FEDERAL COURT OF AUSTRALIA

Research Affiliates LLC v Commissioner of Patents [2013] FCA 71

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| Citation: | Research Affiliates LLC v Commissioner of Patents [2013] FCA 71 |
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| Parties: | **RESEARCH AFFILIATES LLC v COMMISSIONER OF PATENTS** |
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| File numbers: | NSD 3 of 2011NSD 2332 of 2011 |
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| Judge: |  |
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| Date of judgment: | 13 February 2013 |
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| Catchwords: | **PATENTS** – s 18(1)(a) of the *Patents Act 1990* (Cth) – whether claimed invention is a manner of manufacture within the meaning of s 6 of the *Statute of Monopolies* – where claimed invention provides a method to create a securities index by means of a computer – appeal from decision of Commissioner of Patents refusing the patent applications for want of manner of manufacture |
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| Legislation: | *Patents Act 1903* (Cth)*Patents Act 1952-55* (Cth)*Patents Act 1990* (Cth) ss 18(1)(a), 18(1)(b), 29, 40, 44, 45, 49, 51, 79B*Statute of Monopolies 1623* (Imp) (21 Jac 1 c 3) s 6  |
|  |  |
| Cases cited: | *Burroughs Corporation (Perkin’s) Application* [1974] RPC 147*Ccom Pty Limited v Jiejing Pty Limited* (1994) 51 FCR 260*Grant v Commissioner of Patents* (2006) 154 FCR 62*International Business Machines Corporation v Commissioner of Patents* (1991) 33 FCR 218*National Research Development Corporation v Commissioner of Patents* (1959) 102 CLR 252  |
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| IN THE FEDERAL COURT OF AUSTRALIA |  |
| NEW SOUTH WALES DISTRICT REGISTRY |  |
| GENERAL DIVISION | NSD 3 of 2011 |

ON APPEAL FROM THE COMMISSIONER OF PATENTS

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| BETWEEN: | RESEARCH AFFILIATES LLCApplicant |
| AND: | COMMISSIONER OF PATENTSRespondent |

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| JUDGE: | EMMETT J |
| DATE OF ORDER: | 13 February 2013 |
| WHERE MADE: | SYDNEY |

THE COURT ORDERS THAT:

1. The appeal against the Commissioner’s decision be dismissed with costs.

Note: Entry of orders is dealt with in Rule 39.32 of the *Federal Court Rules 2011*.

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| IN THE FEDERAL COURT OF AUSTRALIA |  |
| NEW SOUTH WALES DISTRICT REGISTRY |  |
| GENERAL DIVISION | NSD 2332 of 2011 |

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| JUDGE: | EMMETT J |
| DATE OF ORDER: | 13 FEbruary 2013 |
| WHERE MADE: | SYDNEY |

THE COURT ORDERS THAT:

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Note: Entry of orders is dealt with in Rule 39.32 of the *Federal Court Rules 2011*.

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| IN THE FEDERAL COURT OF AUSTRALIA |  |
|  DISTRICT REGISTRY |  |
|  | NSD 3 of 2011 |

 ON APPEAL FROM THE COMMISSIONER OF PATENTS

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| PLACE: |  |

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**REASONS FOR JUDGMENT**

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# INTRODUCTION

These two appeals are concerned with the question of whether the claimed invention of two patent applications is a **manner of manufacture** within the meaning of s 18(1)(a) of the *Patents Act 1990* (Cth) (**the Act**). A delegate of the respondent, the Commissioner of Patents (**the Commissioner**), made decisions refusing both applications on the basis that the claims in the complete specifications that accompanied the applications are not for a manner of manufacture. Research Affiliates LLC (**Research Affiliates**) has appealed to the Federal Court against those decisions of the Commissioner.

# THE ACT

Section 18(1) of the Act relevantly provides that an invention is a patentable invention, for the purposes of a standard patent, if the invention, so far as claimed in any claim:

* + - 1. is a manner of manufacture within the meaning of s 6 of the *Statute of Monopolies 1623* (Imp) (**Statute of Monopolies**),
			2. when compared with the prior art as it existed before the priority date of that claim, is novel and involves an inventive step,
			3. is useful, and
			4. was not secretly used in the patent area before the priority date of that claim.

Chapter 3 of the Act, which consists of s 29 to s 52, deals with the process relating to the grant of a patent from application to acceptance. Part 1 of Chapter 3, which consists of s 29 to s 43, deals with patent applications. Part 2, which consists of s 44 to s 48, deals with the examination of standard patent requests and specifications. Part 3, which consists of s 49 to s 52, deals with acceptance. Division 1 of Part 3, which consists of s 49 to s 51, deals with acceptance of standard patents.

Under s 29, a person may apply for a patent for an invention by filing a patent request and such other documents as are prescribed. An application may be a provisional application or a complete application. A patent request in relation to a complete application must be accompanied by a complete specification. Under s 40(2) of the Act, a complete specification must describe the invention fully and, in the case of an application for a standard patent, end with a claim or claims defining the invention.

Under s 44, where a complete application for a standard patent has been made, the applicant may ask for an examination of the patent request and specification relating to the application. Under s 45, where an applicant asks for an examination the Commissioner must examine the request and specification and report on:

* whether the specification complies with s 40,
* whether the invention, so far as claimed, satisfies the criterion mentioned in s 18(1)(a), and
* whether the invention, so far as claimed in any claim and when compared with the prior art base as it existed before the priority date of that claim, is novel and involves an inventive step.

Section 49 relevantly provides that the Commissioner must accept a patent request, and complete specification relating to an application for a standard patent, if the Commissioner is satisfied that the invention, so far as claimed, satisfies the criteria mentioned in s 18(1)(b) and considers that there is no lawful ground of objection, other than in respect of s 18(1)(b), to the request and specification, or that any such ground of objection has been removed. If not, the Commissioner may refuse to accept the request and specification. Under s 51, an appeal lies to the Federal Court against a decision of the Commissioner under s 49.

# RELEVANT LEGAL PRINCIPLES

Determining whether a claimed invention is patentable involves consideration of concepts that have evolved and are still evolving. The question of whether the claimed invention is a proper subject of letters patent, according to the principles that have been developed for the application of s 6 of the Statute of Monopolies, is to be answered bearing in mind that the term **manufacture** has applications beyond limits suggested by its etymology and that any attempt at precise definition of manufacture is bound to fail (see *Ccom Pty Limited v Jiejing Pty Limited* (1994) 51 FCR 260 at 289) (***Ccom***).

The Commissioner may properly reject a claim for a process that is not within the concept of a **manufacture**. However, even if the process is within that concept, the Commissioner is not bound to accept the allegation of an applicant that it is new, if it is apparent, on the face of the specification, when properly construed, that that allegation is unfounded. Accordingly, it is open to the Commissioner, in a proper case, to direct the deletion of a claim for a process that may be seen from the specification, considered as a whole, to be outside the whole scope of what is known as an invention, on the ground that it is nothing but a claim for a new use of an old substance (*National Research Development Corporation v Commissioner of Patents* (1959) 102 CLR 252 at 261-2) (***NRDC***).

The central question in a case such as this is whether the claimed invention of a specification is patentable. That involves the question of whether the claimed invention falls within the category of inventions to which, by definition, the application of the Act is confined. The definition is exclusive and, accordingly, a claimed invention will not be a patentable invention unless it is a manner of manufacture within the meaning of s 6 of the Statute of Monopolies. Section 6 of the Statute of Monopolies provides that the declarations of invalidity contained in its preceding provisions are not to extend to any letters patent and grants of privilege thereafter to be made:

of the sole working or making of any manner of new manufactures… to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patents and grants shall not use, so as also they be not contrary to the law or mischievous to the State, by raising prices of commodities at home, or hurt of trade, or generally inconvenient.

The Act, like its predecessors, the *Patents Acts 1952-1955* (Cth) and the *Patents Act 1903* (Cth), and corresponding statutes of the United Kingdom, defines the word **invention** not by direct explication in modern-day language but by reference to the established ambit of s 6 of the Statute of Monopolies. Thus, **invention** is defined by s 3 and Schedule 1 of the Act as meaning:

any manner of new manufacture the subject of letters patent and grant of privilege within s 6 of the Statute of Monopolies, and includes an alleged invention.

The definition of invention calls for an enquiry into the scope of the permissible subject matter of letters patent and grants of privilege protected by s 6 of the Statute of Monopolies. It is an enquiry into the breadth of the concept that the law has developed by its consideration of the text and purpose of the Statute of Monopolies. All that is nowadays understood by the word **invention**, as used in patent law, was comprehended in the phrase **new manufactures** in s 6 of the Statute of Monopolies. **Manufacture**, in the Act, is not intended to reduce a question of patentability to a question of verbal interpretation. Rather, it is the general title of the category under which **all** grants of patents that may be made in accordance with the developed principles of patent law are to be subsumed (*NRDC* at 269).

It is therefore erroneous to ask whether a manner (or kind) of manufacture is involved when considering whether a given process or product is patentable and, as such, within the definition of manufacture. Such an approach tends to limit one’s thinking by reference to the idea of making tangible goods by hand or by machine, since **manufacture**, as a word in everyday speech, generally conveys that idea. The real question is whether the claimed invention is a proper subject of letters patent, according to the principles that have been developed for the application of s 6 of the Statute of Monopolies. That is to say, the prior question is the patentability of a given process or product, according to developed principle, rather than whether it is a manufacture. If it is patentable, in accordance with the principles that patent law has developed in regard to interpretation of the phrase **manufacture**, then it is a manufacture. As a result, in this context, the word **manufacture** has always admitted of applications beyond the limits that its etymology might suggest. A widening conception of the notion of **manufacture** has been a characteristic of the growth of patent law (*NRDC* at 269-270).

For a process to fall within the limits of patentability that the context of the Statute of Monopolies has supplied, it must offer some advantage that is material, in the sense that the process belongs to a **useful art**, as distinct from a **fine art**. That is to say, its value to the community must be in the field of economic endeavour. Thus, methods of surgery, and other processes of treating the human body, may lie outside the concept of invention, because the whole subject matter has been traditionally viewed as non-economic (*NRDC* at 275).

**A manner of manufacture**, or kind of manufacture, must be construed as including **the practice** of making or **the process** of making, as well as **the means** of making and **the product** of making. Thus, even though an inventor may not use any newly devised mechanism, nor produce a new substance, he may nevertheless, by providing some new and useful effect through his practice or process, acquire a monopoly in such improved result by explaining how that result is secured by his practice or process. In that regard, the **product** of a process simply means something in which the new and useful effect may be observed. The something need not be a thing, in the sense of an article or object: it may be any physical phenomenon in which the effect, be it creation or merely alteration, may be observed. A method or process will be a manner of manufacture if it results in the production of some **vendible product**,improves or restores a **vendible product** to its former condition, or has the effect of preserving from deterioration some **vendible product** to which it is applied (*NRDC* at 271). Here, the word **product** must be understood as covering every physical result that is an artificially created state of affairs and the word **vendible** must be understood as pointing only to the requirement of utility in practical affairs that renders the product of economic significance (*NRDC* at 276-277). To be patentable, the effect produced by a claimed invention must exhibit those two essential qualities of being an artificially created state of affairs that is of economic significance (*NRDC* at 277).

One must not take a narrow view of what constitutes the **product** of a method. If a method is purely an idea, that method’s product may be mere information, such that the method itself is then not patentable and is not a manner of manufacture. If, however, the method or idea results in a new machine or process, or an old machine giving a new and improved result, that new process or result should be regarded as the **product** of the method and the method is patentable. If the method is an idea, but is also practically realised in the specification, such as in an apparatus enabling the method or idea to be realised in practice, then it is no longer merely an idea since it is practically embodied. It is therefore patentable and a manner of new manufacture for the purpose of s 6 of the Statute of Monopolies (*Burroughs Corporation (Perkin’s) Application* [1974] RPC 147 at 158).

A new use of an algorithm may be a patentable invention. Even if there is nothing new about the mathematics of a claimed invention, if its application results in a commercially useful effect, for example, in computer graphics, there may be a patentable invention. While a mathematical equation may not be patentable in isolation, as a mere idea, when a process is devised that incorporates a more efficient solution of the equation, there may be a patentable invention. When a claim recites a mathematical formula, scientific principle or phenomenon of nature, it is necessary to ascertain whether the applicant is seeking patent protection for that formula in the abstract. A mathematical formula as such is not accorded the protection of the Act. However, if the claim is not for a mathematical formula in the abstract, but rather a way of using the mathematical formula in a process for producing particular effects, there may be a patentable invention (*International Business Machines Corporation v Commissioner of Patents* (1991) 33 FCR 218 at 226).

The phrase **any manner of new manufactures** contains at least three distinct principles or conditions of patentability: manner (or kind) of manufacture, novelty, and inventiveness. The requirement for utility may have been derived from the prohibition upon manufactures that are generally inconvenient. Other requirements, such as not obtaining by false suggestion, were derived from the general law attending the writ of *scire facias* to recall Crown grants and the Chancery jurisdiction in respect of fraudulent grants. Grounds of revocation were developed by the common law. Particular grounds of invalidity, derived from case law, were subsequently added to patent legislation. Thus, lack of inventiveness, as distinguished from lack of novelty, obtained distinct statutory recognition only in the 20th century. Eventually, the phrase **manner of new manufactures** came to represent the **residuum** of the central concept of invention.

The structure of s 18(1) emphasises that the grounds relating to novelty, inventive step, utility and secret use were each excised from the general body of case law that had previously developed the phrase **manner of new manufactures**. That is made clear by the reference in s 18(1)(a) to **manner of manufacture**, rather than to **manner of new manufactures** (*Ccom* at 290). Thus, manner of manufacture, novelty, inventiveness and utility are now stated as distinct requirements of a patentable invention. The criterion of **manner of manufacture** requires a decision as to what, at the present time, properly falls within the scope of the patent system. In so far as **manufacture** suggests a **vendible product**, that is to be understood as including every result produced by a method or process where that result is an artificially created state of affairs that is of utility in practical affairs and thus of economic significance (*Ccom* at 291).

Examples of things that do not constitute patentable inventions include:

* a method of calculation or a process of mathematical operations, such as a way of solving a mathematical problem;
* business, commercial and financial schemes;
* schemes of operation; and
* printed sheets, cards, tickets or the like, which are mere records of information (*Ccom* at 292).

A distinction must be drawn between the discovery of laws or principles of nature, on the one hand, and the application of such laws or principles to produce a particular practical and useful result, on the other hand. The discovery of such laws or principles is not something that should secure a monopoly on all future practical applications of such laws or principles. Such a course would lead to endless difficulties and tend to prevent the rapid progress by which the existence of patent law has been marked (*Ccom* at 292).

A method involving the operation or control of a computer, such that it is programmed in a particular way to operate in accordance with the inventor’s method, may well be patentable, because more than mere information is involved. Rather, the method is involved in the program and embodied in the apparatus in physical form (*Ccom* at 292). Computer programs that have the effect of controlling computers to operate in a particular way, such as by producing the representation of a curve, where such programs are embodied in physical form, are properly patentable. An application of a law of nature or mathematical formula to a known structure or process may well be patentable (*Ccom* at 293).

For a method to be patentable, it must produce a product in which a new and useful effect may be observed. In the case of computer programs, it is necessary to look to the application of the program to produce a practical and useful result, so that more than mere information is involved. The method of a claimed invention will not be patentable if it does not produce an artificial state of affairs, in the sense of a concrete, tangible, physical or observable effect. Even if there is not a physically observable end result, in the sense of a tangible product, a claimed invention that is a method may nevertheless be patentable if it applies the method in a physical device. In such a case, an artificial state of affairs is produced in the physical device by the claimed method. Thus, a physical effect, in the sense of a concrete effect or phenomenon or manifestation or transformation, is required. It is sufficient if there is a component that was physically affected or a change in state or information in part of a machine. They can be regarded as physical effects. However, if the claimed invention is a mere scheme, an abstract idea or mere information, it will not be patentable as there is no physical consequence (*Grant v Commissioner of Patents* (2006) 154 FCR 62 at 70-71).

# THE PROCEEDING

On 27 January 2005, Mr Robert D Arnott filed patent application 2005213293 (**the Parent Application**). The Commissioner issued five examination reports in respect of the Parent Application in which the examiner maintained an objection that its claims were not for a manner of manufacture. Mr Arnott proposed amendments to the description and claims during the examination stage. On 17 December 2010, the Commissioner’s delegate concluded that claims 1 to 19 of the Parent Application were not for a manner of manufacture and so did not satisfy s 18(1)(a) of the Act. The Parent Application was therefore refused (**the First Decision**).

On 17 November 2010, the Commissioner recorded the assignment of the Parent Application to Research Affiliates. By notice of appeal of 7 January 2011, Research Affiliates appealed to the Federal Court from the First Decision.

On 27 October 2010, Mr Arnott filed a divisional patent application 2010236045 (**the Divisional Application**). Chapter 6A of the Act deals with divisional applications. Under s 79B, if a complete patent application for a patent is made, the applicant may make a further complete application for a patent for an invention disclosed in the specification filed in respect of the first application. Following assignment by Mr Arnott to Research Affiliates, the Divisional Application proceeded in the name of Research Affiliates. The Commissioner issued three examination reports during the examination stage in relation to the Divisional Application. Research Affiliates proposed amendments to the description and claims during the examination stage. By decision made on 5 December 2011, the Commissioner’s delegate concluded that claims 1 to 30 of the Divisional Application were not for a manner of manufacture and so did not comply with s 18(1)(a) of the Act. Accordingly, the Divisional Application was refused (**the Second Decision**). On 22 December 2011, Research Affiliates appealed to the Federal Court from the Second Decision.

By the appeals, Research Affiliates claims orders that the First Decision and the Second Decision be set aside and orders directing the Commissioner to accept the Parent Application and the Divisional Application pursuant to s 49 of the Act. The two appeals were heard together on the basis that evidence in one be evidence in the other. They raise the same question. The sole question for consideration by the Court is whether the invention as claimed in the claims of either or both of the Parent Application and the Divisional Application is a manner of manufacture within the meaning of s 6 of the Statute of Monopolies.

Before considering that question, it is necessary to say something about the claimed invention of the Parent Application and the Divisional Application. The appeals have been conducted on the basis that it is necessary for the Court to consider only claim 1 of the Divisional Application, in the context of the complete specification of the Divisional Application (**the Specification**).

# BACKGROUND TO THE CLAIMED INVENTION

Research Affiliates relied on an affidavit of 24 February 2012 sworn by Professor Erik Schlogl, who is Professor in Finance in the Faculty of Business of the University of Technology, Sydney. Despite the form of Professor Schlogl’s affidavit, it was read without objection, on the basis that it is evidence of the way in which the Specification would have been understood by the relevant addressee of the Specification as at February 2004, the priority date of the Divisional Application. I shall say something about the contents of the Specification, incorporating the explanations propounded by Professor Schlogl.

The title of the claimed invention of the Divisional Application is:

Valuation Indifferent Non-Capitalization Weighted Index and Portfolio

The Specification states that the claimed invention pertains generally to securities investing and, more specifically, to construction and use of passive portfolios and indexes.

**Securities** includes assets such as shares, stocks and bonds issued by corporations, government treasuries and other entities that are traded on exchanges, and derivatives traded directly between financial institutions or between investors and financial institutions. **Assets** includes securities but is a broader category, encompassing oil, minerals and agricultural products. **Index** refers to a set of data that is generated by identifying a particular selection of assets and calculating a weighting for each of the selected assets. **Portfolio** describes the actual investments made by an investor as a result of purchasing, selling and short selling assets. **Short selling** means borrowing an asset and selling that asset in the market. **Securities portfolio management** encompasses the buying, holding and selling of various securities and other assets over time.

Conventionally, there are three broad categories of securities portfolio management. They are active management, passive management, which is sometimes called indexing, and enhanced indexing. The claimed invention of the Specification is said to relate generally to the passive management and enhanced indexing management categories of portfolio management.

Under **active management**, securities are selected for a portfolio individually, based on economic, financial, credit or business analysis, or on technical trends of cyclical patterns. An analyst undertakes research and analysis of individual securities, the entities that offer those securities and the markets in which those entities operate, and makes investment decisions based on that research and analysis.

Under **passive management** or **indexing**, securities in a portfolio duplicate those that make up an index. The securities in the portfolio are weighted by relevant market capitalisation weighting or equal weighting. The securities purchased for inclusion in the portfolio reflect the securities that are represented in a particular index. The amount of each security that is purchased for inclusion in the portfolio affects the weighting of that security in the index. If the weighting given to a particular security in the index changes, a corresponding amount of the security is bought or sold to adjust the amount of that security held in the portfolio.

Under **enhanced indexing**, a portfolio’s characteristics, performance and holdings are substantially dominated by the characteristics, performance and holdings of an index, but with some active management departures from the index. It is a hybrid approach, which combines elements of the active management and the passive management approaches. The composition of such a portfolio in part reflects the composition of an index and in part reflects active decisions to buy, hold or sell particular securities, based on research and analysis of particular securities or of the market as a whole.

**A market** is a particular set or class of assets, such as shares or stocks in Australia or bonds in the United States of America. A **segment of a market** is a subset of assets with common characteristics. The subset might be securities issued by companies in a particular industry sector, such as the resources, technology or healthcare sectors. A **securities market index** is intended to reflect an entire market or a segment of a market. A portfolio subject to passive management may reflect the entire market or a segment of a market.

In some cases, every security in an index will be held in a portfolio subject to passive management. In other cases, statistical modelling is used to create a portfolio that duplicates the profile, risk characteristics, performance characteristics and securities weighting of a particular index, without actually including every security in the index. That is to say, changes in the value of the portfolio over time will correlate to changes in value of the index, even though the portfolio does not include every security in the index. Statistical modelling is used to identify a subset of securities in the index for inclusion in the portfolio and to calculate the amount of each security to be purchased.

Once an index has been created, it is possible to assign a value to the index. For example, the index might be assigned a nominal value of 100 at the time it is created. That value is adjusted to reflect changes over time in the value of the securities included in the index, taking into account their respective weightings. The fluctuations in the value of the index may provide a useful shorthand guide to the performance of the market or market segment that the index is intended to represent. The weighting given to a particular security in an index will determine the degree to which changes in the value of that security will influence the overall value of the index. A change in the value of a heavily weighted security will have a larger impact on the index value than a corresponding change in the value of a security with a lower weighting.

In most cases, indexes will include each security in the proportion that the market capitalisation of the security bears to the total market capitalisation of all the securities included in the index. The market capitalisation of a security is calculated by multiplying its share price by the total number of that security in issue. Thus, market capitalisation represents the total market value of the entity issuing the security. Market capitalisation can be used as the basis for calculating weightings for the securities represented in a securities market index. Weightings based on market capitalisation are calculated by adding together the market capitalisations of the securities in an index, to give a total market capitalisation for the index. A weighting for each security is calculated by dividing the market capitalisation of the security by the total market capitalisations for the index.

Indexes are generally all-inclusive of the securities within the defined market or market segment. In most cases, indexes may include each security in the proportion that its market capitalisation bears to the total market capitalisation of all the included securities. Conventionally, portfolios subject to passive management are built on the basis of an index weighted according to market capitalisation, share price or equality.

Advantages of passive management include a low trading cost of maintaining the portfolio, as there is turnover only when an index is reconstituted, low management cost of the portfolio, as it requires no analysis of individual securities, and the absence of chance of suffering loss, relative to the market or market segment reflected in the index, because of misjudgements in the selection of individual securities. The advantages of using market capitalisation weighting as the basis for passive management of a portfolio include that the index, and thus the portfolio built on it, remains continually in balance as market prices for the included securities change. In addition, the performance of the portfolio reflects the performance of the market or market segment on which the index is based.

The disadvantage of market capitalisation weighted passive management is that undervalued securities will be underweighted in the index and in the portfolio based on the index. At the same time, any overvalued securities will also be overweighted. Further, a portfolio based on market capitalisation weighting follows every market, or market segment, variation. Selection of securities for inclusion in a portfolio will not be based on criteria that reflect a better opportunity for appreciation from that of the market or market segment overall.

# THE CLAIMED INVENTION OF THE SPECIFICATION

The Specification contains a summary of the claimed invention. The summary begins with a description of six aspects of the claimed invention. The first aspect provides a method of constructing data indicative of a non-capitalisation weighted portfolio of assets. The second aspect provides a system for constructing a non-capitalisation weighted portfolio of assets. The third aspect provides a computer-implemented non-capitalisation weighted portfolio of assets construction system. The fourth aspect provides a machine readable medium that provides instructions that, when executed by a computing platform, cause the computing platform to perform operations comprising a method of constructing a non-capitalisation weighted portfolio of assets. The fifth aspect provides a computer-implemented method for generating an index. The sixth aspect provides a computer system.

An exemplary embodiment of the claimed invention is said to be directed to a new method, system and computer program product for passive investing that is based on indexes that are built with metrics other than metrics consisting of market capitalisation weighting, share price weighting or equal weighting. Among the possible metrics are various financial data of the entity issuing the securities, including but not limited to book value, sales, revenue, earnings, earnings per share, income, income growth rate, dividends, dividends per share, earnings before interest, tax, depreciation and amortisation, etc. The Specification describes another exemplary embodiment in which other non-financial and non-market capitalisation metrics can be used as a basis for compiling an index, such as, but not limited to, an index of companies with chief executives having graduated from a particular university.

The Specification states that a common element included in an exemplary embodiment of the claimed invention, which is said to be entirely missing from conventionally available forms of index construction, is that the indexes of the claimed invention are “valuation-indifferent”. That is to say, conventional indexes do not take account of classical valuation ratios, which causes a conventional index to create a natural tendency to overweight the overvalued securities and underweight the undervalued securities, in the index, and in portfolios based on the index. The Specification states that the use of those non-market capitalisation metrics allows the construction of indexes and resulting portfolios subject to passive management that better reflect the economic scale or long-term growth potential of the individual securities than do conventional capitalisation weighting, share price weighting or equal weighting.

The Specification then describes an exemplary embodiment of the claimed invention that sets forth a system, method and computer program product for constructing a non-capitalisation weighted portfolio of assets in which the method may include the following three steps:

* first, gathering data about a plurality of assets;
* secondly, selecting a plurality of assets to create an index of assets; and
* thirdly, weighting each of the plurality of assets selected in the index based on an objective measure of scale of each of the plurality of assets.

The weighting may include weighting at least one of the plurality of assets and weighting that is not based on market capitalisation, equal weighting or share price weighting.

That is to say, from the set of assets about which data has been gathered in the first step, a subset of assets is chosen for inclusion in the index in the second step. In implementing the second step, it would be necessary to choose a basis for selecting assets by means of some selection criteria. In the third step, the assets in the subset are weighted, based on one or more objective measures of scale, or metrics, other than market capitalisation, share price or equality. The metrics might be financial, such as revenue, sales, cash flow and book value, demographic, such as number of employees, or geographic. In implementing the third step, it will be necessary to choose which one or more of those objective measures of scale, or metrics, is to be used. It will also be necessary to decide on a weighting function, being a mathematical formula for calculating a weighting, based on the chosen objective measures of scale, or metrics. A wide variety of mathematical functions could be used to calculate the weightings in the third step. Logarithmic or other types of mathematical functions could be used to calculate weightings.

The outcome of performing those three steps would be an index, but not a portfolio. The construction of an actual portfolio necessarily includes the further step of purchasing the assets to be held in the portfolio, based on the index.

The Specification states that, in another exemplary embodiment, a non-capitalisation weighted portfolio of assets construction system may include the processor adapted to carry out the three steps described above. Another exemplary embodiment of the claimed invention may be implemented on a computing device, processor, computer or communications device. In a further exemplary embodiment, the computer may comprise one or more central processing units or processors, which may be coupled to a bus.

A **processor** is a piece of computer hardware that executes a computer program. A **bus** is hardware responsible for transmitting data between two different parts of a computer system. For example, a bus may be used to transmit data from the computer’s memory to the central processing unit (**CPU**) for processing. The computer may be coupled to an input/output subsystem, such as a network interface card, or a modem for access to a network. **Network interface cards** and **modems** are devices used to link a computer to a network and permit the transmission of data in both directions between the computer and the network. The computer may store data in a main memory by means of a bus, or in a secondary memory directly. Secondary memory may include a magnetic storage device, such as a hard disk, or optical storage device, such as a compact disc. The Specification includes drawings describing such a collection of computing devices.

Claim 1 of the Divisional Application reads as follows:

A computer-implemented method for generating an index, the method including steps of:

(a) accessing data relating to a plurality of assets;

(b) processing the data thereby to identify a selection of the assets for

inclusion in the index based on an objective measure of scale other

than share price, market capitalization and any combination thereof;

(c) accessing a weighting function configured to weight the selected

assets;

(d) applying the weighting function, thereby to assign to each of the

selected assets a respective weighting, wherein the weighting:

(i) is based on an objective measure of scale other than share

price, market capitalization and any combination thereof; and

(ii) is not based on market capitalization weighting, equal

weighting, share price weighting and any combination thereof,

thereby to generate the index.

# AN EMBODIMENT OF THE CLAIMED INVENTION

Research Affiliates generates indexes in accordance with a method of the claimed invention. The particular method involves selecting and weighting securities based on four fundamental measures of company size, namely, sales, cash flow, book value and dividends (**the four measures of company size**). The Colonial eRAFI AU Large Index (**the Colonial Index**) is an example of an index said to have been generated by Research Affiliates in accordance with the method of the claimed invention. The Colonial Index was created by adopting the following steps:

* Data relating to entities that offer securities listed on the Australian Securities Exchange (**the ASX**) was imported, by a computer program, from a database into the hard drive of a computer terminal within the computer network of Research Affiliates.
* The imported data was processed by the computer program in order to calculate, among other things, the four measures of company size, together with a fundamental score for each security.
* The new data set thus produced was exported into a new Microsoft Excel file. The new file contained data relating to 493 entities listed on the ASX. Further manipulations were performed to the data in that Excel file.
* In the Excel file, the top 250 securities were selected by reference to the fundamental score for each security and the weighting of each of the securities within the top 250 was calculated.
* A computer file was then created, which contained data relating to the identification of the selected top 250 securities and the final weightings of each of those securities. That file constituted the Colonial Index.

Research Affiliates grants licences to use the Colonial Index to owners of assets and to fund managers. In particular, Research Affiliates granted a licence to use the Colonial Index to Colonial First State Investment Limited (**Colonial First State**). Colonial First State offers investment in funds that are subject to passive management by reference to the Colonial Index. The Colonial Index was delivered by Research Affiliates to Colonial First State in the form of a computer-generated file. Colonial First State uses the Colonial Index to create and manage its investment funds. Colonial First State pays a significant licence fee to Research Affiliates for the right to use the Colonial Index.

# RESEARCH AFFILIATES’ COMPLAINTS ABOUT THE DECISIONS

The Commissioner’s delegate observed that the disclosure in the Parent Application should be considered as a whole and that care should be taken not to allow the form of words used in a claim to cloud the real issue of manner of manufacture. Research Affiliates contends that the delegate ignored the wording of the claims of the Specification for the purpose of identifying the invention. It says that the delegate relied on the disclosure of the Specification to dictate what the delegate characterised as the real nature of the invention.

The delegate found that, while implemented in a computer system, the method of the claimed invention was wholly characterised by constructing data from weighting assets based on using various received data sets. That is, the delegate said, the claim as a whole defines the steps to generate the data to support the passive investment scheme. Research Affiliates says that that indicates that the delegate considered the claimed invention of the Specification to be an investment scheme and, accordingly, it was unlikely to be a manner of manufacture. It contends that the body of the Specification discloses a computer-implemented series of steps that, when carried out, generates an index. It says that that index is a physical, computer-generated file. The delegate, on the other hand, it says, characterised the claimed invention as merely a scheme or an investment scheme. That characterisation, it says, ignores the disclosures as to the components of the computer apparatus that perform the method, the manner in which the steps of the computer-implemented method create physical effects in the apparatus and, in particular, the creation of the index, which is the product of the method.

Research Affiliates says that the delegate’s approach may suggest that the question of manner of manufacture is determined by reference to the contribution contained in the Specification, rather than the invention as defined by the language of the claims. It says that that approach was wrong, in so far as the delegate proceeded from a characterisation of the contribution of the invention contained in the body of the Specification, rather than the claims. While such considerations may be applicable for the purposes of inventive step or novelty, it is not correct to embark upon an enquiry as to the essence of the invention when considering the question of patentable subject matter. Rather, any claim to a computer-implemented method or a program on a computer-readable medium constitutes patentable subject matter.

Next, Research Affiliates draws attention to the delegate’s characterisation of claim 1 as defining “the steps to generate the data to support the passive investment scheme”. That, it says, appears to acknowledge that the claimed invention is not itself an investment scheme. Rather, the product of the method, namely, the index, supports the passive investment scheme. The delegate accepted that the derivation or manipulation of data in the way defined in the claims had a physical effect and that, as claimed, processing occurs or there is construction of data. Such a finding, Research Affiliates says, is wholly inconsistent with the invention being a mere investment scheme.

Research Affiliates contends that it is incorrect to say, as the delegate appears to say, that a method cannot be a manner of manufacture if the product of the method is characterised as “supporting” an investment scheme. It says that the fact that a method has an end product, such as a computer-generated index, tends to confirm that the method is a manner of manufacture. The method is not itself a mere scheme. Rather, it is a process for producing a product, or artificially created state of affairs. Further, the utility of the index, in the context, for example, of passive management, confirms that the product of the method meets the criterion of utility in the field of economic endeavour. Creating an investment portfolio, Research Affiliates asserts, is a paradigm case of economic endeavour.

Next, Research Affiliates asserts that, in considering the question of the output produced by the claimed method, the delegate applied a number of erroneous tests. Thus, the delegate accepted that the method produces a physical effect, but then proceeded to consider what kinds of physical effects may or may not give rise to a manner of manufacture. A test applied by the delegate was to require that there be some material advantage or mechanical effect in the arrangement of information. That, Research Affiliates contends, is not an approach authorised by the principles outlined above. The requirement is that there be some advantage that is material, in the sense that the process belongs to a useful art, as distinct from a fine art, and that its value to the country is in the field of economic endeavour.

Research Affiliates says that the “arrangement of information” requirement proposed by the delegate is inconsistent with the legal principles summarised above. It says that to introduce a requirement that there be a material advantage or mechanical effect in the arrangement of information is also inconsistent with those principles.

# MANNER OF MANUFACTURE

The relevant enquiry, according to Research Affiliates, is whether the claimed method results in an artificially created state of affairs, which is the first requirement. The second requirement is that that state of affairs be in the field of economic endeavour. It points to a number of matters in relation to those two requirements.

In relation to the first requirement, Research Affiliates says that claim 1 involves the creation of an index by a method involving a number of steps. The first step involves accessing data relating to a plurality of assets. That involves retrieving the data from, for example, a database stored on a secondary memory device, such as a hard disk, or receiving it from an external source over a communications network. The second step involves processing the data to select the assets for inclusion in the index, based on specified measures of scale or metrics. That involves applying algorithms to the data collected in the first step, resulting in a new set of data relating to the assets that have been selected for inclusion in the index. In the third step of the claimed method, the computer’s processor manipulates the data generated in the second step to calculate a weighting for each of the selected assets.

The result of performing the steps of the method is the generation of an index, the form of which is a computer-generated data set comprising the selected assets and their associated weightings. The index is initially stored in the computer’s RAM, but can also be saved onto and stored in a secondary memory device, such as a CD-ROM or USB flash drive. It can also be transmitted over a communications network to another computer system.

Thus, Research Affiliates asserts, the claimed method results in an artificially created state of affairs. The index generated by the claimed method, Research Affiliates says, is the same kind of artificially created state of affairs as the representation of a curve, or the representation of Chinese language characters, or the writing of information to a smart card produced by a computer.

In relation to the second requirement, Research Affiliates says that it is plain that the index produced by the method of the claimed invention has utility in the field of economic endeavour. Specifically, it can be used to generate and maintain a portfolio of assets or be used in benchmarking an investment portfolio manager. Research Affiliates points, by way of example, to the Colonial Index, which is licensed to Colonial First State for a significant fee. Accordingly, it says, the index produced by the method of the claimed invention is of significance in the field of economic endeavour, in that it is of value and utility.

A mere scheme, abstract idea, or mere information, is not, of itself, patentable. Some physical effect is required. Thus, where the representation of a curve, or the representation of Chinese language characters, or the writing of information to a smart card, is produced by a computer, there is a component physically affected or a change in state in a part of a machine, which makes the invention patentable.

Research Affiliates accepts that the only physical result generated by the method of the claimed invention is a computer file containing the index. That is because the method is implemented by means of a computer. Research Affiliates places significance on the fact that the result of the claimed method is the generation of the index by a computer.

However, the index generated is nothing more than a set of data. The index is simply information: it is a set of numbers. It is no more a manner of manufacture than a bank balance, whether represented as data in a bank’s computer, written on a piece of paper or kept in a person’s memory. While it is true that the index may be stored in the computer’s RAM, or on a memory device, or can be transmitted, that can be said of any data generated by a computer. If that were sufficient to satisfy the requirement of an artificially created state of affairs, any computer-implemented scheme would be patentable, merely by reason of the fact that it happens to be implemented by a computer.

While the Specification appears to be intended to create the impression of detailed computer implementation, the Specification says almost nothing about how that is to be done. The reliance placed on the Colonial Index embodiment is a good example of what is not in the Specification. The discussion in the Specification provides no substantive detail regarding the implementation of the claimed method. The upshot of the discussion is merely that the method is implemented by a computer, but there is no disclosure of how that is to be done.

Claim 1 is for a computer-implemented method for generating an index. The method includes several steps. First, data relating to a plurality of assets is accessed. Secondly, that data is processed, in order to select assets for inclusion in the index. The selection is to be based on an objective measure of scale, other than share price, market capitalisation or any combination thereof. The third step is to access a function that weights the assets selected for inclusion in the index. The final step is to apply the weighting function in order to assign a weighting to each of the selected assets. The weighting is based on any objective measure of scale, other than market capitalisation, equality, share price or any combination of those measures. Thus, the only criterion for the selection of assets for the index, and for the weighting of the assets in the index, is a negative one: that neither the selection nor the weighting is to be based on market capitalisation, equality or share price.

The method of the claimed invention does not involve a specific effect being generated by the computer. The mere use of a computer necessarily carries with it the writing of information into the computer’s memory. There is a stark contrast between a computer-generated curve, or a representation of Chinese characters, or the writing of particular information on a smart card, on the one hand, and the quite unspecific index, on the other. There is no practical application in the method of the claimed invention for the improved use of computers. The effect of the implementation of the method is not to improve the operation of or effect of the use of the computer. There is nothing in the Specification or claim 1 that discloses how to produce the index. Thus, there is nothing in the Specification or claim 1 to indicate:

* how data is accessed in step 1;
* the nature of the processing undertaken in step 2 to identify the selection of assets;
* how the weighting function is accessed in step 3;
* how the relevant measure of scale is chosen in step 4; or
* how the weighting function is applied in step 4 to assign a weighting to each asset.

The case propounded by Research Affiliates depends upon the proposition that information of economic significance, once entered into or produced by means of a computer, becomes an economically valuable artificially created state of affairs, and thus patentable. That proposition must be rejected.

The implementation of the method of the claimed invention by means of a computer, at the level articulated in claim 1, is no more than the modern equivalent of writing down the index on pieces of paper. On the face of the Specification, there is no patentable invention in the fact that the claimed method is implemented by means of a computer. The Specification asserts a patentable invention, not in the use of the computer, but in the particular series of steps that give rise to the generation of the index. Those steps could readily have been carried out manually. The aspect of computer implementation is nothing more than the use of a computer for a purpose for which it is suitable. That does not confer patentability.

The enquiry into what constitutes a patentable invention is still evolving. It is not to be tied to particular notions of what was understood to be a manufacture at any particular point in time. However, while new developments in technology might be seen to widen the notion of what is patentable, the modern availability of computers as a standard means of implementing arithmetic or computational processes, which could have been implemented manually in the past, does not carry with it any broadening of the concept of a patentable invention.

# CONCLUSION

Both appeals should be dismissed. Research Affiliates should pay the Commissioner’s costs of both appeals.

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| I certify that the preceding seventy four (74) numbered paragraphs are a true copy of the Reasons for Judgment herein of the Honourable Justice Emmett. |

Associate:

Dated: 13 February 2013