

**Confidential and Industry Research and Development
Board [1997] AATA 67 (6 March 1997)**

ADMINISTRATIVE APPEALS TRIBUNAL

**CONFIDENTIAL v. INDUSTRY RESEARCH AND DEVELOPMENT
BOARD**

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Industry Research And Development

COURT

ADMINISTRATIVE APPEALS TRIBUNAL

GENERAL ADMINISTRATIVE DIVISION

B J McMAHON (Deputy President) AND I R WAY (Member)

CATCHWORDS

Industry Research And Development - research and development activities - software development project - certificate issued - ineligible for tax concession - whether the software project involved innovation or technical risk

Words and Phrases - "innovation"

Industry Research and Development Act 1986 ss 39L, 39T(4) Income Tax Assessment Act 1936 s 73B(1) Acts Interpretation Act 1901 s 15AA

Diethelm Manufacturing Pty Ltd v Commissioner of Taxation [1993] FCA 437; (1993) 44 FCR 450 Re Secretary, Department of Social Security and Diepenbroeck [1992] AATA 149; 15 AAR 411

HEARING

SYDNEY, 16-17 December 1996 6:3:1997

Counsel for the applicant: Mr S McMillan

Solicitors for the applicant: Ernst & Young

Counsel for the respondent: Mr J Spigelman QC Mr M Bevan-John

Solicitors for the respondent: Blake Dawson Waldron

ORDER

The decision under review is set aside and the matter is remitted to the respondent with the direction that the applicant is entitled to a favourable certificate under s 39L of the Industry Research and Development Act 1986.

DECISION

B J McMAHON AND I R WAY 1. This is an application brought pursuant to s 39T of the Industry Research and Development Act 1986 ("the Act") to review a decision made under s 39L which was confirmed on review pursuant to sub-section 39S(4). Sub-section 39T(4) provides that the hearing of a proceeding relating to a reviewable decision must take place in private. The sub-section makes no mention of the procedure to be adopted in publishing reasons for a decision. The purpose of a private hearing, however, would be defeated by a public relation of all the identifying details in a decision. These reasons are cast therefore in such a way as to preserve the confidential identity of the applicant. In order to explain the decision, it is useful first to turn to the functions of the respondent and to the relevant legislation.

2. The Industry Research and Development Board (the Board), in conjunction with the Commissioner for Taxation, is responsible for the joint administration of the Commonwealth Government's tax concession for research and development.

3. The Board is empowered by Part IIIA of the Act to make determinations in relation to a number of matters bearing upon the eligibility of companies to claim the tax concession.

4. One of these is the power to determine whether particular activities come within the concept of "research and development activities" ("R&D") as defined in s 73B(1) of the Income Tax Assessment Act 1936 ("ITAA"). Where the Board reaches a view on this question, it may issue a certificate to the Commissioner for Taxation notifying the Commissioner of its views. Certificates issued by the Board are binding upon the Commissioner for Taxation.

5. Where the Commissioner for Taxation requests the Board to provide it with a certificate in relation to whether particular activities are R&D, the Board is obliged to inquire into the matter and provide the Commissioner with a certificate stating its views. A certificate so supplied is binding upon the Commissioner for Taxation.

6. The Board is supported in its work by Ñ the Tax Concession Committee (TCC), to whom it has delegated a number of powers, including the power to issue certificates pursuant to s 39L; and the staff of AusIndustry within the Department of Industry, Science and Technology (DIST).

7. At the relevant time, s 73B(1) of the ITAA provided that R&D means " (a) systematic, investigative or experimental activities that - are carried on in Australia or in an external Territory; involve innovation or technical risk; and are carried on for the purpose : of acquiring new knowledge (whether or not that knowledge will have a specific practical application); or creating new or improved materials, products, devices, processes or services; or other activities that : are carried on in Australia or in an external Territory; and are carried on for a purpose directly related to the carrying on of activities of the kind referred to in paragraph (a);"

8. The four requirements of paragraph (a) are cumulative. It seems to us, however, that the two requirements of sub-paragraph (a)(ii) are in the alternative. Thus, if all the requirements of paragraph (a) are present, except possibly those of sub-paragraph (a)(ii) then in order to qualify for a favourable certificate, an applicant must show either innovation or technical risk. If it can successfully show one or other of the qualities then it is entitled to its certificate. We believe that innovation and technical risk are two different criteria (as we will later discuss) and that the use of the word "or" is not simply to explain the former word by reference to the latter phrase. The terms of s 73B have since been amended.

9. The Act relevantly provides "Certificate as to research and development activities 39L(1) The Board may, and shall if requested in writing by the Commissioner to do so, give to the Commissioner a certificate stating whether particular activities that have been or are being carried on by or on behalf of a person were or are research and development activities. (2) If the Board issues a certificate to the effect that particular activities were not or are not research and development activities, the Board must give notice in writing to the person concerned stating the reasons for issuing the certificate."

10. Activities must come within the meaning of R&D in order to qualify for the tax concession. Elements of the definition which must be satisfied before activities can be considered to be R&D include (relevantly) that the activities "be either "systematic, investigative or experimental"; and "involve innovation or technical risk"; and be carried on for the purpose of "acquiring new knowledge; or creating new or improved materials, products, devices, processes or services.

11. In the present case it was agreed that all elements in the activities required by the definition were present, except for the requirement of innovation or technical risk. Neither word, nor phrase, is defined for the purposes of the Act.

12. The primary decision under review (T21) in this matter was made at a meeting of the TCC held on 2-3 August 1995.

13. It is a decision of the TCC to issue a certificate to the Commissioner for Taxation pursuant to s 39L of the Act that activities undertaken by the applicant do not comply with the definition of R&D within the meaning of Part IIIA of the Act.

14. On 8 August 1995 the Board informed the company of the TCC's decision (T23). The letter relevantly stated Ñ "The Board has conducted the internal review and has determined, on the basis of the information supplied, that there was insufficient evidence of innovation or technical risk to overturn its original decision."

15. A certificate pursuant to s 39L notifying the Commissioner for Taxation of the TCC's decision was sent on 8 August 1995 (T24).

16. The decision under review concerns a project known as the "Abstract Syntax Notation One C++ Compiler". This was a software development project undertaken by the applicant during the years of income ended 31 December 1990, 1991 and 1992. The decision under review is limited, however, to whether the work undertaken as part of the project was R&D in the years of income ending 31 December 1990 and 1991.

17. The reviewable decision is a reconsideration by the TCC of the primary decision in relation to the same project (together with a number of others which the TCC certified did comply with the definition of R&D) (T11). The TCC's reconsideration of its earlier decision was conducted in accordance with the rights of internal review conferred upon applicants pursuant to s 39S of the Act. We presume that the Board has delegated its functions of review to the TCC as well as the function of making primary decisions. No issue was raised in relation to this, although one would expect that a review would more appropriately be carried out by a body other than that which made the decision to be reviewed.

18. The predominant reason for the TCC's conclusion that the "Abstract Syntax Notation One C++ Compiler" project failed to come within the meaning of R&D was its failure to exhibit the necessary degree of innovation or technical risk. It followed, therefore, that the activities were not R&D in the sense required by Part IIIA of the Act.

19. In reaching this view, the TCC is said to have had regard to the discussion about the notion of innovation set out in the Board's publication Guide to Benefits - 150% R&D Tax Incentive (T25). The statements at pp 38-40 of the Guide reflect the Board's considered views on the subject, and require the TCC to take account of all relevant material including Ñ the explanatory memorandum to the relevant parliamentary bills; and the provisions of the internationally recognised standards of the OECD Proposed Guidelines for Collecting and Interpreting Technological Data ("the Oslo Manual"). (The reason for taking account of this publication was not made clear to us).

20. The Board takes the view that in order to constitute "innovation" in the requisite sense, an activity must have an "appreciable degree of novelty". In the statement of reasons provided pursuant to s 37 of the Administrative Appeals

Tribunal Act, the Board indicated that the basis for this understanding was to be found in two previous decisions of this Tribunal to which we will later come.

21. Likewise in relation to the issue of "technical risk". The Board took account of its own established policy on this issue. This approach is based (see Guide to Benefits - 150% R&D Tax Incentive, pp 40-43) (T25) upon the belief that there is no technical risk in a given activity unless either Ñ there is reasonable uncertainty over what the results will be; or there is reasonable certainty over the general results, but reasonable uncertainty over which of several alternatives is technically feasible, meets a desired technical specification, or meets a desired cost target.

22. As the relevant activities consisted of the development of computer software the Board indicated in its s 37 statement that it had particular regard to a segment of its guidelines which was in these terms Ñ "The essence of innovation in relation to software is not in the code sequence but in the purpose of the code. Does the code deliver some new function? Is it more efficient/reliable/reconfigurable etc in some new way? Are there improvements acknowledged as significant by those knowledgeable in the area. Real technical risk which would qualify a software development for the tax concession could, for example, involve the following: We are building in accordance with a new industry standard (hardware or software) that has not yet been finalised; the project is at the frontiers of computing science; or we know what the users say they want but cannot yet determine if these requirements are redundant or incomplete."

23. The applicant contends that the activities undertaken by it in the development of the compiler fall within the definition. Broadly speaking this assertion is denied by the respondent on the grounds that the activities demonstrate insufficient evidence of innovation or technical risk. The respondent asserted that the activities were not carried on for the purpose of the development of a new product (an alternative basis for the claim). Rather it asserted that the activities were carried out for the purpose of upgrading an existing product.

24. As to innovation, the applicant contended that computer programming in the programming language referred to as "C" is substantially and technically different from programming in the computer language referred to as "C++". Both the programming skills and the resultant software code, it was said, are significantly different from one language to the other. Therefore, the claim of the applicant was that software code which is generated from an ASN1 C compiler is different in form to code which would be generated from an ASN1 C++ compiler. In answer to this claim the respondent contended that the language referred to as "C" is not substantially and technically different from programming in the computer language referred to as "C++". The programming skills used to generate C++, it was said by the respondent, were regularly used in the industry and the resultant software was merely an upgrade of an existing product. Although it was agreed that the software code which is generated from an ASN1 C compiler is different from the code

which would be generated from an ASN1 C++ compiler the end product is still merely an upgrade of an existing product.

25. Then the applicant contended that the aim of the activities was to ensure that the ASN1 C++ compiler would also possess additional functionality which was not previously available in ASN1 C compilers. This was intended to include the ability to produce output syntax in compliance with the international standards for Basic Encoding Rules BER as well as the developing standards for Light Weight Encoding Rules LER and Distinguished Encoding Rules DER. The applicant contended that at the time no single compiler product within the applicant's organisation or elsewhere was capable of selecting output between these various encoding rules. The respondent put this in issue by denying that the functionality of the compiler was significantly different from that previously available in ASN1 C compilers.

26. As to technical risk, the applicant contended that the development of its compiler involved significant technical risk because of the technical uncertainties regarding its performance. It was contended that it was uncertain whether or not it would be possible to develop an ASN1 C++ compiler which would perform the tasks which it was intended to perform. The respondent on the other hand argued that with the use of programming techniques and tools regularly used in the industry there was no real or substantial risk or uncertainty involved in developing the product. The respondent denied that there was any uncertainty regarding the design and programming methods to be employed and asserted that the techniques used to generate the compiler were regularly used in the industry.

27. Two previous decisions of this Tribunal were referred to by the decision-makers in their statement of reasons, namely *Re North Broken Hill Limited and Industry Research and Development Board* 93 ATC 2148 and *Re Mobil Oil Australia Limited and Industry Research and Development Board* 95 ATC 2042. The second of these, *Re Mobil Oil Australia Limited*, was decided in May 1995. In that case no special meaning appears to have been attributed to the word "innovation". No reference was made (as in the earlier case of *Re North Broken Hill Limited*, decided in August 1993) to the Explanatory Memorandum or to the any Parliamentary speech. The Tribunal simply proceeded on the basis that the word "innovation" was an ordinary English word which should be given its ordinary meaning.

28. As to the term "technical risk", it quoted a passage from the transcript of a submission by counsel for the applicant. The words used in the submission have a degree of informality which seem to indicate that the meaning of the phrase was not explored in any depth in a contested setting. The Tribunal appears to have adopted the submission, however, without comment. It is true that "the dictionary is not very helpful" in attributing a meaning to this phrase. If it is restricted merely to mean in "uncertainty as to outcome", as the Tribunal appeared to treat it, then

we agree that such a meaning would be consistent with the ordinary meaning to be attributed to the words and to the interpretation to be given to the statute. We see nothing in the Tribunal's reasons to support an interpretation of "technical risk" to mean that "there is reasonable certainty over what the general results of the activities will be, but reasonable uncertainty over which of several alternatives is technically feasible, meets a desired technical specification, or meets a desired cost target" as the Board expands the term in its publication Guide to Benefits. So far as we can see this phrase originated from the Board's understanding of the meaning to be attributed to the two words "technical risk" used in the statute. They are the Board's own words.

29. Much more reliance was placed by the respondent upon the decision in *Re North Broken Hill Limited*. In fact, however, it seems to us that the Tribunal in that application decided very little apart from conclusions flowing from an extensive review of the facts relevant to that particular application. The Tribunal quoted dictionary meanings of "innovation" and professed itself to be satisfied that there was no ambiguity or obscurity in the meaning of the word as it appeared in the context of s 73B (paragraph 41). Nevertheless the Tribunal went on to quote from the Explanatory Memorandum and from the Second Reading speeches. The phrase "appreciable element of novelty" comes from the Explanatory Memorandum and also from a manual which was tendered in evidence and which was referred to in the Second Reading speech in the Senate. There is no reference to "an appreciable element of novelty" in the statute. The Tribunal, however, assumed that this was the meaning intended by the phrase "involved innovation" (paragraph 45). From this assumption (which was unnecessary to the Tribunal's reasons for decision) arose the basis for the present reviewable decision. As we pointed out in paragraph 18, the Board was concerned at the applicant's failure to exhibit the necessary degree of innovation. In other words whilst there may have been an element of novelty in the involvement, there was not an "appreciable" element.

30. The Explanatory Memorandum in relation to the words "technical risk" used the words "the outcome can not be predicted with certainty". The Tribunal modified this slightly (paragraph 48) by saying that it was not satisfied that there was any technical risk "that is to say there was no technological uncertainty about the outcome". This is much the same meaning that was later to be attributed to the phrase in *Re Mobil Oil Australia Limited*.

31. The only new legal element introduced by the Tribunal of its own motion was the suggestion that in order for existing technology to be innovative "there must be some development of the technology or a new use of existing technology for an activity to involve innovation". This approach appears to have been based upon the dictionary definitions of "innovation".

32. Certain propositions can be discerned from these decisions and certain further observations concerning them can be made.

33. Firstly it should be noted that the phrase in the legislation currently under consideration is "involved innovation or technical risk". In construing that phrase, s 15AA of the Acts Interpretation Act 1901 requires an interpretation which promotes the purpose or object of the section. The object of the Act, to be found in s 3, is to promote the development and improve the efficiency and international competitiveness of Australian industry by encouraging research and development activities. Thus an interpretation of the phrase which encourages research and development is to be preferred to one which does not.

34. There is no requirement in the statute that the innovation, or technical risk, should be substantial. That assumption comes from a gloss on the statute originating in the Explanatory Memorandum. It has the effect of giving a narrower application to the phrase than the words would normally bear. A provision designed to encourage a class of activity is not to be given a narrow application (*Diethelm Manufacturing Pty Ltd v Commissioner of Taxation*[1993] FCA 437; (1993) 44 FCR 450 at 457). The opposition of the respondent (but not those officers of the respondent that advised the Board) was largely based upon this concept that innovation had to involve substantial novelty. To this extent we consider the opposition was misconceived. The guidelines appear to have been drawn up with a view to the statements in the Explanatory Memorandum rather than to the provisions of the Act. Although regard must be had to guidelines in administrative review, it must first be shown that the guidelines are lawful and do not extend beyond the terms of the statute (*Re Secretary, Department of Social Security and Diepenbroeck*[1992] AATA 149; 15 AAR 411). A number of other misconceptions appear to have arisen as a result of misinterpretation of the two earlier decisions to which we have referred.

35. We are fortified in our conclusion that "innovation" should not be given a narrow meaning because of the subsequent history of the legislation. Section 73B (and the corresponding definition of research and development activities in s 4 of the Act) have been amended since the relevant fiscal years. Parliament had an opportunity to define innovation by reference to the degree of originality involved – whether appreciable or substantial. The word has been retained in its old form in the present legislation. The phrase "technical risk" was also left intact when the definition was amended. Had Parliament intended to give these words a narrower scope of operation, it had an opportunity to do so. We turn now to the misconceptions referred to in the previous paragraph.

36. Contrary to suggestions made by the respondent, there is no requirement that research be conducted with an appreciation of specific matters of technical risk or that those conducting the research be aware that what had been done involves innovation or technical risk. There is nothing in the legislation or in the earlier decisions to support such a proposition.

37. The respondent submitted that merely to produce a new product, or one having novelty, does not necessarily involve innovation under the Act. As counsel put it "it is the process, not the product, that must meet the criteria, as Re North Broken Hill Limited shows". In our opinion, this proposition can not be elicited from anything that was said in the reasons in Re North Broken Hill Limited. The legislation requires that the activities involve innovation. If what is produced is an innovative product then the activity must, as a matter of logic, involve innovation. The definition in the ITAA in fact contemplates that the purpose of the research may be the creation of new or improved products. Neither the definition, nor anything said in the previous cases require that this reference be read down to refer only to processes rather than products.

38. Counsel for the respondent submitted that in considering "technical risk" one should decide whether there is a realistic likelihood of the work failing altogether. The section does not require this and the agreed interpretation to be found in Mobil Oil Australia Limited makes no reference to it. A mere uncertainty as to outcome is all that is required. If the present submission were to be accepted, it would result in the section having almost no scope for positive operation. Few commercially responsible companies would decide to invest resources in projects where there was a realistic likelihood of the work failing altogether.

39. Another submission was put in relation to evidence given on behalf of the applicant that whereas there was no known technical solution at the time the research was undertaken, the witness who was involved in that research had no doubt that it would be found. In our view, this does not obviate technical risk. The fact that no problems are found as a project progresses, does not mean that there is no risk. Furthermore the fact that commercial risks were involved, does not necessarily displace the presence of technical risks. There is no necessary dichotomy between technical risk and commercial risk and it is erroneous to categorise a project as involving either technical risk or commercial risk. Support for this proposition can not be found in Re North Broken Hill Limited.

40. Evidence was given by four witnesses on behalf of the applicant. Mr W had actually worked on the project. Mr G, who worked for the same company and was aware that the activities were taking place, had a greater degree of acknowledged expertise and gave opinion rather than factual evidence. A third witness Mr HH was not cross-examined as his involvement with the project was marginal. The fourth witness Professor H, a professor of computing, gave an extensive report but was not cross-examined.

41. Although Mr G's knowledge was gained principally from reading the documentation and from casual conversations with Mr W, nevertheless we found his evidence of assistance in formulating and supporting the claim. In a written statement he identified the core of the innovation claimed by the applicant as follows Ñ "The core of the innovation being offered by the ASN 1 C++ compiler

was that it generated object-oriented C++ code rather than procedural style C code. This code used the new object-oriented mechanisms provided by C++ code generated by the ASN 1 C++ compiler and was significantly different in form and application generated by previous ASN 1 compilers. ASN 1 compilers are not just concerned with the definition of data structures. The task of an ASN 1 compiler is to generate code to handle the encoding and decoding of messages whose possible structure has been defined through the use of ASN 1. Application programmers need to be given the ability to decode an encoded message, access the component parts of an encoded message, build up a new message to be encoded and encode a message. Any data structures used in this process form just a part of the interface provided to this functionality. The ASN 1 C++ compiler provided an object-oriented interface to object-oriented C++ code rather than C-style data structures."

42. The respondent called three independent experts. Their conclusions, however, were based upon their understanding of the meaning of the terms innovation or technical risk. Whilst there is no question about their expert qualifications, their evidence has to be viewed in this light. Counsel for the applicant submitted that their evidence should be discounted because none of them had practical experience in developing a compiler. We do not regard this as a disqualification or as demonstrating an inability to understand and articulate the issues as the witnesses saw them. We may add that neither member of this Tribunal has had any experience in developing a compiler. To our knowledge no member of the Tribunal in *Re North Broken Hill Limited* had experience in designing and implementing a "product tracking system" at a paper mill. A lack of practical experience may be of relevance in some contexts. For the purpose of expressing opinions in applications of this nature, it could hardly be regarded as a matter of importance. Indeed the mere fact that the research must involve innovation would seem to indicate that in some areas it will be the first in its field and that there will be no witnesses, apart from those involved, who can point to any experience that would be relevant.

43. Professor H who was called by the applicant was not cross-examined by counsel for the respondent. In his written submissions, he indicated that the reason for taking this course was the "evident innocuousness" of the professor's statement. He added: "in general, his statement is unremarkable by reason of its generalities."

44. There may have been statements of this nature included in his evidence but by and large we found the uncontested evidence of this witness helpful and see no reason why it should be rejected. It is balanced and non-partisan (adjectives that could not be universally applied to the evidence of all other witnesses in this application). His concluded views were: "3 The product was innovative in that no equivalent product existed at that time. The concept was not innovative, since it was already present in the compilers that targeted C. However, the implementation had to pioneer new territory. In particular it had to establish the best ways of structuring the target code for C++ environments. 4..... 14 The notion of 'technical risk' is said to be absent if the solutions 'could be arrived at by any experienced

professional in the field' (see report of [respondent] p5, citing p41 of the DITRD Guide to Benefits.) I agree with other assessors that there was little risk in the technology itself, but that there was 'induced' risk in the attempt to apply it. The plain fact is that the field of software development littered with projects that failed, some costing \$100M or more. ... the [applicant] compiler project was certainly subject to such risks. ... 17 Let me say in conclusion that I agree with much of what is [said by respondent's witnesses]. However, I believe that they have overstated their case and that there is real substance to the claims made by [applicant]. While some aspects of the project may have been routine development, it should be acknowledged (against the background of 1990) that others involved elements of innovation and pioneering risk."

45. It was sometimes forgotten during the conduct of this hearing that the reviewable decision related to work carried out as far back as 1990. In the fields of development of computer software and generally in the design of compilers, innovation and technical risk move at considerable speed. It is necessary to evaluate the work done at the time it was carried out. In relation to this Professor H said Ñ "4 In early 1990, C++ was still a relatively new language, having been released by AT & T in late 1985. Similarly, object- oriented programming was much less established as a discipline than it is today. 5 It is true that C++ is an extension of C. As its name implies, it consists of the C language with various additions. However, it needs to be appreciated that in order to take advantage of these additions, it is necessary to program in a radically different style. This style is known as 'object-oriented' and stands in contrast to the previously established 'functional' style. Over the past ten years there has been a major debate over the relative merits of these two styles; but no-one disputes that they are radically different. 6 The essential difference between the two styles lies in the nature of the software modules that they use. The older style is built on functions; the newer style is built on objects. A major advantage of working with objects is that they combine data structures and functions into a single module, known as a class, that provides a well-defined, controlled interface to the rest of the software. 7 It was very inconvenient for a C++ programmer to have to work with an ASN 1 compiler whose target code was C. In principle, it might have been possible to use the C code more or less unchanged. In practice, this would have cut across the design philosophy of the C++ software and exposed the code to all the hazards that C programmers regularly endure. The C++ programmers therefore had to rework the compiler's output, manually changing it to an equivalent C++ form. They had to do this for each new ASN 1 specification and for each change to an existing one. 8 The advantage of the product is that by generating C++ code from the outset, it saves this manual reworking. Furthermore, by incorporating good design principles for the target classes, it can ensure that the resulting code is of consistently high quality."

46. It is possible to discern a consensus in all of the evidence put forward, both for the applicant and for the respondent. All witnesses agreed that that there was an

involvement in some innovation and some technical risk. The real issue was whether those elements were present in a substantial degree. As we have indicated we are of the view that it is not necessary to show this quality in order to qualify for the deduction. Having regard to this evidence and to our understanding of the legal principles we are satisfied that the work carried out involved innovation, or technical risk, or both. The decision under review therefore will be set aside and the matter will be remitted to the respondent with the direction that a certificate to this effect should be issued by the respondent.