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International
Accounting Standards
Board

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These notes are based on the staff papers prepared for the IASB. Paragraph numbers correspond to paragraph numbers used in the IASB papers. However, because these notes are less detailed, some paragraph numbers are not used.

INFORMATION FOR OBSERVERS

Board Meeting:	**14 November 2007, London**
Project:	**Revenue Recognition**
Subject:	**Measurement model—Examples (Agenda paper 4G)**

1. This paper illustrates the Measurement model relative to current practice using the following four examples:
    - A television sold with an extended warranty
    - A house painting arrangement
    - The purchase of a boat
    - A widget sold with a right of return.

2. The first three examples are similar to those presented to the Boards for the October 2007 joint Board meeting with the FASB and the IASB. The principal difference, however, is that a section has been added for comparing the Measurement model to current practice.

TELEVISION WITH AN EXTENDED WARRANTY

3. Consider the following facts and assumptions:

On December 31, 2007, 20 customers purchase the same model of television from an electronics retailing entity (Retailer) for CU2,300 cash each. Retailer includes a one-year warranty with the sale of all its televisions, as required by consumer protection laws in the country in which Retailer operates. However, each of the customers also chooses to buy an extended two-year warranty (i.e. to increase the warranty period to a total of three years).

Retailer normally sells the television (inclusive of the statutory one-year warranty) for CU2,000 and the extended two-year warranty for CU400. As part of a year-end sale, however, it offers its customers the option of buying the television and extended warranty at the reduced price of CU2,300.

When a warranty claim arises, Retailer processes the claims and repairs or replaces the television itself. Its prior experience with this type of television suggests a 20 percent likelihood that a claim will be filed during the three years of warranty coverage. Hence, Retailer expects four claims to arise from these 20 contracts, with one of these claims being filed in Year 1, another in Year 2, and two of them in Year 3. Actual claims filed during 2008, 2009, and 2010 were one, two, and two, respectively. The total cost of servicing and administering each claim was CU400. All claims were serviced in the same year they were filed and processed.

Retailer incurs various costs for activities to obtain the contracts, including a direct sales commission of CU30 per extended warranty. Retailer also incurs costs in administering the warranties; however, these are not directly attributable to the contracts and are excluded from the illustration. The carrying amount of each television in Retailer's inventory immediately prior to sale was CU1,600.

To simplify the example, assume that the customers do not have the right to return the televisions and cannot cancel the warranties. The time value of money is ignored for simplicity. Retailer reports annually.

4. The staff chose this example for the following reasons:

- A warranty is a common feature of many contracts and accounting for warranties is often cited as an example of inconsistency in current revenue recognition guidance.

- A warranty contract is analogous to many other service contracts in that it features a continuous transfer of economic resources to the customer over multiple reporting periods. In other words, the contractual obligation is partially extinguished on a daily basis, which highlights the need for an entity to identify and measure remaining contractual obligations each reporting period.

- Warranties are often long-term contracts and the circumstances surrounding the warranties can change substantially over the contract term. It is important to explore how the two models address these changes in those circumstances.

Measurement model

Period ended December 31, 2007

5. During the period ended December 31, 2007, Retailer performs various activities to obtain 20 contracts. Shortly after inception of each contract, the customer performs by

paying the full amount of consideration (thus extinguishing Retailer's contractual rights). At the same time, Retailer satisfies part of its obligations by delivering the television to the customer. Therefore, Retailer has a contract liability because the remaining obligations to provide three years of warranty coverage exceed the rights that are fully extinguished upon prepayment by the customer.

6. The contract liability is measured at the amount a market participant would require to assume *all* of Retailer's remaining obligations in the contract. This measurement reflects any attributes of the particular contract. For example, a market participant would require a higher price if Retailer has a higher-than-industry average number of warranty claims because of its poor inventory-handling procedures. Suppose that insurance companies will legally assume Retailer's warranty obligations for CU120 per warranty, so that CU2,400 is the current exit price for the portfolio of all 20 warranty contracts.

7. In this example, revenue can be determined as the excess of cash obtained (CU46,000, i.e., CU2,300 × 20) over the current exit price of Retailer's remaining contract liability (CU2,400). This revenue arises from obtaining the contract (in which the rights obtained exceeded the obligations incurred) and from partially satisfying an obligation under the contract (by delivering the television). Given the shortness of time over which the customer performs and Retailer partially performs, however, it is not necessary to determine revenue for these events separately. Revenue can instead be recorded as follows:

Dr Cash	46,000	
Cr Contract liability		2,400
Cr Revenue		43,600

8. Retailer derecognizes the television inventory when the televisions are transferred to the customer (20 × CU1,600 = CU 32,000).

Dr Cost of sales (expense)	32,000	
Cr Inventory		32,000

9. Retailer also recognizes the direct selling costs incurred of CU30 per television (20 × CU30 = CU600).

Dr Selling expenses	600	
Cr Cash		600

Period ended December 31, 2008

10. During the period ended December 31, 2008, a single television claim is serviced under warranty. Retailer incurs direct and indirect costs of servicing and administering the claim of CU400.

Dr Warranty expenses	400	
Cr Cash		400

11. To determine revenue for the period, Retailer needs to measure the contract liability at its current exit price. This price is not directly observable because the current prices available from the insurance companies are for warranty coverage on new televisions, not on one-year-old televisions.

12. Because directly observable prices for the warranty obligations are not available, Retailer estimates the amount it would need to pay a market participant to assume those obligations. In this case, that price reflects:

a) The number of claims expected to arise under the warranty contracts

b) The direct and indirect costs of satisfying those claims

c) The direct and indirect costs of administering the warranties (e.g. resolution of customer questions and processing of claims)

d) The margin required on warranty work

e) The margin required for bearing uncertainty about the number of claims that might arise and the cost of fulfilling those claims

f) The likelihood of having to refund the consideration due to non-performance.

13. In concept, Retailer should make its estimates from the perspective of a market participant. In practice, however, Retailer could use its own estimates if it does not have reason to believe they would significantly differ from those of other market participants.

14. Retailer estimates a 15 percent chance of a claim arising over the remaining two years of warranty coverage and expects the total cost per claim to be CU400.[1] The total expected cost per contract is therefore CU60 (CU400 × 15%). The required margin per contract (for the warranty work and for bearing uncertainty), is CU35 per contract. The measurement of each warranty obligation is therefore estimated at CU95 (CU60 + CU35), so that the contract liability for all 20 contracts is measured at CU1,900 (CU95 × 20).

15. The decrease in the contract liability from CU2,400 at inception to CU1,900 at December 31, 2008, is recognized as revenue.

Dr Contract liability	500	
Cr Revenue		500

Period ended December 31, 2009

16. During the period ended December 31, 2009, two television claims are serviced under warranty. The total costs of servicing and administering the claims are CU800.

Dr Warranty expenses	800	
Cr Cash		800

17. At contract inception, Retailer expected to service 4 televisions during the life of these 20 warranty contracts. Retailer serviced three televisions during the first two years, which, based on the original expectation, suggests that at the end of 2009 only one claim would be expected to arise in the third year (i.e. there would be a 5 percent

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[1] The cost estimate has been simplified in the example for illustrative purposes. In practice, this estimate would likely use a probability weighted average calculation to reflect the likelihood of different cash flow scenarios. The calculation would also estimate the cash flows associated with administering the warranties and the possibility of having to refund amounts to the customer.

probability of a claim arising). However, Retailer determines at December 31, 2009, that the probability of servicing a claim during the third year is 10 percent due to an unexpected increase in the number of claims filed for this particular television model.

18. Hence, in estimating the amount a market participant would now require to assume the remaining obligations, Retailer updates the probability of a claim arising. Since it does not expect the total cost per claim to change, the total cost per contract is CU40 (CU400 × 10%). The required margin per contract (for the warranty work and for bearing uncertainty) decreases to CU20 per contract because there is now only one year of coverage remaining.[2] The measurement of each warranty obligation is therefore CU60 (CU40 + CU20), so that the total contract liability for all 20 contracts is CU1,200 (CU60 × 20).

19. The contract liability has therefore decreased from CU1,900 at December 31, 2008, to CU1,200 at December 31, 2009. The full amount of this decrease (CU700) could be recognized as revenue. However, there are two reasons for the decrease in the contract liability.

20. First, Retailer provided warranty coverage and service repairs in the period (i.e. the obligation was partly extinguished in the period). Secondly, there has been a change in the expected amount of claims and that affects the price a market participant would demand for assuming the remaining obligations. Separately identifying these two effects may provide more useful information to users. For instance, suppose Retailer estimates that the contract liability would have been measured at CU800 if there had been no change in future anticipated repairs. One way in which the decrease in the contract liability could be presented is as follows:

Dr Contract liability	700	
Dr Contract loss	400	
Cr Revenue		1100

21. The income statement would therefore display the loss from the change in circumstances during the period separately from the value of services provided to the customer during the period.

Period ended December 31, 2010

22. During the period ended December 31, 2010, two television claims are serviced under warranty. The total costs of servicing and administering the claims are CU800.

Dr Warranty expenses	800	
Cr Cash		800

23. Retailer measures its remaining contract liability at zero because it has fulfilled its obligations under the 20 contracts. The CU1,200 decrease in the contract liability during the period is recognized as revenue.

Dr Contract liability	1,200	
Cr Revenue		1,200

[2] Note that this margin has not reduced proportionately. Although there has been no change in the *price* demanded for bearing risk since December 31, 2008, the *amount* of risk in the contracts does not reduce evenly over the life of the contracts. In other words, there is more uncertainty about the number of claims that might arise in the later periods of the contract than during the earlier periods.

24. Summarizing the above journal entries results in the following:

	Inception	Year 1	Year 2	Year 3	Total
Revenue	43,600	500	1,100	1,200	46,400
Cost of sales (expenses)	(32,000)	-	-	-	(32,000)
Warranty expenses	-	(400)	(800)	(800)	(2,000)
Contract loss	-	-	(400)	-	(400)
Selling expenses	(600)	-	-	-	(600)
Margin	11,000	100	(100)	400	11,400
Cash	45,400	45,000	44,200	43,400	
Inventory	(32,000)	(32,000)	(32,000)	(32,000)	
Contract liability	2,400	1,900	1,200	-	
Retained earnings	11,000	11,100	11,000	11,400	

25. As a result of the remeasurement in 2009 (Year 2), total revenue does not equal the contract consideration. This is because revenue reflects the value of the goods and services provided to the customer at the date they were provided, rather than at contract inception. Various options exist for presenting the changes in the contract liability arising from the changes in price and circumstances. Some of these would result in Retailer reporting revenue of CU46,000 (i.e. the amount of the contract consideration). However, illustration of these options goes beyond the objective of this paper.

Current practice (U.S. GAAP and IFRS)

26. The principles of revenue recognition under IFRS are similar to revenue recognition principles of U.S. GAAP and therefore often results in the same accounting treatment. However, significant differences in practice may arise for various reasons such as the fact that IFRS is generally not as prescriptive as U.S. GAAP. Differences may also arise in terms of the means by which the same outcome is achieved. The objective of this paper is not to explore these differences between U.S. GAAP and IFRS but rather to illustrate the Measurement model relative to the underlying principles of current practice. For this reason, these examples assume that the results are the same under U.S. GAAP and IFRS. All paragraphs in this paper under the *Current practice (U.S. GAAP and IFRS)* section should be read with this objective in mind.

27. Under current practice, revenue recognition is based largely on the criteria that revenue must be realized or realizable and earned (that is, the earnings process must be complete or substantially complete). Because the customer pays in advance for the television and warranty, the realization criterion has been met. Revenue is then recognized as the earnings process is completed. Assessing completion of the earnings process, however, is complicated by the existence of multiple deliverables in the same arrangement.

28. Multiple deliverables in a single arrangement require an analysis to identify the unit (or units) of account. In this case, Retailer allocates the CU100 contract discount between the television (including the statutory warranty) and the additional warranty. Current practice would likely use a relative fair value method to do this allocation.

29. When identifying the separable units of account, current practice looks for objective and reliable evidence of a standalone selling price in order to recognize revenue for each deliverable independently of the others.[3] In this case, the statutory warranty does not have an observable selling price on a standalone basis because it is never sold separately from the television. In other words, the statutory warranty is considered to be an integral part of the television and is not therefore accounted for separately. But the television and the additional warranty are priced and sold separately and are therefore treated as separate units of account. The standard selling prices of the television (CU2,000) and warranty (CU400) serve as the basis to determine revenue associated with each deliverable. Hence, the CU100 discount is applied to the deliverables of each contract as follows:

	Base Price	Weighted Average Discount	Allocated Consideration
Television (and statutory warranty)	2,000	(83.33)	1,917
Extended warranty coverage	400	(17.67)	383
Total	2,400	(100)	2,300

30. Based on the above allocation and the relevant guidance for each deliverable, revenue for the television and statutory warranty is recognized once the television is delivered to the customer while revenue for the warranty is recognized over the period in which the warranty coverage is provided. Warranty coverage revenue is recognized on a straight-line basis over the contract period except when sufficient historical evidence indicates that the costs of performing services under the contract are incurred on another basis. At the commencement of the warranty, Retailer expects to service one television under statutory warranty, one television in the first year of the extended warranty, and two televisions in the last year of the extended warranty. This expectation is based on previous experience with similar warranties on similar products. Revenue for the extended warranty would follow this expected pattern of claims servicing over only the last two years of the total warranty coverage period (i.e. one third of the *extended warranty* revenue in Year 2 and two thirds in Year 3).

Period ended December 31, 2007

31. During the period ended December 31, 2007, Retailer receives full payment of CU46,000 and delivers the televisions. Based on the allocation of contract consideration, television revenue of CU38,340 (CU1,917 × 20) is recognized along with deferred revenue of CU7,660 (CU383 × 20). This deferred revenue represents the realization of customer consideration in excess of the revenue Retailer has earned.

	Dr	Cr
Dr Cash	46,000	
Cr Revenue		38,340
Cr Deferred revenue		7,660

32. At inception of the contract, Retailer recognizes a liability for the statutory one-year warranty obligation. Suppose this amount is CU400.

	Dr	Cr
Dr Warranty expenses	400	
Cr Warranty liability - statutory		400

[3] EITF Issue No. 00-21 addresses this topic under U.S. GAAP. IFRS does not have comparable literature dealing with revenue arrangements with multiple deliverables but does often follow similar principles when determining the unit of account.

33. Retailer recognizes cost of sales for the televisions delivered to the customers.

Dr Cost of sales	32,000	
Cr Inventory		32,000

34. Retailer recognizes the direct selling expenses incurred of CU30 per warranty. Assume these expenses are not eligible for deferral.

Dr Selling expenses	600	
Cr Cash		600

Period ended December 31, 2008

35. In the period ended December 31, 2008, Retailer does not recognize any revenue because no revenue has been deemed to be earned. Retailer does, however, service one television under the statutory warranty and thereby extinguishes its liability that was set up at contract inception.

Dr Warranty liability - statutory	400	
Cr Cash		400

Periods ended December 31, 2009 and 2010

36. During Years 2 and 3, Retailer recognizes extended warranty services revenue of CU2,553 (one third of CU7,660) and CU5,107 (two thirds of CU7,660) and incurs warranty expenses of CU800 (CU400 × 2) and CU800 (CU400 × 2), respectively. The revenue amounts represent the amortization (based on expected claims servicing) of the deferred revenue balance at inception. In other words, Retailer allocated consideration of CU7,660 to the extended warranties and had an expectation of servicing one television in Year 2 and two televisions in Year 3. One third of the revenue is therefore recognized in Year 2 with two thirds being recognized in Year 3.

37. Summarizing the above journal entries results in the following:

	Inception	Year 1	Year 2	Year 3	Total
Revenue	38,340	-	2,553	5,107	46,000
Cost of sales	(32,000)	-	-	-	(32,000)
Warranty expenses	(400)	-	(800)	800)	(2,000)
Selling expenses	(600)	-	-	-	(600)
Margin	5,340	-	1,753	4,307	11,400
Cash	45,400	45,000	44,200	43,400	
Inventory	(32,000)	(32,000)	(32,000)	(32,000)	
Warranty liability – statutory	400	-	-	-	
Deferred revenue	7,660	7,660	5,107	-	
Retained earnings	5,340	5,340	7,093	11,400	

Illustration summary

38. Comparing the table above in paragraph 37 to the table in paragraph 24 reveals key differences between the Measurement model and current practice in this example. At inception of the contracts, revenue (and margin) is significantly higher under the Measurement model. One reason for this difference is that the Measurement model recognizes revenue from obtaining the contracts as well as from delivery of the

television whereas current practice only recognizes revenue from delivery of the television.

39. The Measurement model treats the statutory warranty as a separate unit of accounting for revenue recognition whereas current practice does not. This means that if only the expected costs of that warranty are accrued, then all of the margin from selling the television with the statutory warranty is recognized when the television is delivered to the customer although Retailer has not performed any of its warranty servicing obligations under the statutory warranty. In other words, had there been no extended warranty in this example, the pattern of profit recognition might have been more conservative under the Measurement model than under current practice.

40. The measurement of the remaining contractual obligations is also significantly different. Under current practice, the measurement of remaining obligations at each reporting date is based on the original allocation of customer consideration to those separable deliverables of the contract. That allocation is unaffected by subsequent changes in circumstances such as an increase in the expected number of claims (as occurs in this example) unless the contract is deemed onerous. In contrast, under the Measurement model, if the change in circumstances results in a change in the current exit price (as occurs in this example), then the change in circumstances is reflected in the measurement of remaining obligations.

41. As a result of the change in circumstances, total revenue under the Measurement model does not equal the contract consideration. Revenue reflects the value of the goods and services provided to the customer at the date they were provided. In contrast, under current practice, total revenue is equal to the contract consideration because the extended warranties obligation was not remeasured for the change in circumstances.

42. The CU100 discount given to each customer for buying the television and the extended warranty is treated differently under the two models. Under current practice, the discount reduces the amount of revenue that otherwise would have been attributed to the obligations to provide the television and the extended warranty. In other words, had Retailer not offered the discount, it would have recognized CU1,667 (CU83.33 × 20) more revenue on providing the television and CU333 (CU16.67 × 20) more revenue over the term of the extended warranty. Under the Measurement model, however, the discount reduces the revenue that is recognized at contract inception because it does not affect the exit price of the warranty liability.

HOUSE PAINTING

43. Consider the following facts and assumptions:

> PainterCo is a contractor that provides painting services for commercial and private residences. PainterCo contracts with a customer on June 25 to paint the customer's house for CU3,000. The price is inclusive of all paint, which PainterCo obtains at a cost of CU800. PainterCo's cost for labor and other painting materials is CU1,600. The customer is given the right to obtain its own paint, although the customer does

not opt to do so in this example and instead purchases the paint and painting services jointly.

All paint necessary to complete the contract is delivered to the customer's house on June 30. PainterCo renders the painting services continuously from July 1 through July 3. In accordance with the contract terms, the customer pays in full upon completion of the house painting.

The time value of money is ignored for simplicity. PainterCo reports monthly.

44. The staff chose this example for the following reasons:

- Although it is a simple illustration, it is similar to construction-type contracts in that the entity provides materials and utilizes those materials in the satisfaction of a subsequent obligation.

- This example highlights the relationship between satisfying obligations in a contract and the derecognition of assets that are transferred to a customer to satisfy those obligations.

Measurement model

Contract inception

45. Upon contract inception, PainterCo incurs obligations to perform according to the terms of the contract and also obtains rights to consideration from the customer in exchange. These remaining contractual rights and obligations are recognized net as either a contract asset or a contract liability. This contract asset or liability is measured at its current exit price, which is the amount that PainterCo would expect to receive or pay to transfer all of its remaining rights and obligations in the contract to a market participant.

46. In this example, the measurement of the contract asset or liability reflects the following:

a) The price a market participant (e.g. a subcontractor) would charge for providing the paint and the painting services (which includes its costs and its margin)

b) The price a market participant would charge to manage the contract (e.g. for engaging the subcontractor and dealing with the customer) and to guarantee a subcontractor's performance

c) The expected consideration from the customer (adjusted for risk of non-payment).

47. Assume that at contract inception, PainterCo estimates that a subcontractor would provide the paint and the painting services for CU2,800. In addition, PainterCo estimates that a market participant would charge CU100 for managing the contract and providing performance guarantees. Ignoring the risk of non-payment, a contract asset and revenue of CU100 is recognized (rights of CU3,000 less obligations of CU2,800 and CU100).

Dr Contract asset	100	
Cr Revenue		100

48. The contract asset reflects the fact that PainterCo would expect to be compensated by a market participant for obtaining this contract. In other words, a market participant would be prepared to pay PainterCo CU100 for the remaining rights and obligations because it only needs to fulfill the contract and does not need to incur the costs of obtaining the contract.

49. In that regard, note that the revenue recognized at contract inception would not result in the recognition of a corresponding amount of *margin*. This is because PainterCo also incurs costs in obtaining the contract. However, because these costs are unlikely to be direct costs attributable to this particular contract, they are excluded from this illustration.

Period ended June 30

50. PainterCo acquires the paint for CU800 and records it as inventory.

Dr Inventory	800	
Cr Cash		800

51. At June 30, PainterCo measures the contract asset at the amount it would expect to receive on that date if it transferred all of its remaining contractual rights and obligations to a market participant.

52. In this example, it could be argued that PainterCo's remaining obligations at June 30 are to provide painting services only. This is because the paint has already been delivered to the customer's premises and a market participant would be able to use this paint to fulfill the contract. Although in this example the customer would be likely to be able to return the paint if the painting services were not provided, the risk of the paint being returned can be viewed as part of the obligations a market participant would be required to assume on June 30 if the contract was transferred. Furthermore, it could be argued that it is appropriate for PainterCo to derecognize the paint because it could not compel the customer to return the paint. In other words, it no longer controls the paint. (It could not, for instance, use the paint for other contracts).

53. Assume that PainterCo estimates that a subcontractor would provide the painting services for CU2,000 (for simplicity, the price for bearing the risk of the paint being returned is ignored). In addition, PainterCo now estimates that a market participant would charge CU75 for managing the contract and for providing performance guarantees. Since there has been no change in the rights, the contract asset is now measured at CU925 (CU3,000 – CU2,000 – CU75). Therefore, as a result of satisfying obligations in the contract (that is, delivering the paint to customer and providing some contract management services), the contract asset has increased by CU825, which is recognized as revenue.

Dr Contract asset	825	
Cr Revenue		825

54. The revenue recognized reflects the value of the paint provided to the customer as well as the value of the services provided (i.e. obtaining and delivering the paint).

55. PainterCo also recognizes the cost of the paint when it is taken out of inventory and delivered to the customer's premises.

Dr Cost of sales (expense)	800	
Cr Inventory		800

56. PainterCo also incurs other costs associated with delivering the paint; however, these are not separately identified in this illustration.

Period ended July 31

57. During the period ended July 31, PainterCo completes painting the house and receives payment in full for these services. At this point, PainterCo does not have any remaining rights or obligations. The following entry is therefore recorded to reflect the cash payment and to derecognize the contract asset. The difference is recognized as revenue.

Dr Cash	3,000	
Cr Contract asset		925
Cr Revenue		2,075

58. PainterCo also recognizes the costs of providing the painting services:

Dr Cost of sales (expense)	1,600	
Cr Cash		1,600

59. The painting services are provided during a single reporting period. If, however, the services straddled multiple reporting periods, then the revenue recognized in a particular reporting period would be determined by estimating the amount a market participant would require to complete the painting services.

60. Summarizing the above journal entries results in the following:

	Inception	June 30	July 31	Total
Revenue	100	825	2,075	3,000
Cost of sales	-	(800)	(1,600)	(2,400)
Margin	100	25	475	600
Cash	-	(800)	600	
Inventory	-	-	-	
Contract asset	100	925	-	
Retained earnings	100	125	600	

Current practice (U.S. GAAP and IFRS)

61. Under current practice, the elements of this arrangement (that is, the paint and the painting services) may be considered separate units of accounting because the *paint* can be sold separately (by PainterCo or by other suppliers) and PainterCo often sells the painting *service* separately. However, none of the arrangement consideration is allocated to the paint for revenue recognition because the payment terms of the contract suggest that payment for the paint is contingent on successful completion of

the painting service.[4] Even if consideration was allocable to the paint, it is possible that revenue may have been recognized upon delivery because it is unclear whether PainterCo has relinquished significant risks and rewards of owning the paint (that is, it can be argued that PainterCo does not earn the related revenue at the time of delivery).

Reporting period ended June 30

62. Upon signing the contract, no revenue is recognized because no revenue is considered to have been earned and realized. In this case, revenue is earned as the painting services are rendered. No painting services were performed at contract inception; so revenue is not recognized.

63. During the reporting period ended June 30, the paint is delivered. But PainterCo does not recognize any revenue for this delivery because none of the contract consideration was originally allocated to this element of the arrangement. That is, revenue was determined to arise from the painting service and no painting services have been rendered at this point.

64. PainterCo records the following entry to reflect the costs of acquiring the paint and delivering it on June 30.

Dr Inventory	800	
Cr Cash		800

Reporting period ended July 31

65. PainterCo rendered the painting service during the month of July and also received payment in full from the customer. Because realization has occurred and the earnings process is complete, the full amount of consideration received from the customer is recognized as revenue.

Dr Cash	3,000	
Cr Revenue		3,000

66. PainterCo also recognizes the corresponding cost of sales.

Dr Cost of sales	2,400	
Cr Inventory – paint		800
Cr Cash		1,600

67. Summarizing the above journal entries results in the following:

	Inception	June 30	July 31	Total
Revenue	-	-	3,000	3,000
Cost of sales	-	-	(2,400)	(2,400)
Margin	-	-	600	600
Cash	-	(800)	600	
Inventory	-	800	-	
Retained earnings	-	-	600	

[4] EITF Issue No. 00-21 *Revenue Arrangements with Multiple Deliverable,* Example 10 and Paragraph 14

Illustration summary

68. In this example, revenue recognition under current practice (see paragraph 67) differs from revenue under the Measurement model (paragraph 60) in two key regards. First, current practice does not recognize any revenue at contract inception. The Measurement model, on the other hand, recognizes revenue at inception because the obligations are measured at an amount that is less than the rights to the customer's performance. Whether this generates any margin depends on the expenses that PainterCo incurred in obtaining the contract.

69. The second key difference concerns the different conclusions under each model regarding when an obligation has been satisfied (or when delivery occurs as termed in current practice). Current practice does not consider any revenue to have been earned upon delivery of the paint because PainterCo has a significant remaining obligation to provide the painting service. The Measurement model, however, derecognizes the paint at June 30 (and triggers revenue for satisfying the related obligation) because it concludes that PainterCo no longer controls the paint inventory. Hence, the measurement of the contract after this point explicitly reflects the price to provide the painting services, but not the paint itself.

BOAT

70. Consider the following facts and assumptions:

> On September 30, 2007, a customer contracts with a boat builder (Entity) for a boat to be delivered to the customer on April 1, 2008, for a fixed price of CU50,000. Under the terms of the contract, the customer is not obligated to pay Entity until delivery of the boat, at which point the title to the boat transfers to the customer. If the customer chooses to cancel the contract prior to delivery, payment must be made to Entity for any work completed up to that time.
>
> The boat is a standard design offered by Entity as well as other boat builders. However, Entity does not typically hold boats in inventory (that is, all boats are built to fulfill specific customer orders).
>
> Entity incurs direct contract acquisition costs of CU1,000. Entity also incurs other costs associated with obtaining the customer and the contract, but these costs are ignored in this example because they are not tied directly to the contract. Entity's expected and actual costs to build the boat are CU36,000, which consist of raw materials of CU20,000 and labor costs of CU16,000.
>
> The raw materials are all purchased on October 1, 2007. The labor costs are incurred, and the raw materials are consumed, evenly over the period October 1 to March 31. That is, the boat is 50 percent complete at December 31.
>
> The time value of money is ignored for simplicity and Entity reports quarterly.

71. The staff chose this example for the following reasons:

- This example is similar to construction type contracts in that the entity provides materials and utilizes those materials in the satisfaction of a subsequent obligation. This scenario highlights the difficulty in identifying (for accounting purposes) whether a contract is for the delivery of a good or for a service.

- This example also highlights the relationship between satisfying obligations in a contract and the derecognition of assets as they are transferred to a customer to satisfy those obligations. This example strains this relationship more so than in the paint example because the inventory is being built for the customer on Entity's site (as opposed to the painting example that featured delivery of paint and painting services on the customer's site).

Measurement model

Period ended September 30, 2007

72. During the period ended September 30, 2007, Entity performs various activities that result in it obtaining a contract with a customer. As a result of the contract, Entity has an obligation to provide the customer with a boat and in exchange has received the promise of cash consideration of CU50,000.

73. Assume that Entity estimates that a market participant (i.e. another boat builder) would charge CU45,500 on September 30, 2007, to provide a boat on April 1, 2008. In addition, it estimates that the price for managing the contract and the performance guarantee is CU500. In practice, if Entity has no evidence to suggest that its estimates would be inconsistent with market participants, it could use its own inputs.

74. For simplicity, assume that a market participant would not make any adjustments to the consideration due from the customer for the risk of non-payment. Hence, on contract inception, Entity recognizes a contract asset measured at CU4,000 (CU50,000 rights less obligations of CU45,500 and CU500). Entity therefore records the following entry.

Dr Contract asset	4,000	
Cr Revenue		4,000

75. Entity also incurs direct contract acquisition expenses of CU1,000.

Dr Contract acquisition expense	1,000	
Cr Cash		1,000

Period ended December 31, 2007

76. On October 1, 2007, Entity purchases all of the materials required to build the boat.

Dr Inventory (raw materials)	20,000	
Cr Cash		20,000

77. Entity begins constructing the boat during this period. In the process, Entity consumes half of the raw materials (CU10,000) while incurring labor costs of CU8,000. These amounts increase the work-in-process (WIP) boat inventory account.

Dr Boat (WIP)	18,000	
Cr Cash		8,000
Cr Inventory (raw materials)		10,000

78. Entity also remeasures its contract asset at this reporting date by considering the remaining rights and obligations in the contract. Entity still has a right to the customer's promise of cash consideration of CU50,000. However, assume that because of increases in the price of raw materials, Entity now estimates that another boat builder would currently require CU46,000 rather than CU45,500 to provide the boat. Entity's CU500 estimate for contract management and performance guarantees does not change.

79. Therefore, the contract asset is now measured at CU3,500 (CU50,000 rights less obligations of CU46,000 and CU500). In other words, a market participant would now be willing to pay CU500 less than at September 30 for the remaining rights and obligations in the contract. The CU500 decrease in the contract asset is recognized as a contract loss.[5]

Dr Contract loss	500	
Cr Contract asset		500

Period ended March 31, 2008

80. Entity completes the construction of the boat, using the remainder of the raw materials (CU10,000) and incurring labor costs of CU8,000. These amounts increase the work-in-process (WIP) boat inventory account.

Dr Boat (WIP)	18,000	
Cr Cash		8,000
Cr Inventory (raw materials)		10,000

81. Assume that the contract asset is measured at the same amount as it was for the previous quarter.

Period ended June 30, 2008

82. Entity transfers the boat to the customer on April 1 and therefore derecognizes the boat from inventory.

Dr Cost of sales (expense)	36,000	
Cr Boat (WIP)		36,000

83. Upon delivery of the boat, Entity also satisfies its contractual obligation of CU46,500, which increases the contract asset and therefore results in the recognition of revenue.

Dr Contract asset	46,500	
Cr Revenue		46,500

[5] An alternative approach might treat this as negative revenue but discussion of this approach is outside the objective of this paper.

84. The net contract asset of CU50,000 then comprises only the right to the customer's performance, which is settled upon payment from the customer.

Dr Cash	50,000	
Cr Contract asset		50,000

85. Summarizing the above journal entries results in the following:

	Inception	Dec 31	Mar 31	Jun 30	Total
Revenue	4,000	-	-	46,500	50,500
Cost of sales (expense)	-	-	-	(36,000)	(36,000)
Contract acquisition expense	(1,000)	-	-	-	(1,000)
Contract loss	-	(500)	-	-	(500)
Margin	3,000	(500)	-	10,500	13,000
Cash	(1,000)	(29,000)	(37,000)	13,000	
Inventory (raw materials)	-	10,000	-	-	
Boat (WIP)	-	18,000	36,000	-	
Contract asset	4,000	3,500	3,500	-	
Retained earnings	3,000	2,500	2,500	13,000	

86. Revenue arises from obtaining the contract and then from satisfying the contractual obligations. Note that the revenue recognized from satisfying these obligations represents the value of the goods and services provided to the customer at the date they were provided rather than the amount the customer was implicitly charged in the contract for those goods and services.

Broadening the model

87. The boat example highlights the two issues noted in Memo 100.

- First, profit or loss for the period ended December 31, 2007, gives an incomplete depiction of how the increase in raw materials prices has affected the entity's assets and liabilities. This is because the contract loss reflects how that increase has affected the price a market participant would demand for fulfilling the obligation to provide a boat. However, profit or loss does not reflect how that increase may affect the price of the raw materials in inventory or how it might increase the amount the entity would demand from a market participant for the partially completed boat on that date. Said more simply, the contract loss depicts Entity as if it had not started building the boat.

- Secondly, because the boat is measured at accumulated cost, profit or loss does not reflect the increase in the value of Entity's assets from producing the boat until it is transferred to the customer.

88. Suppose that Entity could sell the partially completed boat to a market participant for CU20,000 and CU46,000 at December 31, 2007, and March 31, 2008 respectively. If the WIP was measured at these amounts, and the amount that exceeded the costs incurred was recognized in profit or loss as production income, then the above summary would be as follows:

	Inception	Dec 31	Mar 31	Jun 30	Total
Revenue	4,000	-	-	46,500	50,500
Production income		2,000	8,000		10,000

Cost of sales (expense)	-	-	-	(46,000)	(46,000)
Contract acquisition expense	(1,000)	-	-	-	(1,000)
Contract loss	-	(500)	-	-	(500)
Margin	3,000	1,500	8,000	500	13,000
Cash	(1,000)	(29,000)	(37,000)	13,000	
Inventory (raw materials)	-	10,000	-	-	
Boat (WIP)	-	20,000	46,000	-	
Contract asset	4,000	3,500	3,500	-	
Retained earnings	3,000	4,500	12,500	13,000	

89. The point to note is that in comparison to the previous table, the margin attributable to building the boat is recognized as the boat is constructed. This more faithfully depicts the changes in a broader set of the entity's assets and liabilities *throughout* the contract.[6]

Current practice (U.S. GAAP and IFRS)

90. Under U.S. GAAP, this contract qualifies for percentage-of-completion (POC) accounting under the AICPA's Statement of Position No. 81-1, which provides guidance for construction-type and other production-type contracts. Likewise, this contract qualifies as a construction contract under IFRS (IAS 11) that recognizes revenue and expenses under the POC method.

91. The POC method results in the recognition of revenue (and related costs) as Entity performs under the contract and makes progress toward the completion of the contract. In this case, assume Entity uses an input method to determine progress toward completion. This method is based on costs incurred to date as a proportion of total costs expected to be incurred. This ratio yields the percentage of total revenue recognized during each reporting period.

Period ended September 30, 2007

92. At contract inception, Entity has not done any work under the contract and has not made any progress toward completion of the contract. In other words, Entity has not earned any revenue.

93. Entity incurs direct contract acquisition costs of CU1,000. Assume these costs are not included as inputs in the POC calculation because they are selling-related and do not relate to contract performance (see paragraph 50 of SOP 81-1 and paragraph 20 of IAS 11).

Dr Contract acquisition expense	1,000	
Cr Cash		1,000

[6] Note that the raw material inventory was not remeasured at December 31, 2007. However, discussion of this accounting mismatch is outside the objective of this paper.

Period ended December 31, 2007

94. On October 1, 2007, Entity purchases materials required to build the boat.

Dr Inventory (raw materials)	20,000	
Cr Cash		20,000

95. Entity begins constructing the boat during this period. In the process, Entity consumes half of the raw materials (CU10,000) while incurring labour costs of CU8,000. Such amounts increase the cost of the boat-in-process.

Dr Cost of sales (boat-in-process)	18,000	
Cr Cash		8,000
Cr Inventory (raw materials)		10,000

96. The CU18,000 of costs directly assigned to the boat-in-process are included as the inputs to the POC calculation. In other words, CU18,000 of costs have been incurred relative to total expected costs of CU36,000. Based on these amounts, Entity has progressed 50 percent toward contract completion and should therefore recognize 50 percent of the total consideration as revenue.

Dr Accounts receivable (unbilled)	25,000	
Cr Revenue		25,000

Period ended March 31, 2008

97. Entity completes the construction of the boat, using the remainder of the raw materials (CU10,000) and incurring labour costs of CU8,000. Such amounts increase the cost of the boat-in-process.

Dr Cost of sales (boat-in-process)	18,000	
Cr Cash		8,000
Cr Inventory (raw materials)		10,000

98. Entity finishes the boat and therefore recognizes the remaining 50% of the total contract consideration as revenue.

Dr Accounts receivable (unbilled)	25,000	
Cr Revenue		25,000

Period ended June 30, 2008

99. On April 1, Entity bills the customer and delivers the boat. The customer pays in full at which point Entity derecognizes the outstanding receivable. For simplicity, this entry ignores the reclassification from unbilled to billed accounts receivable.

Dr Cash	50,000	
Cr Accounts receivable		50,000

100. Summarizing the above journal entries results in the following:

	Inception	Dec 31	Mar 31	Jun 30	Total
Revenue	-	25,000	25,000	-	50,000
Cost of sales	-	(18,000)	(18,000)	-	(36,000)
Contract acquisition expense	(1,000)	-	-	-	(1,000)
Contract loss	-	-	-	-	-
Margin	(1,000)	7,000	7,000	-	13,000
Cash	(1,000)	(29,000)	(37,000)	13,000	
Inventory (raw materials)	-	10,000	-	-	
Accounts receivable	-	25,000	50,000	-	
Retained earnings	(1,000)	6,000	13,000	13,000	

Illustration summary

101. In this example, total revenue under current practice (see paragraph 100 above) is less than total revenue under the Measurement model (paragraph 85). This difference arises because total revenue under current practice is equal to the customer consideration while total revenue under the Measurement model represents the value of the goods and services provided to the customer at the time they are provided.

102. Another difference concerns derecognition of the boat. Current practice derecognizes the boat as it is built because it concludes that the boat is the customer's throughout the construction process. Thus, the obligation to provide boat-building services on the customer's boat is satisfied as those services are rendered. The Measurement model, however, does not derecognize the boat inventory because Entity controls the boat and does not satisfy the related obligation until the boat is delivered. The measurement of the contract at current exit price therefore reflects the price a market participant would require to take on the obligation to construct and deliver a boat.

103. To be clear, just as in the painting example, the outcome of the Measurement model here differs from current practice both because of the different revenue recognition approaches and because of the different conclusions reached about when the boat actually becomes the customer's.

104. Comparing current practice to the broader Measurement model summarized in paragraph 88 is also instructive. First, some revenue and profit are recognized in paragraph 88 at contract inception for obtaining the contract. After contract inception, the margin in paragraph 88 is based on an assessment of the entity's *outputs*—that is, the increase in the value of the partially completed boat. On the other hand, subsequent performance to date under current practice is assessed on the basis of the entity's *inputs*.

WIDGET WITH RETURN RIGHT

105. Consider the following facts and assumptions:

On December 31, 2007, Entity sells and delivers 100 widgets to 100 customers for CU10 each. These widgets were carried in Entity's inventory at CU8 each. The customers pay cash at the time of sale but the terms of the contract allow each customer to return the widget within one year for any reason and to receive a full refund of the consideration.

At contract inception, Entity expects five of the 100 widgets sold to be returned. Any returned widget can be resold but only at a discounted price of CU5. The fair value of a returned widget is CU3.

Assume five widgets were actually returned during the year.

Entity reports annually.

106. The staff chose this example because many contracts for the sale of goods contain a right of return. It is important to illustrate how the Measurement model treats these contracts relative to current practice.

Measurement model

Period ended December 31, 2007

107. During the period ended December 31, 2007, Entity performs various activities that result in it obtaining 100 contracts with customers. At inception of these contracts, Entity has an obligation to provide each customer with a widget (including the right to return the widget within a year for a full refund) and in exchange receives rights to the customer's performance (payment of cash consideration) measured at CU10 per widget.

108. In this situation, each customer pays cash shortly after inception of the contract and by so doing, relinquishes Entity's remaining rights under the contract. Entity then partially performs by delivering the widgets to the customers. However, Entity retains an obligation to accept any returns that may arise during the year and to refund the contract consideration. This obligation results in a contract liability for Entity.

109. The contract liability is measured at its current exit price—that is, the price that a market participant would require to assume the remaining refund obligation from Entity. Assume for this example that this price is CU50. This measurement of the remaining obligation reflects the amount a market participant would require for:

a) Refunding the consideration on the returns expected to arise during a year (CU50); plus

b) Processing the returns (CU5); plus

c) Bearing uncertainty about the number of returns that may arise (CU10); less

d) Receiving the benefit of any returned widgets (which, for instance, could then be resold at a discounted price) (CU3 × 5 = CU15).

110. Based on the information above, Entity records the following entry:

Dr Cash	1,000	
Cr Contract liability		50
Cr Revenue		950

111. Entity also derecognizes its inventory.

Dr Cost of sales	800	
Cr Inventory		800

Period ended December 31, 2008

112. During the period ended December 31, 2008, Entity stands ready to accept any returns. Each of the 100 contracts only required these services for a period of one year. Hence, Entity has satisfied its remaining obligations under the contracts by December 31, 2008. Revenue arises from the satisfaction of these obligations and is reported at the amount by which the contract liability has reduced (CU50).

Dr Contract liability	50	
Cr Revenue		50

113. Entity also processes five returns as expected. The following entry would be made to record the return of the five widgets and cash refund. For simplicity, the administrative expenses associated with processing the returns are ignored in the illustration, although they would affect the profit reported for the period.

Dr Inventory (returns)	15	
Dr Cost of sales	35	
Cr Cash		50

114. Summarizing the above journal entries results in the following:

	2007	2008	Total
Revenue	950	50	1,000
Cost of sales (expense)	(800)	(35)	(835)
Margin	150	15	165
Cash	1,000	950	
Inventory (less inventory returns)	(800)	(785)	
Contract liability	(50)	-	
Retained earnings	150	165	

115. Consistent with the description of the model, the revenue recognized in 2007 is derived from the change in the contract liability. However, some think Entity's revenue should not include the portion of that change that is due to the obligation to refund customer consideration. In this case, that amount is CU35 and represents consideration refunded (CU50) less the fair value of returned inventory (CU15). The substance of these contracts is similar to a deposit, the receipt and repayment of which is not normally recognized as revenue and expense. An alternative presentation might record the journal entries in paragraphs 112 and 113 as follows:

Dr Contract liability	50	
Dr Inventory (returns)	15	
Cr Cash		50
Cr Revenue		15

116. The statement of financial position and margin would be the same under both presentations. However, the total amount of revenue recognized under the alternative above would be CU965 rather than CU1,000.

Current practice (U.S. GAAP and IFRS)

Period ended December 31, 2007

117. Under current practice, Entity recognizes revenue upon delivery of the widgets if specific requirements are met.[7] One of these requirements states that Entity must be able to reasonably estimate the future returns and must recognize a liability at the time of sale for those expected returns. Entity is deemed to meet these requirements and therefore recognizes revenue of CU1,000 (CU10 × 100) upon delivery of the widgets.

Dr Cash	1,000	
Cr Revenue		1,000

118. Cost of sales of CU800 (CU8 × 100) is also recognized for the delivered widgets.

Dr Cost of sales	800	
Cr Inventory		800

119. For the units expected to be returned, Entity then reduces revenue by CU50 (CU10 × 5) and recognizes a liability. This liability is measured at CU7 per unit which is the CU10 expected refund less the CU3 fair value of the returned widget.[8] Hence the total liability is CU35 (CU7 × 5) and cost of sales is adjusted for the residual CU15 (CU50 - CU35).

Dr Revenue	50	
Cr Refund liability		35
Cr Cost of sales		15

Period ended December 31, 2008

120. During the period ended December 31, 2008, Entity processes five widget returns, which satisfies the refund liability. Entity also records the returned widgets in inventory at their fair value and refunds the customers' cash. For simplicity, this example ignores product handling and other incremental administrative expenses that Entity may have incurred.

Dr Refund liability	35	
Dr Inventory	15	
Cr Cash		50

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[7] See FASB Statement No. 48 *Revenue Recognition When Right of Return Exists* and International Accounting Standard No. 18 *Revenue*.

[8] The staff acknowledges that differences in practice might exist between U.S. GAAP and IFRS (and possibly within one or the other) in terms of measuring this liability. For example, some entities might record the liability for the gross amount of consideration expected to be refunded (CU50) rather than the net amount of CU35 (CU50 – CU15) as done here in this example. However, analysis of these differences is outside the scope of this paper.

121. Summarizing the above journal entries results in the following:

	2007	2008	Total
Revenue	950	-	950
Cost of sales (expense)	(785)	-	(785)
Margin	165	-	165
Cash	1,000	950	
Inventory	(800)	(785)	
Refund liability	35	-	
Retained earnings	165	165	

Illustration summary

122. Comparing the tables in paragraphs 114 and 121 reveals a difference between the Measurement model and current practice. Current practice treats the expected returns as a failed sale and therefore excludes their effect from the statement of comprehensive income. The Measurement model, on the other hand, considers the customer's right to return the widget as a separate contractual obligation whose satisfaction gives rise to revenue. As a result of this difference, total revenue under the Measurement model is equal to the consideration originally received/promised in the contract (CU1,000) while revenue under current practice is equal to the cash ultimately retained (CU950) after refunding CU50 for the five widgets returned.

123. Another difference is that the total margin under the Measurement model is recognized over the life of the contracts. In particular, note that the margin that is attributable to the service of providing a right of return is recognized over the period that that service is performed. This would be a change to current practice which recognizes total profit upon delivery of the widgets although Entity is providing risk coverage throughout 2007. Therefore, the Measurement model results in a more faithfully representative pattern of the recognition of when the margin arises. It also illustrates how the Measurement model can be more conservative than current practice in some instances.