

**LEMBAGA PIAWAIAN PERAKAUNAN MALAYSIA
MALAYSIAN ACCOUNTING STANDARDS BOARD**

MASB Standard 4

Research and Development Costs

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Research and Development Costs

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Research and Development Costs

The standards, which have been set in bold type, should be read in the context of the background material and implementation guidance in this Standard, and in the context of the Foreword to MASB Standards. MASB Standards are not intended to apply to immaterial items.

Objective

The objective of this Standard is to prescribe the accounting treatment for research and development costs. The primary issue in accounting for the costs of research and development activities is whether such costs should be recognised as an asset or as an expense. This Standard uses the recognition criteria established in the MASB's A Proposed Framework for the Preparation and Presentation of Financial Statements to determine when research and development costs should be recognised as an expense and when they should be recognised as an asset. It also provides practical guidance on the application of these criteria.

Scope

- 1. This Standard should be applied in accounting for research and development costs.**
2. This Standard supersedes MASB Approved Accounting Standard IAS 9, Accounting for Research and Development Activities and International Accounting Standard IAS 9 (revised), Research and Development Costs, issued by the Malaysian professional accountancy bodies.
3. This Standard does not apply to the costs of exploration and development of oil, gas and mineral deposits in the extractive industries. However, this Standard does apply to the costs of other research and development activities in such industries.

Research and Development Activities Under Contract for Others

4. An enterprise may carry out research and development activities under contract for another enterprise. When the substance of the arrangement is such that the risks and benefits associated with the research and development activities are, or will be, transferred to the other enterprise, the enterprise conducting the research and development activities accounts for the costs in accordance with MASB 2, Inventories, or MASB 7, Construction Contracts. The recipient of the risks and benefits accounts for its costs in accordance with this Standard.
5. When the substance of the arrangement with the other enterprise is such that the risks and benefits associated with the research and development activities are not, or will not be, transferred to others, the enterprise conducting the research and development activities accounts for the costs in accordance with this Standard. Factors which indicate that the risks and benefits of research and development activities are not transferred to others include:
 - (a) the enterprise conducting the research and development activities is contractually obliged to repay any of the funds provided by the other enterprise, regardless of the outcome of the research and development activities; and
 - (b) even though the contract does not require the enterprise conducting the research and development activities to repay any of the funds provided by the other enterprise, repayment could be required at the option of the other enterprise or the surrounding conditions indicate that repayment is probable.

Definitions

6. **The following terms are used in this Standard with the meanings specified:**

Research is original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding.

Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems, or services prior to the commencement of commercial production or use.

7. The nature of activities encompassed by research and development is generally understood. However, it may be difficult in practice to identify those activities in particular instances. While the above definitions assist enterprises in this regard, the identification of research and development activities often depends on the type of business, how the business is organised and the type of projects undertaken.
8. Examples of activities typically included in research are:
 - (a) activities aimed at obtaining new knowledge;
 - (b) the search for applications of research findings or other knowledge;
 - (c) the search for product or process alternatives; and
 - (d) the formulation and design of possible new or improved product or process alternatives.
9. Examples of activities typically included in development are:
 - (a) the evaluation of product or process alternatives;
 - (b) the design, construction and testing of pre-production prototypes and models;
 - (c) the design of tools, jigs, moulds and dies involving new technology;
 - (d) the design, construction and operation of a pilot plant that is not of a scale economically feasible for commercial production; and
 - (e) the assessment of the commercial viability of a product or process prior to commencement of commercial production or use.
10. Examples of activities that may be closely associated with research and development activities but are neither research nor development are:
 - (a) engineering follow-through in an early phase of commercial production;
 - (b) quality control during commercial production, including routine testing of products or processes;

- (c) trouble-shooting in connection with breakdowns during commercial production;
- (d) routine efforts to refine, enrich or otherwise improve upon the qualities of an existing product or process;
- (e) adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity;
- (f) seasonal or other periodic design changes to existing products or processes;
- (g) routine design of tools, jigs, moulds and dies; and
- (h) activities, including design and construction engineering, related to the construction, relocation, rearrangement, or start-up of facilities or equipment other than facilities or equipment used solely for a particular research and development project.

Components of Research and Development Costs

- 11. Research and development costs should comprise all costs that are directly attributable to research and development activities or that can be allocated on a reasonable basis to such activities.**
12. Research and development costs include, when applicable:
 - (a) the salaries, wages and other employment related costs of personnel engaged in research and development activities;
 - (b) the costs of materials and services consumed in research and development activities;
 - (c) the depreciation of property, plant and equipment to the extent that these assets are used for research and development activities;
 - (d) overhead costs, other than general administrative costs, related to research and development activities. These costs are allocated on bases similar to those used in allocating overhead costs to inventories (see MASB 2, Inventories);
 - (e) other costs, such as the amortisation of patents and licences, to the extent that these assets are used for research and development activities; and
 - (f) costs incurred for the enterprise by other entities on research and development activities and charged to the enterprise.

13. Selling costs are not included in research and development costs. Whether or not borrowing costs are included in development costs is determined in accordance with treatments found in generally accepted accounting principles on borrowing costs.

Recognition of Research and Development Costs

14. The allocation of research and development costs to different periods is determined by the relationship between the costs and the economic benefits that the enterprise expects to derive from the research and development activities. When it is probable that the costs will give rise to future economic benefits and the costs can be measured reliably, the costs qualify for recognition as an asset. The nature of research is such that there is insufficient certainty that future economic benefits will be realised as a result of specific research expenditures. Therefore, research costs are recognised as an expense in the period in which they are incurred. The nature of development activities is such that, because the project is further advanced than the research phase of the activities, the enterprise can, in some instances, determine the probability of receiving future economic benefits. Therefore, development costs are recognised as an asset when they meet certain criteria that indicate that it is probable that the costs will give rise to future economic benefits.

Research Costs

15. **Research costs should be recognised as an expense in the period in which they are incurred and should not be recognised as an asset in a subsequent period.**

Development Costs

16. **The development costs of a project should be recognised as an expense in the period in which they are incurred unless the criteria for asset recognition identified in paragraph 17 are met. Development costs initially recognised as an expense should not be recognised as an asset in a subsequent period.**
17. **The development costs of a project should be recognised as an asset when all of the following criteria are met:**

- (a) the product or process is clearly defined and the costs attributable to the product or process can be separately identified and measured reliably;**
- (b) the technical feasibility of the product or process can be demonstrated;**
- (c) the enterprise intends to produce and market, or use, the product or process;**
- (d) the existence of a market for the product or process or, if it is to be used internally rather than sold, its usefulness to the enterprise, can be demonstrated; and**
- (e) adequate resources exist, or their availability can be demonstrated, to complete the project and market or use the product or process.**

The development costs of a project recognised as an asset should not exceed the amount that is probable of being recovered from related future economic benefits, after deducting further development costs, related production costs, and selling and administrative costs directly incurred in marketing the product.

18. While the development costs of a project may meet the definition of an asset, the costs might not meet the asset recognition criteria because there is insufficient certainty that future economic benefits will flow to the enterprise as a result of the development costs. In such circumstances, the development costs are recognised as an expense in the period in which they are incurred and are not recognised as an asset in a subsequent period.
19. The economic benefits expected to flow from development activities include revenue from the sale of the product or process, and cost savings or other benefits resulting from the use of the product or process by the enterprise itself. The estimates of the revenues and cost savings are based on the future prices and costs if it is probable that future selling prices will be lower than those prevailing at the end of the period, and the lower selling prices will not be fully offset by additional cost savings. In other cases, the estimates of revenues and cost savings are based on prices or conditions prevailing at the end of the period.

20. The application of the asset recognition criteria in paragraph 17 involves an assessment of the uncertainties that inevitably surround development activities. Such uncertainties are taken account of by the exercise of prudence when making the judgements needed in determining the amount of development costs to be recognised as an asset. This exercise of prudence does not permit the deliberate understatement of assets.

Amortisation of Development Costs

21. **The amount of development costs recognised as an asset should be amortised and recognised as an expense on a systematic basis so as to reflect the pattern in which the related economic benefits are recognised.**
22. The relationship between development costs and the economic benefits that the enterprise expects to derive can usually only be broadly and indirectly determined because of the nature of the development activities. When amortising development costs on a systematic basis so as to reflect the pattern in which the related economic benefits are recognised, the enterprise makes reference to:
- (a) the revenue or other benefits from the sale or use of the product or process; or
 - (b) the time period over which the product or process is expected to be sold or used.

Amortisation commences when the product or process is available for sale or use.

23. Technological and economic obsolescence creates uncertainties that restrict the number of units and the time period over which the development costs are to be amortised. Furthermore, it is usually difficult to estimate the further costs and related future revenues of a new product or process beyond a short period. For these reasons, development costs are normally amortised over a period not exceeding five years.
24. In some circumstances, the economic benefits flowing from development costs are absorbed by the enterprise in producing other assets rather than giving rise to an expense. In this case, the amortisation of the development costs comprises part of the costs of the other asset and is included in the carrying amount of the other asset. For example, development costs previously recognised as an asset may be included

in the costs of manufactured inventories. Development costs included in the carrying amount of other assets in this way are recognised as an expense at the same time as the other costs of those assets.

Impairment of Development Costs

25. **The development costs of a project should be written down to the extent that the unamortised balance, taken together with further development costs, related production costs, and selling and administrative costs directly incurred in marketing the product, is no longer probable of being recovered from the expected future economic benefits. The unamortised balance of development costs of a project should be written off as soon as any of the criteria in paragraph 17 for recognition of development costs as an asset cease to be met. The amount of the write-down or write-off should be recognised as an expense in the period in which the write-down or write-off occurs.**
26. The unamortised balance of development costs of a project recognised as an asset is reviewed at the end of each period. Current circumstances or events may indicate that the unamortised balance, taken together with the other relevant costs, exceeds the related future economic benefits. Alternatively, the unamortised balance may no longer meet the criteria for recognition as an asset.
27. **The amount of development costs written down or written off in accordance with paragraph 25 should be written back when the circumstances and events that led to the write-down or write-off cease to exist and there is persuasive evidence that the new circumstances and events will persist for the foreseeable future. The amount written back should be reduced by the amount that would have been recognised as amortisation in accordance with paragraph 21 had the write-down or write-off not occurred. The amount written back should be recognised as a reduction in the amount of development costs recognised as an expense for the period.**
28. The circumstances or events that led to the write-down or write-off of development costs in accordance with paragraph 25 may change such that the amount of the write-down or write-off once again qualifies for recognition as an asset. In such a case, the amount of the write-down or

- write-off is written back. For guidance as to what might constitute persuasive evidence as per paragraph 27, reference can be made to generally accepted accounting principles on the impairment of assets.
29. The amount of the write-down or write-off that is written back is reduced by the amount of amortisation that would have been recognised as an expense during the period in which the asset was written down or written off. This is necessary when, for example, the enterprise has recognised revenue or other benefits from the sale or use of the product or process during the periods in which the asset was written down or written off.

Disclosure

30. **The financial statements should disclose:**
- (a) the accounting policies adopted for research and development costs;**
 - (b) the amount of research and development costs recognised as an expense in the period;**
 - (c) the amortisation methods used;**
 - (d) the useful lives or amortisation rates used; and**
 - (e) a reconciliation of the balance of unamortised development costs at the beginning and end of the period showing:**
 - (i) development costs recognised as an asset in accordance with paragraph 17;**
 - (ii) development costs recognised as an expense in accordance with paragraphs 21 or 25;**
 - (iii) development costs allocated to other asset accounts; and**
 - (iv) development costs written back in accordance with paragraph 27.**
31. An enterprise is encouraged to include in either the financial statements or elsewhere in its annual report a description of its research and development activities. It is also encouraged to disclose the circumstances or events that led to the recognition of an expense for the impairment of development costs in accordance with paragraph 25 and the write-back of development costs in accordance with paragraph 27.

Transitional Provisions

- 32. When the adoption of this Standard constitutes a change in accounting policy, an enterprise is encouraged to adjust its financial statements in accordance with MASB 3, Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies. Alternatively, enterprises should recognise as an asset only those development costs which are incurred after the effective date of the Standard and meet the criteria in paragraph 17.**

Effective Date

- 33. This MASB Standard becomes operative for financial statements covering periods beginning on or after 1 July, 1999.**

Appendix 1

Compliance with International Accounting Standards

The requirements of this MASB Standard are consistent, in all material respects, with International Accounting Standard IAS 9 (revised), Research and Development Costs.