E. ACCOUNTING FOR CONSTRUCTION CONTRACTS

L.O. 4-3. Apply the specific revenue and expense recognition criteria for construction contracts, including the prospective treatment applicable to changes in estimates.

The key challenge in revenue recognition for services that extend over a period of time is the amount to allocate to each reporting period (a fiscal year or a quarter for interim reporting). As discussed above in Section B, the general revenue recognition criteria contained in IAS 18 indicate that revenue from services should be recognized according to the stage of completion. These general requirements are intended to cover practically all service activities. For services provided under long-term contracts, there is additional specific guidance in IAS 11.

The application of this IAS, "Construction Contracts," is broader than what is suggested by the title. To be clear, IAS 11 provides the following definition for a **construction contract**:

construction contract A contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology, and function or their ultimate purpose or use.

> ¶3. A construction contract is a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology, and function or their ultimate purpose or use.

Thus, "construction" can be interpreted quite broadly as any type of manufacturing, assembly, or other creation. Furthermore, since IAS 11 arises from the general criteria in IAS 18, it applies not only to the construction of buildings, roads, bridges, and so on, but also to other types of long-term contracts, such as a contract to write a complex computer program over several years.

In parallel with the general revenue recognition criteria, IAS 11 specifies the following:

> ¶22. When the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the construction contract shall be recognized as revenue and expenses respectively by reference to the stage of completion of the contract activity at the end of the reporting period . . .

A comparison of this paragraph with paragraph 20 of IAS 18 shows no substantive differences other than a change in wording to refer to "construction contract."

When construction is carried out under contract, the contract can be identified as being one of two types: fixed-price contracts or cost-plus contracts. Fixed-price contracts are ones in which the contractor/builder agrees to a price before construction begins; the price of cost-plus contracts will depend on how much is spent on the project, plus a profit margin. Inherently, these two types of contracts have very different risk profiles for the contractor and the buyer. Who bears the risks and uncertainties associated with forecasting the cost of the project? Whichever party bears the risk has the incentive to control costs. Fixed-price contracts impose all the risk on the contractor, so it has the incentive to control construction costs. In contrast, cost-plus contracts leave the uncertainty in the hands of the buyer, so the contractor is not motivated to contain costs. This is a simple case of moral

hazard, discussed in Chapter 1. Indeed, the contractor wants to maximize cost since the amount of profit on the cost-plus contracts increases with the total cost. Thus, buyers should be wary of cost-plus contracts and use them only when there is little uncertainty about the costs or when the buyer is able to supervise the project closely to contain the costs.

As an illustration of the pitfalls of cost-plus contracts, the City of Vancouver contracted with Millennium Group, with a cost-plus contract, to build 250 units of social housing on the site of the Olympic Village for the 2010 Winter Olympic Games. The original bid had a budget of $65 million. By February 2009, the estimated cost had increased to $110 million, an increase of 69%. While many factors played into the ballooning budget, the cost-plus contract is certainly one of the most important. By comparison, the other parts of the Olympic Village, also built by Millennium Group but not using a cost-plus contract, saw cost increases above budget in the neighbourhood of 10%.

Reflecting the fundamental differences in risk profiles, IAS 11 provides different revenue recognition criteria for fixed-price and cost-plus contracts, as shown in Exhibit 4-7.

Exhibit 4-7 Comparison of IAS 11 revenue recognition criteria for fixed-price and cost-plus contracts

Fixed price ¶22 and ¶23	Cost plus ¶22 and ¶24
Recognize revenue and expenses by reference to the stage of completion when all the following conditions are satisfied.	Recognize revenue and expenses by reference to the stage of completion when all the following conditions are satisfied.
(a) Total contract revenue can be measured reliably.	
(b) It is probable that the economic benefits associated with the contract will flow to the entity.	(a) It is probable that the economic benefits associated with the contract will flow to the entity.
(c) Both the contract costs to complete the contract and the stage of contract completion at the end of the reporting period can be measured reliably.	
(d) The contract costs attributable to the contract can be clearly identified and measured reliably so that actual contract costs incurred can be compared with prior estimates.	(b) The contract costs attributable to the contract, whether or not specifically reimbursable, can be clearly identified and measured reliably.

The second and fourth criteria are common to both types of contracts: credit risk must be sufficiently low (i.e., "economic benefits . . . will flow to the entity"), and relevant costs must be clearly identifiable. Fixed-price contracts obviously must also have a pre-specified price. In addition, the contractor in a fixed-price contract must also be able to reliably estimate the stage of completion and future costs for the project in order to apply the **percentage of completion method**, which we will discuss next.

percentage of completion method An accounting method that recognizes revenues and expenses on a construction contract in proportion to the degree of progress on the contracted project.

1. Revenue recognition for cost-plus contracts

The accounting for cost-plus contracts is relatively straightforward. Suppose Adobe Building Company agrees to construct 360 condominium units for Century Homes, a real estate developer. Century Homes has staff with substantial experience to supervise the project, so it is willing to bear the risks inherent in a cost-plus contract. In return, Adobe agrees to a contract price of cost plus 5%, which is much lower than the 20% margin it charges on fixed-price contracts.

The project covers three years, with the following cost estimates and actual costs:

Exhibit 4-8 Adobe Building Company: Example of a cost-plus contract

(Amounts in $ millions)	2011	2012	2013	Total
Costs each year, estimated at beginning of contract	20.0	50.0	30.0	100.0
Actual costs incurred on the contract	24.0	64.0	22.0	110.0
Margin (5% of actual cost)	1.2	3.2	1.1	5.5
Revenue recognized each year	25.2	67.2	23.1	115.5

While accurate cost estimates are crucial to the management of long-term projects, these estimates do not play a role in the accounting for cost-plus contracts. The actual costs incurred by Adobe plus the 5% margin completely determine the amount of revenue to recognize in each year and in total.

2. Revenue recognition for fixed-price contracts: Application of changes in estimates

The accounting for fixed-price contracts would also be quite simple in a hypothetical and *unrealistic* scenario where there are no uncertainties about how much it will cost and how fast the project can be completed. For instance, suppose Century Homes awarded the contract for the 360 condominium units to Delta Engineering, which submitted a fixed-price proposal of $120 million.

If all the costs for the three years and the degree of completion can be estimated in advance *completely accurately*, then we could just use the percentage completed within each year to compute the amount of revenue to recognize. There would be no need to revise calculations to take into account new information as time goes on, because all the amounts are completely predictable. These amounts are shown in Exhibit 4-9.

Exhibit 4-9 Delta Engineering: Example of a fixed-price contract with no uncertainty

(Amounts in $ millions)	2011	2012	2013	Total
Contract price				120
Percentage completed during year*	30%	50%	20%	100%
Revenue recognized each year†	36	60	24	120
Costs incurred and expensed each year‡	32	48	20	100
Gross profit on project recognized each year	4	12	4	20

*Estimated by the architectural engineer.
†Revenue = Percentage completed during year × contract price.
‡The percentage of costs each year do not necessarily follow the physical rate of progress, because some parts of the project may be more labour intensive, use more materials, and so on.

In this unrealistic case without uncertainty, the amount of revenue recognized is just like the amount of depreciation using the units of production method that you learned in introductory accounting (and also discussed in Chapter 8). For instance, 50% of the project was completed in 2012, so 50% of the revenue is recorded in that year. The costs recorded, however, are not based on these percentages; rather, the actual costs incurred in each year are expensed as cost of sales. Thus, *the percentage of completion allocates revenue*, not expenses.

Turning to a more realistic scenario, suppose actual costs differ from the estimates made by Delta Engineering. Assume that we have the following data instead:

Exhibit 4-10 Delta Engineering: Example of a fixed-price contract *with* uncertainty, data only

(Amounts in $ millions)	2011	2012	2013	Total
Contract price				120
% completed each year—in planning documents	30%	50%	20%	100%
% completed each year—**actual estimate by engineer** at the end of each year	20%	55%	25%	100%
Costs each year—in planning documents	32	48	20	100
Actual costs incurred on project each year	24	64	16	104
Additional cost to complete, estimated at the end of each year	72	20	0	—

For the first year, 2011, the amount of revenue that would have been recognized if the project developed as expected would be $36 million—30% of the contracted total of $120 million. However, actual experience differs from expectations, so how much revenue should be recognized instead? It does not make sense to use the 30% estimated in the planning documents, as that is stale information. Instead, Delta should use the most recent information available. The engineer has estimated that the project is only 20% complete at the end of 2011. Based on this percentage complete, the revenue for 2011 should be 20% × $120 million = $24 million.

Given the existence of uncertainty, Delta needs to revise its estimates using the best available information at the end of each year. In other words, it needs to apply the guidance for changes in estimates and use the prospective treatment to incorporate this new information. The past year(s) should not be revised, because the information was not available at that time. For the set of data shown in Exhibit 4-10, the amounts of revenues and expenses to recognize each year are shown in the following table:

Exhibit 4-11 Delta Engineering: Example of a fixed-price contract with uncertainty, data and solution

(Amounts in $ millions)	Labels and calculations	2011	2012	2013	Total
Contract price	A				120
% completed each year, planning documents		30%	50%	20%	100%
% completed each year, engineer's estimate	B	20%	55%	25%	100%
Costs estimated at beginning of contract		32	48	20	100
Actual costs each year	C	24	64	16	104
Cumulative % completed to date	D = sum of B*	20%	75%	100%	—
Cumulative revenue to date	E = A × D	24	90	120	—
Revenue recognized in prior years	F = prior E	0	24	90	—
Revenue for current year	G = E − F	24	66	30	120
Cost of sales for current year	H = C	24	64	16	104
Gross profit for current year	J = G − H	0	2	14	16

*Sum of current and prior year's % completed.

Again, it is worth pointing out that the percentage of completion method allocates revenue, not expenses. The amounts for cost of sales are the actual costs incurred on the project in each year. As a result, the gross profit on the contract can have a pattern that is very different from that of the percentage completed. In this example, the gross profit for 2011 is zero even though the project is 20% complete.

To summarize, the percentage of completion method uses the following formula to determine the amount of revenue to recognize in each period:

Exhibit 4-12 Equation to compute percentage of completion revenue

$$\textit{Revenue} = \textit{Percentage complete} \times \textit{Contract price} - \textit{Revenue previously recognized}$$

3. Revenue recognition for fixed-price contracts: The cost-to-cost approach

In the examples just discussed, we assumed that the company has engineering estimates for the progress of the project. Another way to obtain an estimate of the percentage complete is to use the data available on the cost already incurred, plus estimates of how much additional cost needs to be incurred to finish the project. Thus, the formula for the percentage complete using the cost-to-cost approach is as follows:

Exhibit 4-13 Equation for cost-to-cost estimate of percentage complete

$$\textit{Percentage complete} = \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}}$$

Using the information from Exhibit 4-10, the percentage of completion method under the cost-to-cost approach would result in the following figures:

Exhibit 4-14 Delta Engineering: Example of percentage of completion method using cost-to-cost approach

(Amounts in $ millions)	Labels and calculations	2011	2012	2013	Total
Contract price	A				120
% completed each year, engineer's estimate	B	20%	55%	25%	100%
% complete to date, engineer's estimate		20%	75%	100%	
Actual costs each year	C	24	64	16	104
Cumulative cost incurred to date	D = sum of C*	24	88	104	
Additional cost to complete, estimated at the end of each year	E	72	22	0	—
Total estimated cost of contract	F = D + E	96	110	104	
Cumulative % complete to date—cost-to-cost estimate	G = D/F	25%	80%	100%	—
Cumulative revenue to date	H = A × G	30	96	120	—
Revenue recognized in prior years	J = prior H	0	30	96	—
Revenue for current year	K = H − J	30	66	24	120
Cost of sales for current year	L = C	24	64	16	104
Gross profit for current year	M = K − L	6	2	8	16

*Sum of current and prior years' costs.

If you compare the revenue numbers in Exhibit 4-11 and Exhibit 4-14, you will see that the total is the same, $120 million, but the pattern over the three years differs significantly. Likewise, the gross profit using either method totals $16 million, but the amounts in each of the three years differ quite dramatically.

Returning to the formulas, we can substitute the equation in Exhibit 4-13 into the equation in Exhibit 4-12 to obtain the following formula:

Exhibit 4-15 Equation for revenue under percentage-of-completion method using the cost-to-cost approach

$$\textit{Revenue} = \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Contract revenue} - \textit{Revenue previously recognized}$$

For example, applying this formula to Delta Engineering, we can obtain the revenue amount for 2012 as $88/110 \times 120 - 30 = \$66$ million.

Note that for the cost of sales to follow the matching principle, it should follow a formula analogous to that used to compute revenue:

Exhibit 4-16 Equation for cost of sales under percentage of completion method using the cost-to-cost approach

$$\begin{aligned}\textit{Cost of sales} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Estimated total cost} - \textit{Cost of sales previously recognized} \\ &= \textit{Cost incurred to date} - \textit{Cost of sales previously recognized} \\ &= \textit{Cost incurred in current period}\end{aligned}$$

This formula or calculation is clearly not needed since we end up using the actual cost information on hand, and this was demonstrated in Exhibit 4-14. However, based on the above formulas, we can also derive a formula for the gross profit for each period.

Exhibit 4-17 Gross profit under percentage of completion method using the cost-to-cost approach

$$\begin{aligned}\textit{Revenue} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Contract revenue} - \textit{Revenue previously recognized} \\ -\ \textit{Cost of sales} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Estimated total cost} - \textit{Cost of sales previously recognized} \\ \hline = \textit{Gross profit} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Estimated gross profit} - \textit{Gross profit previously recognized}\end{aligned}$$

For Delta Engineering, we can calculate the gross profit amount for 2012 as $88/110 \times (120 - 110) - 6 = 80\% \times 10 - 6 = \$2$ million. Using this formula is more convenient if one is interested only in the amount of profit and not the breakdown between revenue and cost of sales.

So far, we have looked at how one computes the amounts of revenue and expenses to recognize for a construction contract. We now turn our attention to recording in the accounts these and other amounts relating to the contract.

L.O. 4-4. Apply the principle of conservatism to the accounting for construction contracts.

4. Accounting cycle for construction contracts

The accounting entries for a construction contract can be broken down into five distinct phases: (i) incurring costs on the project; (ii) billing the client; (iii) receiving

payments from the client; (iv) accruing revenue and any other adjustments for the accounting period; and (v) closing the accounts at the end of the contract. Exhibit 4-18 summarizes the journal entries for these five parts, along with the timing of when these entries would be made.

Exhibit 4-18 Journal entries through the accounting cycle for a construction contract

Phase	Timing	Journal entry
1. Incurring cost on the project	As they occur	Dr. Construction in progress* Cr. Cash, A/P, etc.
2. Billing the client	When invoice is sent (usually scheduled in contract)	Dr. Accounts receivable Cr. Billings on construction in progress
3. Receiving payments from client	According to payment terms of invoice (usually specified in contract)	Dr. Cash Cr. Accounts receivable
4. Revenue and expense recognition	Once per period for each contract	Dr. Cost of sales Dr. Construction in progress Cr. Revenue
5. Complete the project	Once per contract	Dr. Billings on construction in progress Cr. Construction in progress

*May also be called "work in progress" or "work in process."

Phase 1: The contractor incurs costs for materials, labour, and overhead for the project. These costs are capitalized in "construction in progress," which is an inventory account.

Phase 2: The construction contract will usually specify when the contractor will be able to issue invoices. When the contractor does issue an invoice, an account receivable is recorded as usual. The credit goes to an account called "billings on construction in progress." This is a contra account associated with inventories (i.e., construction in progress). This journal entry should look different from what you may be used to. In other circumstances, the counterpart to the debit to accounts receivable is a credit to revenue. However, for construction contracts, the amount of revenue needs to be computed, as we saw previously, and it is recorded in Phase 4.

Phase 3: The contractor records the cash received on invoices previously issued.

Phase 4: At the end of each year (or another reporting period), the contractor records the revenues and costs for the project. This is the point at which the effects of the contract flow through the income statement. The unusual aspect of this journal entry is that both revenue and cost of sales are in the same entry, with the difference going to increase construction in progress (or decrease, in the case of a loss). In other words, *the contractor adjusts the inventory value for the project's gross profit or loss for the year*. This is distinctly different from the standard revenue and cost of sales entries, which are two separate entries.

Phase 5: When the project is complete, the contractor removes the balances relating to the contract. Just before this closing entry, notice that the inventory account (construction in progress) has accumulated all the costs of the project (Phase 1 journal entries) and the gross profits or losses (Phase 4 entries). Thus, the balance in the account should equal the contract price. Likewise, the contra-inventory account (billings) is

the accumulation of all the invoices sent to the client, so this account should also have a balance equal to the contract price. The closing entry removes these two offsetting amounts from the books.

In summary, the accounting in Phases 1 and 3 is the same as what would be done for non-construction contracts. The unique aspects are in Phases 2 and 4. Phase 5 is a housekeeping entry so that offsetting amounts are not kept in the ledger indefinitely.

Let us now demonstrate how one would apply these entries, using the information in Exhibit 4-14 for our Delta Engineering example. In addition, assume that the company issued invoices totalling $28 million, $51 million, and $41 million, and it received payments of $25 million, $52 million, and $43 million in 2011, 2012, and 2013, respectively.

Exhibit 4-19 Journal entries for Delta Engineering's construction contract (amounts in $ millions)

Phase	Journal entry	2011		2012		2013	
		Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
1. Incurring cost	Dr. CIP*	24		64		16	
	Cr. Cash		24		64		16
2. Billing the client	Dr. Accounts receivable	28		51		41	
	Cr. Billings on CIP		28		51		41
3. Receiving payments	Dr. Cash	25		52		43	
	Cr. Accts receivable		25		52		43
4. Period-end accruals & adjustments	Dr. Cost of sales	24		64		16	
	Dr. CIP	6		2		8	
	Cr. Revenue		30		66		24
5. Complete the project	Dr. Billings on CIP					120	
	Cr. CIP						120

*CIP = construction in progress

The balance sheet accounts for this project in the general ledger (other than cash), as represented by T-accounts, would have the following history:

Exhibit 4-20 T-accounts for Delta Engineering's construction contract (amounts in $ millions)

Year		Accts Rec.			CIP (inventory)			Billings (contra-inventory)	
2011	Issue invoice	28		Incur cost	24		Issue invoice		28
	Cash received		25	Gross profit adj.	6				
	Balance	3		Balance	30		Balance		28
2012	Issue invoice	51		Incur cost	64		Issue invoice		51
	Cash received		52	Gross profit adj.	2				
	Balance	2		Balance	96		Balance		79
2013	Issue invoice	41		Incur cost	16		Issue invoice		41
	Cash received		43	Gross profit adj.	8				
				Balance	120		Balance		120
				Completion		120	Completion	120	
	Balance	0		Balance	0		Balance		0

Thus, at the end of the contract and after all payments have been received, all of the accounts related to the project have zero balances.

5. Application of prudence (conservatism) in accounting for construction contracts

Recall from Chapter 2 that following the principle of prudence results in financial statements that reflect bad news earlier than good news. The accounting for construction contracts follows this prudence principle. As discussed above, the contractor recognizes only a portion of revenue and profits in each year by following the percentage of completion method. However, if the contractor has information that indicates there will be a loss on the contract, then all of that loss must be recognized immediately. IAS 11 provides the following guidance:

> ¶36. When it is probable that total contract costs will exceed total contract revenue, the expected loss shall be recognized as an expense immediately.

In other words, when a construction contract is expected to be profitable, the company recognizes the profits over the duration of the contract, but when the contract is expected to generate a loss, all of the loss is recognized at once.

To illustrate, suppose we change the facts in the Delta Engineering example in Exhibit 4-14 such that the actual cost incurred up to the end of the second year (2012) is $104 million and an additional $26 million is required to complete the project. All other data remain the same. If we were to apply the percentage of completion method as we did previously, we would obtain the following figures:

Exhibit 4-21 Delta Engineering: Example of percentage of completion method using cost-to-cost approach *without* applying the prudence principle

(Amounts in $ millions)	Labels and calculations	2011	2012	2013	Total
Contract price	A				120
Actual costs each year	C	24	**80**	16	120
Cumulative cost incurred to date	D = sum of C*	24	**104**	120	
Additional cost to complete, estimated at the end of each year	E	72	**26**	0	—
Total estimated cost of contract	F = D + E	96	**130**	120	
Cumulative % complete to date—cost-to-cost estimate	G = D/F	25%	80%	100%	—
Cumulative revenue to date	H = A × G	30	96	120	—
Revenue recognized in prior years	J = prior H	0	30	96	—
Revenue for current year	K = H − J	30	66	24	120
Cost of sales for current year	L = C	24	80	16	120
Gross profit (loss) for current year	M = K − L	6	(14)	8	0

*Sum of current and prior years' costs.

While there is a loss of $14 million reported in 2012, this is not the full extent of the loss. At the end of 2012, Delta Engineering expects the project to cost a total of $130 million, which is $10 million above the contracted price. In addition, the company previously recorded a $6 million profit in 2011, and that amount needs to be reversed. Thus, to comply with paragraph 36 of IAS 11,

Delta Engineering must report a loss of $16 million. The revised calculations taking prudence into account are shown in Exhibit 4-22.

Exhibit 4-22 Delta Engineering: Example of percentage of completion method using cost-to-cost approach and applying the prudence principle

(Amounts in $ millions)	Labels and calculations	2011	2012	2013	Total
Contract price	A				120
Actual costs each year	C	24	**80**	16	120
Cumulative cost incurred to date	D = sum of C*	24	**104**	120	
Additional cost to complete, estimated at the end of each year	E	72	**26**	0	—
Total estimated cost of contract	F = D + E	96	**130**	120	
Cumulative % complete to date—cost-to-cost estimate	G = D/F	25%	80%	100%	—
Cumulative revenue to date	H = A × G	30	96	120	—
Revenue recognized in prior years	J = prior H	0	30	96	—
Revenue for current year	K = H – J	30	66	24	120
Cost of sales for current year	L = C	24	80	16	120
Gross profit (loss) before prudence	M = K – L	6	(14)	8	0
Expected loss on portion not yet complete	N = P – M	0	**(2)**	**2**	0
Gross profit (loss) for current year	P (see below)	6	**(16)**	**10**	0

*Sum of current and prior years' costs.

The "expected loss" of $2 million in 2012 represents 20% of the $10 million loss for the portion of the project that is yet to be completed at the end of 2012. The other $8 million loss has been accounted via the standard percentage of completion method. Thus, the $16 million loss reported in 2012 comprises the following components:

Exhibit 4-23 Delta Engineering: Decomposition of loss recognized in 2012

	$ millions
Loss on 80% portion of project already complete (80% × $10 m)	8
Reversal of profit previously recognized in 2011	6
Loss without applying prudence principle	14
Expected loss on 20% portion of project not yet complete (20% × $10 m)	2
Total loss recognized in 2012	16

A quick way to determine this loss amount is to use a modified version of Exhibit 4-17:

Exhibit 4-24 Equation for gross profit under the percentage of completion method using the cost-to-cost approach

$$\textit{Gross profit (loss)} = 100\% \times \textit{Estimated gross profit (loss)} - \textit{Gross profit (loss) previously recognized}$$

For Delta Engineering, the formula results in gross profit (loss) = 100% × −10 − 6 = −$16 million.

6. Revenue recognition when outcome of construction contracts is uncertain: Cost recovery method

As discussed previously in this section, the percentage of completion method recognizes revenue, expenses, and profits in proportion to the degree of progress on the contracted project. However, in some instances there is sufficient uncertainty over the outcome of a construction contract that recognition of a portion of expected profits is unjustified. Specifically, if the criteria shown in Exhibit 4-7 cannot be satisfied, then the cost recovery method should be used (IAS 11 paragraph 32 and IAS 18 paragraph 26). The **cost recovery method** recognizes (1) contract costs incurred in the period as expenses, and (2) an amount of revenue equal to the costs that are expected to be recoverable as part of the contract. Thus, this method defers any profit on the contract to the completion date. In addition, the prudence principle continues to apply, so that any expected losses will be recognized immediately.

cost recovery method Recognizes contract costs incurred in the period as expenses and an amount of revenue equal to the costs that are expected to be recoverable as part of the contract.

Continuing with the Delta Engineering example, suppose that in 2012 Delta determines that cost incurred is no longer a reliable estimate of the degree of progress, so that the cost-to-cost approach cannot be applied. Furthermore, the company is unable to use any other method to reliably estimate the degree of progress on the project. As a result, this contract no longer satisfies the requirements of paragraph 23 of IAS 11, specifically criterion (c). In this situation, Delta would apply the cost recovery method, which would result in the recognition of revenue and expenses as shown at the bottom of the following table.

Exhibit 4-25 Delta Engineering: Example of cost recovery method using information from Exhibit 4-14

(Amounts in $ millions)	Labels and calculations	2011	2012	2013	Total
Contract price	A				120
Actual costs each year	C	24	64	16	104
Cumulative cost incurred to date	D = sum of C*	24	88	104	
Additional cost to complete, estimated at the end of each year	E	72	22	0	
Total estimated cost of contract	F = D + E	96	110	104	
Percentage of completion method for 2011 as calculated in Exhibit 4-14					
Cumulative % complete to date—cost-to-cost estimate	G = D/F	25%			
Cumulative revenue to date	H = A × G	30			
Revenue recognized in prior years	J = prior H	0			
Revenue for current year	K = H – J	30			
Cost of sales for current year	L = C	24			
Gross profit for current year	M = K – L	6			
Cost recovery method for 2012 Cumulative revenue = cost incurred	N = D		**88**		
Revenue recognized in prior years	P = prior H		**30**		
Revenue for current year	Q = N – P		**58**		
Cost of sales for current year	R = C		**64**		
Gross profit (loss) for current year	S = Q – R		**(6)**		

*Sum of current and prior years' costs.

Notice that the amount of revenue recognized in 2012 is calculated as the cumulative revenue that should be recognized to the end of 2012 less any prior revenue recorded ($88 − 30 = $58 million). The cost incurred in the year is $64 million, so a $6 million loss is recognized in the year. This loss is a reversal of the profit recorded in the first year, such that *cumulatively, there is zero profit on the contract* at the end of the second year.

When Delta completes the contract, the uncertainties surrounding the degree of completion no longer exist. Therefore, Delta is able to recognize the profit at that point. Exhibit 4-26 shows the amounts of revenue, expense, and profit on the project recorded in the final year of the contract as well as for the preceding two years.

Exhibit 4-26 Delta Engineering: Example of cost recovery method using information from Exhibit 4-14

(Amounts in $ millions)	2011*	2012†	2013‡	Total
Cumulative revenue to date	30	88	**120**	—
Revenue recognized in prior years	0	30	**88**	—
Revenue for current year	30	58	**32**	120
Cost of sales for current year	24	64	**16**	104
Gross profit (loss) for current year	6	(6)	**16**	16

*Percentage of completion method; amounts from Exhibit 4-14 or Exhibit 4-25.
†Cost recovery method; amounts from Exhibit 4-25.
‡Contracted completed by end of year; amounts determined from totals for the contract less prior amounts recognized.

The total profit on the contract is $16 million, and the entire amount is reported in the final year of the contract under the cost recovery method.

7. Alternative in ASPE: Completed contract method

completed contract method
An accounting method that defers revenue and expense recognition until the date when the contractor completes the project.

Under IFRS, the percentage of completion method is the prescribed method of accounting for construction contracts, modified for circumstances in which the cost recovery method and the early loss recognition (prudence principle) apply. ASPE (Section 3400, paragraph.16) allows an alternative, called the **completed contract method**. As the name suggests, this method defers revenue and expense recognition until the date when the contractor completes the project, instead of periodically over the life of the contract under the percentage of completion method. The prudence principle still applies, such that any losses are still recognized in the period first anticipated. In short, profits are deferred but losses are not.

While this alternative exists, ASPE limits its application. As Section 3400 notes,

> ¶18. The completed contract method would only be appropriate when performance consists of the execution of a single act or when the enterprise cannot reasonably estimate the extent of progress toward completion.[6]

Thus, even under ASPE, the percentage-of-completion method is the predominant method to follow for long-term contracts.

F. RISK OF EARNINGS OVERSTATEMENT IN CONSTRUCTION CONTRACTS

L.O. 4-5. Evaluate the risks of revenue misstatements and the appropriateness of revenue recognition policies in specific circumstances by applying professional judgment.

The long-term nature of construction contracts inherently makes it a high-risk area for accounting and auditing. The need to allocate revenue between two or more accounting periods, and the substantial amount of judgment required to

6. Reproduced with permission of The Canadian Institute of Chartered Accountants.

make the estimates used in the calculations, provide significant pitfalls for intentional earnings management as well as unintentional judgment errors.

1. Intentional overstatement: Earnings management

From the above discussion, examples, and analysis, it should be clear that management makes a number of estimates that determine how much revenue and profit are recognized in a period. Consider the different results of using the engineer's estimate (Exhibit 4-11) versus the cost-to-cost approach (Exhibit 4-14) for the percentage complete. The key figures are repeated below for ease of comparison.

Exhibit 4-27 Delta Engineering: Comparison of results from using engineer's estimate vs. cost-to-cost approach for percentage complete

(Amounts in $ millions)	2011	2012	2013	Total
Cumulative % completed to date, **engineer's estimate**	20%	75%	100%	—
Revenue for current year	24	66	30	120
Cost of sales for current year	24	64	16	104
Gross profit for current year	0	2	14	16
Cumulative % complete to date, **cost-to-cost estimate**	25%	80%	100%	—
Revenue for current year	30	66	24	120
Cost of sales for current year	24	64	16	104
Gross profit for current year	6	2	8	16

While the total amount of gross profit is the same by the end of the contract ($16 million), the pattern of profits reported is dramatically different. The engineer's estimate results in most of the profit ($14 million out of $16 million) reported in the third year, and none in the first year. In contrast, the cost-to-cost approach shows $6 million profit in the first year. Both engineering estimates and the cost-to-cost approach are valid and acceptable for accounting purposes. Therefore, management has the ethical responsibility to choose the approach that best represents the underlying performance of the project. However, the latitude available also provides management an opportunity for earnings management.

Besides the ability to choose the approach for determining the percentage complete, management can open up additional earnings management opportunities by judiciously making estimates for the cost-to-cost approach. In particular, this approach uses estimates of future costs required to complete the project. Refer back to Exhibit 4-17, which is repeated here:

$$\begin{aligned}
\textit{Revenue} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Contract revenue} - \textit{Revenue previously recognized} \\
-\ \textit{Cost of sales} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Estimated total cost} - \textit{Cost of sales previously recognized} \\
= \textit{Gross profit} &= \frac{\textit{Cost incurred to date}}{\textit{Estimated total cost}} \times \textit{Estimated gross profit} - \textit{Gross profit previously recognized}
\end{aligned}$$

Underestimating future costs has two effects. First, it reduces the denominator in the percentage complete ratio. Second, it increases the estimated gross profit. Thus, the two effects are in the same direction: underestimating costs increases the profit recognized in the current period (and lowers profit in future periods).

For example, using Delta Engineering again in Exhibit 4-28, suppose that at the end of 2012, instead of estimating $22 million as the additional cost to complete the project, management reduces that estimate by $2 million.

Exhibit 4-28 Delta Engineering: Example of percentage of completion method using cost-to-cost approach

	From Exhibit 4-14			Decrease expected costs by $2 million	
(Amounts in $ millions)	**2011**	**2012**	**2013**	**2012**	**2013**
Cumulative cost incurred to date	24	88	104	88	104
Additional cost to complete, estimated at the end of each year	72	22	0	**20**	0
Total estimated cost of contract	96	110	104	108	104
Cumulative % complete to date—cost-to-cost estimate	25%	80%	100%	**81.5%**	100%
Cumulative revenue to date	30	96	120	**97.78**	120
Revenue recognized in prior years	0	30	96	30.00	97.78
Revenue for current year	30	66	24	**67.78**	22.22
Cost of sales for current year	24	64	16	64.00	16.00
Gross profit for current year	6	2	8	**3.78**	6.22

As a result of the reduction in estimated future costs, profit for 2012 increases from $2 million to $3.78 million, which is an 89% increase.

2. Unintentional overstatement: The winner's curse

As just discussed, estimated profits on long-term construction contracts can be biased if management has motives to manipulate earnings. In other instances, the overstatements are unintentional. Obviously, outright errors in the estimation process are a source of such unintentional overstatements. For example, a significant cost being omitted from the calculations, or an incorrect conversion from square feet to square metres, would be an error. For construction contracts, a second source of unintentional overstatement is important.

Consider a typical bidding process for large contracts to build bridges, highways, schools, or hospitals. For each project, the business, organization, or government provides the project specifications and invites contractors to submit bids based on those specifications. Typically, the project is awarded to the lowest-priced bidder while taking into consideration some qualitative factors.

On the surface, such a bidding process (technically called a first-price sealed bid auction) is a good way for the party requesting the bids to get the lowest price, and in the process find the most efficient contractor. However, consider the following scenario. The Manitoba government requires a bridge to be built over the Saskatchewan River. Given the architect's design specifications, the architect believes that an unbiased estimate of the cost of this bridge is $720 million, plus a profit margin of $80 million for the contractor, for a total of $800 million. Five different contractors submit bids based on the best information available to each of them. Contractors A, B, C, D, and E respectively

submit bids of $705 million, $737 million, $810 million, $855 million, and $893 million. If there are no convincing qualitative factors to choose one bid over another, then the $705 million bid wins. It is possible that Contractor A is better able to manage its crew, procure supplies more cheaply, and otherwise manage the project more efficiently than the other contractor. However, it is also possible that Contractor A has underestimated the amount of work required to build this bridge. For complex projects such as bridge building, there are myriad components to the projects and many sources of uncertainty, such as the factors affecting the construction of the caissons for the bridge foundations, the effect of rain, snow, and severe winter temperatures on the construction process, the price of steel over the duration of the construction, and so on. Given all these uncertainties, some contractors will overestimate while others will underestimate construction costs. Given the structure of the bidding process, the contract will tend to be awarded to the contractor who underestimates costs the most. In this example, it is possible that Contractor A has significantly underestimated costs in its submission of the winning bid of $705 million. In a real but somewhat sobering example, a foreign contractor bidding on a bridge project in Canada omitted to budget for provincial sales tax that is applied to construction materials used, simply because that contractor was not familiar with this basic but important feature of the Canadian tax environment.

The information problem facing the contractors is called a **winner's curse**: the winning bid will tend to have underestimated the cost of the project the most, leading to a higher likelihood of a loss on the contract when actual costs are ultimately incurred.

winner's curse The higher likelihood of loss faced by winners of auctions when bidders have different information from each other.

It is important to note that the unintentional underestimation of costs and overstatement of expected profits is not due to errors. An error is a misstatement that is made when it should not have been, given the information available at the time. In contrast, the misstatement from the winner's curse occurs despite using all the information available correctly; the cost underestimate occurs because each contractor has different information arising from differences in experience with similar projects in the past and knowledge about the factors affecting the proposed project.

G. PRESENTATION AND DISCLOSURE

1. General presentation and disclosure requirements

An entity separately reports the amount of revenue by type of activity: from the sale of goods, provision of services, royalties, interest, and dividends. The entity also separately reports the amounts of revenue in each of these five categories that arise from non-monetary exchanges. The notes to the financial statements need to describe the revenue recognition policies followed. In the case of services, the method of determining the stage of completion is also required to be reported.

2. Presentation and disclosure for construction contracts

Aside from the obvious implications for revenue on the income statement, construction contract accounting also affects the balance sheet. Depending on the amount of costs and profits accumulated in construction-in-progress inventory compared with the amount billed to the client, there could be a net debit or credit, corresponding to a net asset or net liability, respectively. For example, refer to the T-accounts in Exhibit 4-20. At the end of 2011, Delta Engineering

has $30 million in the construction-in-progress account and $28 million in the billings account, so the net debit amount of $2 million for this contract would be reported as an asset. If the company had a second contract with a net credit position of $5 million (i.e., the billings account exceeds the construction-in-progress), the company would report a liability of $5 million separately from the $2 million asset for the first contract. The company *cannot* simply report a net liability of $3 million by offsetting the asset against the liability.

With regard to disclosures, the entity should report the following information:

- the amount of contract revenue recognized in the period;
- the method of revenue recognition (percentage of completion, cost recovery); and
- the method of estimating the percentage completed (the cost-to-cost approach, engineering estimates, etc.).

H. SUBSTANTIVE DIFFERENCES BETWEEN IFRS AND ASPE

Issue	IFRS requirements	ASPE requirements
Long-term contracts	Use the percentage of completion method.	Use either the percentage of completion or the completed contract method.
Income and expenses for biological assets	Recognize income and expenses on changes in fair value of biological assets (see Chapter 9).	No specific guidance for agricultural activities.

I. SUMMARY

L.O. 4-1. Explain why there is a range of alternatives for revenue recognition that are conceptually valid and the rationale for accounting standards to prescribe a smaller set of alternatives.

- Value creation occurs during many different business processes: research, development, production, delivery, collection, and product guarantees are all potentially value-adding activities. Conceptually, revenue could be recognized to correspond to the value added by these activities.
- Accounting standards prescribe revenue recognition at later stages of the value creation process when the risks and uncertainties surrounding procurement, demand, price, credit, and indemnity risk are sufficiently low.

L.O. 4-2. Apply the general revenue and expense recognition criteria to a variety of contexts involving the sale of goods and provision of services.

- Revenue recognition criteria are distinguished between sales and services.
- Sale of goods: there must be a transfer of risk and rewards of ownership to the buyer and a relinquishment of managerial control over the goods.
- Provision of services: the stage of completion must be reliably measured.
- Both goods and services: the amount of revenue and costs must be reliably measured, and collection is reasonably assured.

L.O. 4-3. Apply the specific revenue and expense recognition criteria for construction contracts, including the prospective treatment applicable to changes in estimates.

- IFRS prescribes the percentage of completion method to account for construction contracts.
- The percentage of completion method recognizes revenue in proportion to the degree of progress on the contracted project.
- Enterprises may obtain estimates of the percentage complete from engineering estimates, the cost-to-cost approach, or other sources.
- Enterprises apply prospective treatment for changes in estimates for costs and percentage complete.
- The cost-to-cost approach expresses the fraction complete as the ratio of cost incurred divided by the estimated total cost.

L.O. 4-4. Apply the principle of conservatism to the accounting for construction contracts.

- When the enterprise expects a loss on a contract, prudence requires that 100% of the loss be recognized immediately.
- The cost recovery method should be used when the enterprise cannot reasonably estimate the outcome of the construction contract.
- Enterprises eligible to use guidance in ASPE may use the completed contract method.

L.O. 4-5. Evaluate the risks of revenue misstatements and the appropriateness of revenue recognition policies in specific circumstances by applying professional judgment.

- Due to the wide variety of ways in which businesses operate, determining the appropriate revenue recognition policy requires the use of professional judgment that takes into account the information needs of users.
- As professional judgment may be misused by some financial statement preparers to further their own ends, auditors and financial statement readers should be aware of the degree to which revenue recognition policies are susceptible to management manipulation.
- The cost-to-cost approach for estimating the percentage completed in construction contracts is particularly susceptible to understatements of future costs required to complete the project.

J. References

Authoritative standards:

IFRS	ASPE Section
Framework for the Preparation and Presentation of Financial Statements	1000—Financial Statement Concepts
IAS 8—Accounting Policies, Changes in Accounting Estimates, and Errors	1506—Accounting Changes
IAS 18—Revenue	3400—Revenue
IAS 11—Construction Contracts	
IAS 23—Borrowing Costs	3850—Interest Capitalized: Disclosure Considerations

K. Glossary

barter transactions: The exchange of goods or services with little or no monetary consideration.

completed contract method: An accounting method that defers revenue and expense recognition until the date when the contractor completes the project.

consignment: An arrangement where one party (the consignor) provides goods to a second party to sell; however, the second party (the consignee) has the right to return all or a portion of the goods to the first party if the goods are not sold.

construction contract: A contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology, and function or their ultimate purpose or use.

cost recovery method: Recognizes contract costs incurred in the period as expenses and an amount of revenue equal to the costs that are expected to be recoverable as part of the contract.

franchise: A commercial arrangement in which one party (the franchisor) licenses its trademarks, business practices, and so on to another (the franchisee).

installment sale: An arrangement whereby the seller allows the buyer to make payments over an extended period of time while the buyer receives the product at the beginning of the installment period.

percentage of completion method: An accounting method that recognizes revenues and expenses on a construction contract in proportion to the degree of progress on the contracted project.

recognition: The process of presenting an item in the financial statements, as opposed to merely disclosing that item in the notes.

winner's curse: The higher likelihood of loss faced by winners of auctions when bidders have different information from each other.

L. PROBLEMS

MyAccountingLab® Go to MyAccountingLab at www.myaccountinglab.com. You can practise the indicated exercises as often as you want, and guided solutions will help you find answers step by step. You'll find a personalized study plan available to you too!

P4-1. Range of revenue recognition alternatives (L.O. 4-1) (Easy – 5 minutes)

Without restricting yourself to published accounting standards, explain how the potential range of revenue recognition policies corresponds to the idea of value added by an enterprise.

P4-2. Range of revenue recognition alternatives (L.O. 4-1) (Medium – 10 minutes)

One of your finance colleagues questions the usefulness of revenue recognition criteria that limit when revenue can be recorded. She cites evidence that stock prices respond reliably to news about corporate events such as the discovery of a mineral deposit; therefore, the company should record revenues to reflect that increase in value.

Required:

Respond to your colleague's criticism.

P4-3. Range of revenue recognition alternatives (L.O. 4-1) (Medium – 10 minutes)

Throughout the years, there have been many instances in which companies have had to restate previously issued financial statements after investigations by security regulators. Usually, the restatements involve adjustments to reverse overstated assets or income. About half of these overstatements involve revenue recognition.

Required:

In light of this evidence, evaluate whether revenue recognition criteria should be changed to the cash basis.

P4-4. Range of revenue recognition alternatives (L.O. 4-1) (Medium – 10 minutes)

Discuss the respects in which the following revenue recognition criteria in IFRS correspond with the definitions and recognition criteria for assets.

Revenue recognition criteria	Related asset criteria
The entity has transferred to the buyer the significant risks and rewards of ownership of the goods.	
The entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold.	
The amount of revenue can be measured reliably.	
It is probable that the economic benefits associated with the transaction will flow to the entity.	
The costs incurred or to be incurred in respect of the transaction can be measured reliably.	
The stage of completion of the transaction at the balance sheet date can be measured reliably.	

P4-5. Range of revenue recognition alternatives (L.O. 4-1) (Medium – 20 minutes)

The medication industry has at least two types of firms. The first type is biotechnology companies that focus their efforts on research and development (R&D) of new drugs. The second type is pharmaceutical companies that also engage in developing new drugs, but spend considerable efforts in the production, supply, and marketing of drugs.

Suppose pharmaceutical company ABC invests $500 million in R&D for the purpose of finding a vaccine for malaria. The company estimates the probability of success at 10% over a five-year period. If a vaccine is successfully developed, the estimated benefits in terms of future cash flows to the company will be in the range of $10 billion to $20 billion.

Pharmaceutical company XYZ also invests $500 million, but directs the funds to be invested in the equity of publicly traded biotechnology firms that are all in the search for a malaria vaccine. Suppose that XYZ invests $50 million in each of 10 such biotechnology firms. In return, XYZ receives approximately 10% of the common equity in each of these firms. XYZ accounts for these investments on a "mark-to-market" basis (meaning that changes in the biotechnology firms' stock prices are reflected in XYZ's assets and income).

Required:

a. How should ABC and XYZ account for each of their $500 million investments? Should they be capitalized as assets or expensed?
b. Suppose ABC successfully discovers a vaccine for malaria. How should it account for this discovery? If ABC were unsuccessful, how should the company account for this outcome?
c. Independent of (b), suppose one of the companies in which XYZ has an investment discovers a malaria vaccine, and the value of XYZ's investment increases to $2 billion. How should XYZ account for this outcome? Suppose the biotechnology company is unsuccessful and XYZ's investment becomes worthless. How should XYZ account for this outcome?
d. Using the following table, quantify the amount of revenue or income that would be recognized by ABC and XYZ in case of success or failure.

	ABC	XYZ
Vaccine success		
Vaccine failure		

e. Comment on the differences between ABC and XYZ that you observe from part (d).

P4-6. Revenue recognition policies (L.O. 4-1, L.O. 4-2) (Easy – 10 minutes)

The following disclosure is from Note 6 of the 2007 Financial Statements for BMW Group, the German automaker.

> Revenues from the sale of products are recognized when the risks and rewards of ownership of the goods are transferred to the customer, the sales price is agreed or determinable and receipt of payment can be assumed. Revenues are stated net of discounts, allowances, settlement discount and rebates. In the case of long-term construction work, revenues are generally recognized in accordance with IAS 18 (Revenue) and IAS 11 (Construction Contracts) on the basis of the stage of completion of work performed using the percentage of completion method. Revenues also include lease rentals and interest income from financial services. Revenues for the Financial Operations sub-group also include the interest income earned by Group financing companies.
>
> If the sale of products includes a determinable amount for subsequent services ("multiple-component contracts"), the related revenues are deferred and recognized as income over the period of the contract. Amounts are normally recognized as income by reference to the expected pattern of related expenditure. Profits arising on the sale of vehicles for which a Group company retains a repurchase commitment (buy-back contracts) are not recognized until such profits have been realized. The vehicles are included in inventories and stated at cost.

Required:

Identify the different types of activities for BMW Group and the method used to recognize the corresponding revenue.

P4-7. Criteria for revenue and expense recognition (L.O. 4-2) (Easy – 15 minutes)

For each of the following situations, identify the revenue or expense recognition method that you feel is most appropriate. The recognition methods are:

- At point of sale
- At time of delivery (if different from point of sale)
- When cash is received (if different from point of sale)
- At expiration of guarantee or warranty period
- When contract is signed
- Over time
- When service/contract is complete
- According to degree of completion
- According to units of production

	Situation	Method of recognition	Brief explanation
a.	A vendor sells tomatoes at a farmers' market.		
b.	A department store sells and delivers a washing machine with a three-year warranty.		
c.	An electronics store sells a television set with a 14-day "lowest price" guarantee. (That is, if the customer finds a lower price on the same product offered by the company or a competitor, the company will refund the difference to the customer.)		
d.	A bus manufacturer signs a contract to supply 280 buses over five years for the Toronto transit system.		
e.	A university receives students' course registrations.		

f. An insurance company issues a one-year insurance policy on a car.	
g. A company deposits funds into a two-year term deposit that earns 4% per year.	
h. A company takes a five-year loan bearing interest at 8% per year.	
i. A company purchases computers for its accounting department.	
j. A company purchases manufacturing equipment that is expected to produce 50,000 widgets.	
k. A company incurs delivery costs on January 3 for a shipment of products sold five days earlier (before the year-end).	

P4-8. Criteria for revenue recognition (L.O. 4-2) (Medium – 15 minutes)

For each of the following circumstances, identify which revenue recognition criterion/criteria is/are NOT met at the point of sale, preventing the recognition of revenue at that time. (*Italics* identify the entity for which you are accounting.)

Circumstance	Revenue recognition criteria not met
a. An *apartment owner* receives a deposit of $1,200 equal to one month's rent.	
b. An *insurance company* receives annual premiums for fire insurance on June 25 for coverage beginning July 1.	
c. A city *transit authority* issues 200,000 monthly passes at $80 each for sale at various retailers. Retailers act as consignees for these passes.	
d. A city *transit authority* sells 50,000 monthly passes at $80 each to transit riders at its own retail offices/stores.	
e. A provincial *lottery corporation* delivers 10 million scratch-and-win cards to retailers. The cards retail for $2 and generate a commission of $0.20 per card for the retailer. The retailer can return unsold cards to the lottery corporation.	

P4-9. Revenue recognition criteria in specific situations—consignment sales (L.O. 4-2) (Medium – 15 minutes)

The publisher of *Business Weekly* received the following 52-week subscriptions during 2012. Each subscription is $99, which is a 52% discount off the newsstand price of $4 per issue. The company has a fiscal year that ends on the last Sunday of each calendar year. Each subscription becomes effective in the calendar month after the company receives the subscription.

Month	Subscriptions received	Month	Subscriptions received	Month	Subscriptions received
January	4,600	May	6,000	September	7,200
February	4,000	June	5,300	October	4,000
March	4,500	July	4,700	November	4,200
April	5,200	August	4,400	December	9,500
Total					63,600

Required:

Determine the amount of revenue from subscriptions *Business Weekly* should recognize in 2012.

P4-10. Revenue recognition criteria in specific situations—consignment sales

(L.O. 4-2) (Easy – 10 minutes)

Through non-subscription sales, *Business Weekly* (see P4-9) provides retailers with a 50% margin (or 100% mark-up) on its magazines. During 2012, the company distributed 1,950,000 copies to retailers, not all of which were sold. Retailers sent a total of 830,000 unsold copies back to the publisher, of which 35,000 copies were for the last two issues published in 2011. In January 2013, the company received 32,000 unsold copies for magazines published in the last weeks of December 2012.

Required:

Determine the amount of revenue from non-subscription sales *Business Weekly* should recognize in 2012.

P4-11. Revenue recognition criteria in specific situations—installment sales

(L.O. 4-2) (Easy – 10 minutes)

Mica Computers provides customers the option to purchase products with three installment payments made over 12 months (equal payments at the end of the 4th, 8th, and 12th months). In January 2011, Mica sold $30,000 of computers to one customer on this installment plan. The cost of these computers is $22,500.

Required:

Using the installment sales method, record the journal entries for Mica's installment sales made in January 2011 and the subsequent payments received. Assume all installment payments are received, and ignore the time value of money.

P4-12. Revenue recognition criteria in specific situations—installment sales

(L.O. 4-2) (Easy – 10 minutes)

Oliver Furnishings frequently has sales involving "no down payment and no payments for three months." Three months after the purchase date, customers make four equal monthly payments (i.e., they make equal payments 3, 4, 5, and 6 months after purchase). Each payment is one-quarter of the purchase price.

The company has a December 31 year-end. During 2012, the company made the following sales on installment plans. Oliver makes a 40% gross margin on these sales.

Month	Sale price	Month	Sale price	Month	Sale price
January	$80,000	May	$90,000	September	$100,000
February	70,000	June	100,000	October	90,000
March	90,000	July	120,000	November	130,000
April	100,000	August	110,000	December	150,000
Total					$1,230,000

Required:

Using the installment sales method, record the journal entries for Oliver's installment sales made in the month of May and the subsequent payments received in August, September, October, and November. Assume all installment payments are received, and ignore the time value of money.

P4-13. Revenue recognition criteria in specific situations—installment sales (L.O. 4-2) (Medium – 15 minutes)

Refer to the facts given in the previous question (P4-12).

Required:

Using the installment sales method, determine the following amounts:

a. Balance of installment accounts receivable at December 31, 2012.
b. Amount of deferred gross profit as at December 31, 2012.
c. Sales revenue to recognize in 2012 for installment sales made in the year.

Assume all installment payments are received, and ignore the time value of money.

P4-14. Revenue recognition criteria in specific situations and accounting changes (L.O. 4-2) (Medium – 15 minutes)

Aurora Gold Company produced 500,000 ounces of gold in 2012. Average sales price was $850/oz. The price was $820/oz at the start of the year and $850/oz at the end of the year. Production cost averaged $280/oz, which has been stable for several years. Aurora Gold had 30,000 ounces in inventory at the beginning of the year, and 10,000 ounces at the end of the year.

Required:

a. Compute Aurora Gold's revenue, costs of goods sold, and gross profit assuming the company recognizes revenue at the point of sale/delivery.

	2011	2012
Revenue	$400,000,000	
Cost of goods sold	140,000,000	
Gross profit	260,000,000	

b. Determine the amount that should be shown as ending inventory on Aurora's balance sheet for 2012.
c. During the audit of the 2012 fiscal year, the auditors learned that Aurora had hedged the sales price for all its production in the year. In other words, the price for all of the 2012 production was guaranteed to be $850/oz. As a result, the auditors determined that it would be more appropriate for the company to recognize revenue when production was complete. For 2011, Aurora Gold had not engaged in hedging of the price on its production.

Based on these facts, select the type of accounting change on the left and the type of treatment on the right.

This is a:	*correction of an error* *change in circumstance/estimate* *change in accounting policy*	*. . . requiring:*	*prospective treatment* *retrospective treatment*

Based on this additional information, determine the effect on the financial statements relative to the method used in (a) and (b) above. Ignore the effect of income taxes.

	2011		2012	
	Direction (↑ ↓ ↔)	Amount	Direction (↑ ↓ ↔)	Amount
Revenue				
Cost of goods sold				
Gross profit				
Assets				
Retained earnings				

P4-15. Computing revenue to recognize on construction contracts

(L.O. 4-3) (Easy – 10 minutes)

Path Pavers began to resurface a 50 km running/cycling trail in March 2011 under a fixed-price contract of $25 million. The trail is to be completed by May 2015 at a total estimated cost of $18 million. In the five years of the contract, Path Pavers completes 8, 12, 12, 12, and 6 km of the trail, respectively. Actual costs are immaterially different from original estimates. Path Pavers is a publicly traded company listed on the Canadian Venture Exchange.

Required:

Determine the amount of revenue Path Pavers should recognize in each of the five years of the contract.

P4-16. Computing profit to recognize on construction contracts

(L.O. 4-3) (Easy – 5 minutes)[7]

Construction Co. started a contract in June 2011 to build a small foot bridge at a fixed price of $10 million. The bridge was to be completed by October 2013 at a total estimated cost of $8 million. Total cumulative costs incurred by the end of December 2011 and 2012 were $2 million and $5.5 million, respectively. Because of cost overruns in 2012, it is now expected that the project will cost $800,000 more than originally estimated. Final costs at the end of the project totalled $9 million. Construction Co. follows the guidance in IFRS.

Required:

Determine the amount of gross profit to be recognized for the year ended December 31, 2012.

P4-17. Computing profit to recognize on construction contracts

(L.O. 4-3) (Easy – 5 minutes)

Use the same facts for Construction Co. as in P4-16, but *also assume that the company is unable to estimate the total cost of the project prior to completion.*

Required:

Determine the amount of revenue, cost of sales, and gross profit Construction Co. would report in 2011, 2012, and 2013.

P4-18. Understanding accounting policies for construction contracts

(L.O. 4-3) (Easy – 10 minutes)

The following disclosure is from Note 1 of the 2007 Financial Statements for SNC-Lavalin (SNCL), an engineering firm headquartered in Montreal.

7. Adapted from the Uniform Final Examination (1997) with permission from The Canadian Institute of Chartered Accountants, Toronto, Canada. Any changes to the original material are the sole responsibility of the author and have not been reviewed or endorsed by the CICA.

SNC-Lavalin 2007 Financial Statements Note 1

Revenues from Services, Packages and Operations and Maintenance categories are recognized based on the nature of the contract, which are mainly as follows:

- *Services and Packages activities*: Cost-plus reimbursable contract revenues are recognized as costs are incurred, and include applicable fees earned as services are provided. Fixed-price contract revenues are recorded on the percentage-of-completion basis over the duration of the contract. The percentage of completion is determined by dividing the cumulative costs incurred as at the balance sheet date by the sum of incurred costs and anticipated costs for completing a contract.
- *Operations and Maintenance activities*: Fixed-fee revenues from "cost reimbursable with a fixed-fee" contracts are recognized on a straight-line basis over the term of the contract. Revenues on fixed-price contracts are recognized based on the stage of completion of the contract activity which involves taking the costs incurred as at the balance sheet date and dividing by the estimated total contract costs.

For fixed-price contracts from all revenue categories, the cumulative effect of changes to anticipated costs and anticipated revenues for completing a contract are recognized in the period in which the revisions are identified. In the event that the anticipated costs exceed the anticipated revenue on a contract, such loss is recognized in its entirety in the period it becomes known. SNC-Lavalin has numerous contracts that are in various stages of completion. Estimates are required to determine the appropriate anticipated costs and revenues.

Required:

Identify the methods used by SNCL to account for its construction contracts.

P4-19. Understanding accounting policies for construction contracts

(L.O. 4-3, L.O. 4-4) (Easy – 10 minutes)

The following disclosure is from the 2007 Notes to the Consolidated Financial Statements for EADS, the parent company of plane manufacturer Airbus.

Summary of Significant Accounting Policies

Revenue Recognition

For construction contracts, when the outcome can be estimated reliably, revenues are recognized by reference to the stage (percentage) of completion of the contract activity. The stage of completion of a contract may be determined by a variety of ways. Depending on the nature of the contract, revenue is recognized as contractually agreed technical milestones are reached, as units are delivered or as the work progresses. Whenever the outcome of a construction contract cannot be estimated reliably, revenue is only recognized to the extent of the expenses incurred that are recoverable. Changes in profit rates are reflected in current earnings as identified. Contracts are reviewed regularly and in case of probable losses, provisions are recorded.

Provisions

Provisions for contract losses are recorded when it becomes probable that estimated contract costs based on a total cost approach will exceed total contract revenues. Contractual penalties are included in the contractual margin calculation. Provisions for loss making contracts are recorded as write-downs of work-in-process for that portion of the work which has already been completed, and as provisions for the remainder. Losses are determined on the basis of estimated results on completion of contracts and are updated regularly.

Required:

Summarize the methods EADS uses to recognize revenue for construction contracts.

P4-20. Computing revenue to recognize on construction contracts and error correction

(L.O. 4-3) (Easy – 10 minutes)

Corus Corporation builds large cruise ships on a contract basis. The company uses the percentage of completion method of revenue recognition. The following information pertains to the construction contracts it had in place as of the December 31, 2012 year-end.

	2011	2012
Cost incurred to date	$108m	$320m
Cost to complete contracts	612m	480m
Total price of contracts outstanding December 31, 2012	960m	960m
Revenue	144m	?

Required:

a. Calculate the revenue to be recognized in 2012.
b. While examining the Corus financial statements, the auditors noted that there was an error in the estimate of costs to complete the contracts in **2011**. The "cost to complete" should have been $792m instead of $612m. In light of this evidence, how much revenue should be recognized in **2012**?

P4-21. Accounting for construction contracts (L.O. 4-3) (Medium – 40 minutes)

Jones Contractors Inc. agreed to construct a building for $300,000. Construction commenced in 2011 and was completed in 2013. Data relating to the contract are summarized below:

	2011	2012	2013
Cost incurred during year	$ 80,000	$120,000	$ 50,000
Estimated costs to complete	158,000	39,000	000
Billings during year	65,000	130,000	105,000
Collections during year	60,000	128,000	112,000
Estimated profit on contract	?	?	?

Required:

a. For each of the three years, determine the following amounts relating to the above contract: revenue, expenses, gross profit, accounts receivable balance, and construction-in-process inventory balance.
b. Record the journal entries using T-accounts.

P4-22. Computing revenue and profit to recognize on construction contracts with expected losses (L.O. 4-3, L.O. 4-4) (Medium – 10 minutes)

Westel is a builder of large digital networks. In the midst of the high-tech euphoria, the company bid and won a $50,000,000 contract to build a network for the country of Elbonia. Details on the project over the past three years are as follows:

(in $000's)	Year 1	Year 2	Year 3
Cumulative costs incurred	$ 12,000	$ 30,000	$ 55,000
Additional costs to complete estimated at year-end	48,000	20,000	0
Amounts invoiced to client in each year	8,000	19,000	23,000
Cash collected	7,000	18,000	25,000

Required:

Compute the amount of revenue, cost of goods sold (COGS), and gross profit (or loss) to be recognized in each of the three years. The company uses the percentage

of completion method to account for long-term contracts. Record your answer in the following table.

(in $000's)	Year 1	Year 2	Year 3	Total
Revenue				50,000
– COGS	12,000			55,000
– Expected loss (recovery)		(8,000)		0
= Gross profit (loss)				(5,000)

P4-23. Accounting for construction contracts with price adjustments and expected losses (L.O. 4-3, L.O. 4-4) (Medium – 10 minutes)

Cautious Construction Company has contracted to build an office building for Property Corporation. The construction started on January 1, 2012, and the project was completed on July 1, 2015. The contract price was $65 million. Due to uncertainties in the construction process, the two parties to the project agreed to a risk-sharing arrangement whereby Property Corporation covers 50% of all cost overruns in excess of the originally estimated cost of $60 million (e.g., if estimated total costs are $64 million, then Construction Company would receive an additional $2 million for the contract). The following data relate to the construction period.

($000's)	2012	2013	2014	2015
Costs incurred to date	$15,000	$30,000	$50,000	$63,000
Estimated cost to complete	47,000	42,000	11,000	0
Progress billings to date	25,000	45,000	55,000	unknown
Cash collected to date	20,000	42,000	51,000	62,000

Required:

Compute the estimated gross profit (loss) for 2012, 2013, 2014, and 2015, assuming that the percentage of completion method is used. [*Hint:* you need to compute revised contract prices each year due to the risk-sharing arrangement.]

P4-24. Accounting for construction contracts with expected losses (L.O. 4-3, L.O. 4-4) (Medium – 15 minutes)

On July 1, 2011, Hornby Construction Company Inc. contracted to build an office building for Ladysmith Corp. for a total contract price of $1,900,000. On July 1, Hornby estimated that it would take between two and three years to complete the building. In October 2013, the building was deemed substantially completed. Following are accumulated contract costs incurred, estimated costs to complete the contract, and accumulated billings to Ladysmith in 2011, 2012, and 2013.

	2011	2012	2013
Cost incurred to date	$150,000	$1,200,000	$2,100,000
Estimated costs to complete	1,350,000	800,000	0
Cumulative billings to Ladysmith	300,000	1,100,000	1,800,000

Required:

Using the percentage of completion method, compute the revenue and profit or loss to be recognized as a result of this contract for the years ended December 31, 2011, 2012, and

2013. The company used the cost-to-cost method to estimate the percentage complete. Use a schedule format similar to Exhibit 4-22 to show your calculations.

P4-25. Accounting for construction contracts with expected losses

(L.O. 4-3, L.O. 4-4) (Medium – 15 minutes)

Assume the following facts for a construction contract that was completed over four years. The contract price is $5.5 million.

	2011	2012	2013	2014
Cost incurred to date	$1,000,000	$2,000,000	$3,000,000	$4,000,000
Estimated costs to complete	2,500,000	4,000,000	2,000,000	0

Required:

a. Using the percentage of completion method, compute the gross profit or loss to be recognized as a result of this contract for each of the four years. The company used the cost-to-cost method to estimate the percentage complete.
b. If this company were permitted to use guidance in ASPE, and the company chose to apply the completed contract method, what would be the gross profit or loss in each of the four years?

P4-26. Accounting for construction contracts with expected losses

(L.O. 4-3, L.O. 4-4) (Difficult – 20 minutes)

Optimist Ltd. is constructing a residential highrise in downtown Vancouver for a contract price of $12,000,000. Costs for this contract were initially estimated to be $9,000,000. The company uses the percentage-of-completion method of revenue recognition, using the cost-to-cost method of estimating the percentage complete. The following information is available:

(in $ thousands)	Year 1	Year 2	Year 3
Costs incurred each year	$ 3,500	$ 6,500	$ 2,000
Additional costs to complete estimated at year end	6,500	3,000	0
Billings on construction in progress	5,000	4,000	3,000
Cash collected	4,700	4,200	3,100

Required:

a. Compute the amount of gross profit to be recognized in each year. Show computations in good form.
b. Compute the amount of revenue to be recognized in Year 2.
c. Prepare all the journal entries required in Year 2. [*Hint:* four entries are required.]
d. Prepare the journal entry required in Year 3 to acknowledge completion and acceptance of the project.

P4-27. Accounting for construction contracts with expected losses

(L.O. 4-3, L.O. 4-4) (Difficult – 25 minutes)

Condo King (CK) is building a luxury condominium for a contract price of $60,000,000. This is estimated to be a three-year project with an estimated cost of $48,000,000. CK uses the percentage-of-completion method of revenue recognition, using the cost-to-cost

method of estimating the percentage complete. The following is the best available information at the end of each year:

(in $ thousands)	Year 1	Year 2	Year 3
Costs incurred each year	$13,000	$27,000	$14,000
Estimated costs to complete	37,000	18,000	0
Billings on construction in progress	15,000	25,000	20,000
Cash collected	8,000	20,000	32,000

Required:

a. Compute the amount of gross profit to be recognized in Year 1, Year 2, and Year 3. Show computations in tabular form in a spreadsheet.
b. Prepare all the journal entries required in Year 2.
c. Prepare the journal entry required in Year 3 to close the accounts related to the project.
d. At the end of Year 2, if the estimated cost to complete is $22 million (instead of $18 million), how much gross profit would be recognized in Year 2?

P4-28. Accounting for construction contracts with expected losses

(L.O. 4-3, L.O. 4-4) (Difficult – 15 minutes)

In early 2003, Skyline Corp. won a contract to build a rapid transit line connecting downtown Vancouver to the airport and the suburb of Richmond (the RAV line). The contract was for $1.9 billion to be received over the construction period of six years, ending in November 2009. Skyline has a December 31 year-end and uses the percentage of completion method to account for long-term contracts.

Required:

a. Skyline's management expects the gross margin on the total project to be 20%, and that $228 million would be incurred on the project by December 31, 2003.
   i. How much gross profit (or loss) will Skyline record in the 2003 fiscal year if management's estimates are accurate?
   ii. Provide the journal entry to record revenue, cost of goods sold, and expected loss (if applicable) for fiscal 2003.
b. Assume that it is now early 2007 and you are preparing the adjusting entries for 2006. The accounting records indicate that, by the end of 2005, a total of $760 million in revenue and $684 million in cost of goods sold had been recorded. You also know that $380 million in costs were incurred on the project in 2006, and management's best estimates indicate another $912 million in costs will be required to complete the project.
   i. How much gross profit (or loss) should Skyline record in the 2006 fiscal year if management's estimates are accurate?
   ii. Provide the journal entry to record revenue, cost of goods sold, and expected loss (if applicable) for fiscal year 2006.

P4-29. Accounting for construction contracts with expected losses

(L.O. 4-3, L.O. 4-4, L.O. 4-5) (Difficult – 30 minutes)

Nautilus Resources is investing in a new heavy oil upgrader in northern Alberta. Nautilus has hired Rite Build Contractors to construct the facilities. The contract price is $3,600 million to be completed over four years. The following information pertains to this construction contract.

(in $ millions)	Year 1	Year 2	Year 3	Year 4
Cumulative costs incurred to date	480	1,250	2,660	3,750
Estimated additional costs to complete	2,520	1,875	1,140	0
Billings on construction in progress	500	900	1,000	1,200
Cash collected in the year	450	860	1,030	1,260

Required:

a. Compute the amount of revenue and expense to be recognized in the accounts of Rite Build Contractors in each of the four years. Show computations in tabular format in a spreadsheet.
b. Prepare all the journal entries required in Year 1.
c. Prepare the journal entry required in Year 4 to close the accounts related to the project.
d. If Rite Build were to underestimate the cost to complete to be $940 million instead of $1,140 million in Year 3, how much gross profit or loss would be recognized in each year? How much more or less gross profit or loss would be reported in that year? How much more or less gross profit would be reported in Year 4, and in total for all four years?

P4-30. Identifying errors in the accounting for construction contracts

(L.O. 4-3, L.O. 4-4, L.O. 4-5) (Difficult – 15 minutes)

Fraternal Brothers provides consulting services on contract for a standard hourly rate of $100 per hour. The contracts allow the company to invoice the client evenly during the contract period. The company's average cost is $70/hour. At the end of December 31, 2011, its fiscal year-end, the company had the following projects still in progress:

Exhibit 4-J

Client	Project start date (y/m/d)	Contracted completion date	Budget hours in contract	Hours to date	% complete	Budgeted total revenue @ $100/hr	Revenue recorded	Billed to date	Accrued revenue*
Alpha	2011/2/5	2013/2/5	14,580	14,000	96.0%	1,458,000	1,400,000	656,100	743,900
Beta	2011/2/28	2012/2/29	6,000	5,230	87.2%	600,000	523,000	504,000	19,000
Chi	2011/4/9	2012/4/9	9,600	9,500	99.0%	960,000	950,000	700,800	249,200
Delta	2011/5/19	2012/5/19	3,600	2,500	69.4%	360,000	250,000	223,200	26,800
Epsilon	2011/6/28	2012/6/28	5,440	6,170	113.4%	544,000	544,000	277,440	266,560
Phi	2011/8/7	2011/10/6	750	160	21.3%	75,000	16,000	—	16,000
Gamma	2011/9/16	2012/9/16	4,400	1,960	44.5%	440,000	196,000	127,600	68,400
Eta	2011/10/26	2011/11/25	350	150	42.9%	35,000	15,000	—	15,000
			44,720	39,670	88.7%	4,472,000	3,894,000	2,489,140	1,404,860

*Amounts reflected on the balance sheet in the item "Accounts receivable and accrued revenue."

Required:

Identify any errors or likely errors in Fraternal Brothers' revenue recognition for their contracts.

M. MINI-CASES

CASE 1

Revenue recognition at telecom firms

(20 minutes)[8]

During the later 1990s, as the Internet blossomed around the world, Global Crossing thrived in the business of paving the Internet superhighway: laying cables to transport data criss-crossing the globe and charging a toll for the use of those cables. In 1999, the company's market capitalization reached $40 billion. In anticipation of the burgeoning demand, Global Crossing took on more than $7 billion of debt to lay 1.7 million miles of fibre-optic cable.

By 2001, the Internet boom had turned to bust. As this occurred, Global Crossing contracted with other telecom firms, such as Qwest Communications, to allow them to use the company's cables in future years. In the second quarter of 2001, Global Crossing sold some $600 million of fibre-optic capacity, amounting to almost 20% of revenues.

Separately, Qwest Communications also had its own set of cables. Due to the multi-modal nature of the Internet, the networks of Qwest and Global Crossing had significant overlap while remaining distinct from each other. Like Global Crossing, Qwest also sold some of its fibre-optic capacity to other companies, including Global Crossing. Global Crossing recorded these purchases of fibre-optic capacity as capital investments and subsequently depreciated them over several years when the fibre could be used to generate revenues.

Required:

Evaluate the appropriateness of Global Crossing's accounting policies raised by the above facts.

CASE 2

Future Shop's product service plans

(25 minutes)

Future Shop was established in 1982 in Vancouver and has over 120 locations across Canada. It is currently owned by Best Buy Co., a company headquartered in the U.S. and listed on the New York Stock Exchange. Future Shop sells televisions, audio systems, computers, gaming consoles, related accessories, and appliances such as washing machines.

Many of the products stocked by Future Shop have warranties provided by the manufacturer, typically ranging from 90 days to one year. In addition to these manufacturer's warranties, Future Shop offers its customers, for a fee, "Product Service Plans." The box on the next page provides a description of the Product Service Plan, courtesy of Future Shop.

The fee and the coverage under the Product Service Plan differ according to the type of product and the option chosen by the customer. As a representative example, Future Shop offers the following coverage for a $1,500 television:

Length of guarantee	2 years	3 years	4 years
Price	$240	$270	$300

Similar to its subsidiary, Best Buy also offers similar service plans.

The PSPs are highly profitable for Future Shop. On average, the cost of fulfilling the guarantee is well under a third of the fee charged to the customer. Because of this low cost, the company is considering a short-term promotion whereby customers would receive, for no additional charge, the shortest PSP available for the product purchased. The customer can obtain a longer PSP by paying the differential. In the above example, a customer who purchases the $1,500 television would receive the two-year plan for free, but could pay $60 to obtain the four-year coverage.

Required:

Assume that it is the first year that the company has offered the Product Service Plans. As the company's controller, prepare a memo to Future Shop's CFO explaining the accounting issues surrounding the PSP and how it affects the accounting for products sold. Assume that the company follows the guidance provided by IFRS.

8. Various facts for this case have been obtained from "Profits you can trust: spotting and surviving accounting landmines," by Harris Collingwood, David Sherman, David Young, FT Prentice Hall, 2003.

CASE 3
Penguins in paradise
(30 minutes)[9]

You have just met a new client, Darth Garbinsky, who has come to you for some accounting advice.

"The thing you have to understand, David, is how these stage plays work. You start out with just an idea, but generally no cash. That's where promoters like me come in. We find ways of raising the money necessary to get the play written and the actors trained. If the play is a success, we hope to recover all those costs and a whole lot more, but cash flow is the problem. Since less than half of all plays make money, you cannot get very much money from banks.

"Take my current project, 'Penguins in Paradise.' You only need to look at the cash inflows (Exhibit A) to see how many sources I had to approach to get the cash. As you can see, most of the initial funding comes from the investors in the Penguins in Paradise Limited Partnership (PIP). They put up their money to buy a percentage of the future profits of the play.

"Some investors do not want to invest the amount required for a partnership unit. So, for them, we structure the deal a little differently. Instead of buying a unit in the

9. Adapted from the Uniform Final Examination (1991) with permission from The Canadian Institute of Chartered Accountants, Toronto, Canada. Any changes to the original material are the sole responsibility of the author and have not been reviewed or endorsed by the CICA.

partnership, they buy a right to a royalty—a percentage of future operating profits (i.e., gross revenue less true operating expenses). In this way, these investors get an interest in the play without being in the partnership. Since they do not have a vote at the partnership meetings, they are more concerned about their risks.

"Funding the play is not that easy. The money that the investors put up is not enough to fund all the start-up costs, so you have to be creative. Take reservation fees, for example. You know how tough it is to get good seats for a really hot play. Well, PIP sold the right to buy great seats to some dedicated theatre-goers this year for next year's performance. These amounts are non-refundable, and the great thing is that the buyers still have to pay full price for the tickets when they buy them.

"Consider the sale of movie rights. Lots of good plays get turned into movies. Once the stage play is a success, the movie rights are incredibly expensive. My idea was to sell the movie rights in advance. PIP got a lot less money, but at least we got it up front when we needed it.

"The other sources are much the same. We received the government grant by agreeing to have at least 50% Canadian content. We also negotiated a bank loan with an interest rate of 5% per year plus 1% of the gross revenue of the play, instead of the usual 20% interest a year. Even my fee for putting the deal together was taken as a percentage of operating profits, so just about everybody has a strong interest in the play's performance.

"Because of these various interests in PIP, I will require audited financial statements to determine how much is owing to each party."

Required:

Prepare a memo for your files summarizing the financial accounting issues raised in your conversation with Darth Garbinsky.

Exhibit A Cash flows for Penguins in Paradise

Penguins in Paradise (A Limited Partnership) Summary of Cash Flows For the period ended December 31, 2011 (in $000's)	
Cash inflows	
Investor contributions to limited partnership	$5,000
Sale of royalty rights	1,000
Bank loan	2,000
Sale of movie rights	500
Government grants	50
Reservation fees	20
	8,570
Cash outflows	
Salaries & fees	3,500
Costumes & sets	1,000
Miscellaneous costs	1,250
	5,750
Net cash flow	$2,820

CASE 4
Plex-Fame Corporation
(30 minutes)[10]

You are engaged in the audit of Plex-Fame Corporation (PFC), a rapidly expanding, diversified, publicly traded entertainment company with operations throughout Canada and the United States. PFC's operations include movie theatres, live theatre production, television production, and a 60% interest in Media Inc. (Media), a company that specializes in entertainment-related advertising and promotion.

It is June 22, 2012, the week before PFC's year-end. You meet with the chief financial officer of PFC to get an update on current developments and learn the following.

PFC acquired real estate in prime locations where an existing theatre chain does not adequately serve the market. After acquiring a theatre site, the company engages a contractor to construct the theatre complex. During the year, the company received a $2 million payment from one such contractor who had built a 10-theatre complex for PFC in Montreal. This payment represents a penalty for not completing the theatre complex on time. Construction began in June 2011 and was to have been completed by December 2011. Instead, the complex was not completed until the end of May 2012.

The company is staging a Canadian version of "Rue St. Jacques," which is to open in November 2012. The smash-hit musical has been running in Paris for three years and is still playing to sold-out audiences. PFC started receiving advance bookings in November 2011, and the first 40 weeks of the show's run are completely sold out. Average ticket prices are $65; the show will play seven nights a week. The theatre used for production is relatively small, with about 1,200 seats. As at June 22, 2012, PFC had included in revenue $1.7 million of interest collected on the funds received from advance ticket sales. In addition to the substantial investment in advertising for this production ($4 million), the company will have invested $15 million in pre-production costs by November 2012 and will incur weekly production costs of $250,000 once the show opens.

PFC started selling movie theatres a couple of years ago. Each theatre's contribution to long-run operating cash flow is assessed, and if the value of the real estate is greater than the present value of future theatre operating profits, the theatre is sold. In the past, revenue from these sales has been relatively minor, but this year 25% of net income (i.e., $6 million) came from the sale of theatres. Since these sales are considered an ongoing part of the company's operations, proceeds from the sale of theatres are recorded as revenue in the income statement.

When you return to the office, you discuss these issues with the leader of the audit engagement. She asks you to prepare a report on the financial accounting issues you have identified as a result of your meeting with the chief financial officer.

Required:

Prepare the requested report.

CASE 5
Happy Valley Homes
(75 minutes)[11]

Tom Mullins, a long-time client of your employer, Spinney and Smith, Chartered Accountants, approached one of the firm's partners concerning a new business opportunity. Tom is a well-established local real estate agent with an excellent reputation for integrity and client service. He is excited about a new development in the real estate field, the sale of "reverse mortgages."

Under such sales, senior citizens who own and live in homes with high market values, but who lack funds on which to live, enter into an agreement with a company whereby the senior citizens receive a cash settlement now in exchange for title to their home upon the death of the last survivor. The amount of the payment is based upon the value of the home and actuarial assumptions about life spans.

10. Adapted with permission from the Uniform Final Examination (1997), The Canadian Institute of Chartered Accountants, Toronto, Canada. Any changes to the original material are the sole responsibility of the author and have not been reviewed or endorsed by the CICA.

11. Adapted from the Uniform Final Examination (1988) with permission from The Canadian Institute of Chartered Accountants, Toronto, Canada. Any changes to the original material are the sole responsibility of the author and have not been reviewed or endorsed by the CICA.

The senior citizens continue to live in the house, rent free, for the rest of their lives. The only costs that they continue to bear after the transaction are the normal household expenses any homeowner bears, such as repairs, painting, cutting the lawn, insurance, and property taxes. Tom says that the price paid would be fair to both the senior citizens and the speculator: it would provide a reasonable return to the company, without cheating the senior citizens.

Tom intends to incorporate a company (Happy Valley Homes Ltd.) to capitalize on this opportunity. Tom told the partner: "I can pay $200,000 for a reverse mortgage now, and the house should be worth $400,000 when sold. My average holding period should be about six years. That's a $200,000 gain, half of which would be taxable at, say, 40%. I would net $160,000."

Tom proposes to raise the necessary capital by way of an offering document to private investors. He wants Spinney and Smith to help put together a financial forecast and to attach "whatever opinion is appropriate. Use whatever accounting policies are best, as long as they are not too costly and complicated." Spinney and Smith will also be engaged as auditors, but for the moment Tom is primarily concerned with "getting the project off the ground." Accordingly, he is interested only in Happy Valley's immediate accounting and auditing concerns.

In the interim, Tom intends to borrow funds from his bank to cover initial expenses and the first few houses.

After outlining his discussions with Tom, the partner has requested you, CA, to perform the initial research and to draft a preliminary report to the client on the issues raised.

Required:

a. Prepare the draft report requested by the partner.
b. Consider the business model and discuss the impact of information asymmetry (adverse selection and moral hazard) on the potential success or failure of the proposed venture.
c. Discuss the ethical issues involved in the proposed venture.

CASE 6

Revenue recognition in governments

(24 minutes)

In late 2008, *The Globe and Mail* raised some concerns about the way provincial governments account for their revenues and implied that some of these practices are inappropriate. Entitled "B.C.'s $1.7-billion surplus kept under wraps," the reporter, David Ebner, alleged that the government of British Columbia has been hiding a "secret surplus."[12]

At the time, the economy of B.C., Canada, and in fact most of the world was deteriorating rapidly following the financial crisis that began three months earlier. With shrinking tax revenues, the finance minister in B.C. updated the province's budget for the year ending March 31, 2009 to show a much reduced surplus of $450 million. Ebner alleged that this surplus could have been much higher had the government reported in a different way.

The issue that was the focus of Ebner's criticism is the way the B.C. government accounts for money the province receives from energy companies for rights for natural gas exploration, primarily in the northeast corner of the province. According to Ebner, Alberta and Saskatchewan record the full amount of such cash receipts as revenue. In contrast, B.C. divides this revenue over eight years, which was the average duration for the exploration rights. Ebner calculates that, had B.C. recorded its revenues in the same way as its neighbouring provinces, it would have a surplus of $1.7 billion instead of $450 million, for a difference of $1.25 billion.

In 2008–2009 B.C. was paid $2.18 billion, but the statement of revenues showed only $928 million. This latter figure includes a mere one-eighth of the $2.18 billion and the remainder was carried over from a previous year. The gap between the amount accounted for and the cash received was $1.25 billion.

12. David Ebner, *The Globe and Mail*, December 2, 2008.

Ebner noted that the accounting method used in Saskatchewan contributed to a huge surplus in 2008–09 of $2.3 billion, largely because of an additional and unexpected $1 billion received from selling exploration rights. (Saskatchewan has one-quarter of the population in B.C., so a surplus of $2.3 billion is enormous.)

Of key concern to Ebner was that, as a result of this accounting policy, money that existed could not be spent on programs or to make tax cuts that might help the province's floundering economy. On the other hand, Ebner acknowledges that the money was being spent on infrastructure, which has a capital budget that is separate from the operating budget, the latter of which is what produces government surpluses and deficits.

Each of the three provincial governments appear to believe that its interpretation of accounting rules is appropriate, so convergence is unlikely to happen anytime soon.

Required:

Discuss the issues raised by the above commentary by applying financial accounting theory, the conceptual framework for financial reporting, and accrual accounting concepts. In particular, evaluate the different revenue recognition policies used in the provinces mentioned, and critique the chosen perspective on the issues.