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WISDOM TREE INVESTMENTS, INC.; WISDOM TREE TRUST; WISDOM TREE ASSET MANAGEMENT, INC.; WISDOM TREE RETIREMENT SERVICES, INC.; MELLON CAPITAL MANAGEMENT CORP.; and ALPS DISTRIBUTORS, INC.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SOUTHERN DIVISION

Research Affiliates, LLC,

Plaintiff,

v.

Wisdom Tree Investments, Inc., Wisdom Tree Trust, Wisdom Tree Asset Management, Inc., Wisdom Tree Retirement Services, Inc., Mellon Capital Management Corp., and ALPS Distributors, Inc.,

Defendants.

Case No. SACV11-01846 DOC (ANx)

SECOND AMENDED ANSWER, AFFIRMATIVE DEFENSES AND COUNTERCLAIMS

Judge: Hon. David O. Carter
Complaint Filed: December 1, 2011

DEMAND FOR JURY TRIAL

ANSWER

Defendants WisdomTree Investments, Inc., WisdomTree Trust, WisdomTree Asset Management, Inc., WisdomTree Retirement Services, Inc., Mellon Capital Management Corp., and ALPS Distributors, Inc. (collectively "Defendants") hereby answer and otherwise respond to the numbered paragraphs of the Complaint for Patent Infringement ("Complaint") filed by Plaintiff Research Affiliates, LLC ("Plaintiff" or "RA"), as follows:

NATURE OF THE SUIT

1. In response to Paragraph 1 of the Complaint, Defendants admit that Plaintiff purports to allege a cause of action for patent infringement arising under Title 35 of the United States Code.

2. Defendants lack sufficient knowledge or information to form a belief as to the truth of the allegations in Paragraph 2 of the Complaint and, therefore, deny each allegation.

3. In response to Paragraph 3 of the Complaint, WisdomTree Investments, Inc. ("WT Investments") admits that it is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017.

4. WisdomTree Trust ("WT Trust") admits the allegations contained in Paragraph 4, except to state that the Chief Executive Officer of WT Investments currently serves as a Trustee and President of WT Trust; and the Chief Financial Officer of WT Investments currently serves as Treasurer of WT Trust.

5. In response to Paragraph 5 of the Complaint, WisdomTree Asset Management, Inc. ("WT Asset Management") admits that it is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017. WT Asset Management admits that it is a wholly-owned subsidiary of WT Investments

that provides investment advisory services. Defendants deny the remaining allegations in Paragraph 5.

6. WisdomTree Retirement Services, Inc. ("WT Retirement Services") admits that it is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017 and that WT Retirement Services is a wholly-owned subsidiary of WT Investments. Defendants deny the remaining allegations in Paragraph 6.

7. Mellon Capital Management Corp. ("MCM") admits that it is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 50 Fremont Street, Suite 3900, San Francisco, California 94105. MCM admits that it has contracts with WT Asset Management to provide certain services. Defendants deny the remaining allegations of Paragraph 7.

8. ALPS Distributors Inc. ("ALPS") admits that it is a corporation organized and existing under the laws of the State of Colorado, with a place of business at 1290 Broadway, Suite 1100, Denver, Colorado 80203. Defendant WT Investments admits that ALPS is a distributor of WT ETFs.

JURISDICTION AND VENUE

9. Defendants admit that this Court has jurisdiction over the subject matter of the Complaint.

10. Paragraph 10 states legal conclusions as to which no responsive pleading is required, and to the extent any responsive pleading is required, Defendants deny the allegations in Paragraph 10.

11. Paragraph 11 states legal conclusions as to which no responsive pleading is required, and to the extent any responsive pleading is required, Defendants deny the allegations in Paragraph 11.

THE PATENTS-IN-SUIT

12. Defendants admit that U.S. Patent No. 7,747,502 ("the '502 Patent") was issued on June 29, 2010 and is entitled "Using Accounting Data Based Indexing

to Create A Portfolio of Assets." Defendants are otherwise without knowledge or information sufficient to admit or deny the remaining allegations in Paragraph 12 and on that basis deny them.

13. Defendants admit that U.S. Patent No. 7,792,719 ("the '719 Patent") was issued on September 7, 2010 and is entitled "Valuation Indifferent Non-Capitalization Weighted Index and Portfolio." Defendants are otherwise without knowledge or information sufficient to admit or deny the remaining allegations in Paragraph 13 and on that basis deny them.

14. Defendants admit that U.S. Patent No. 8,005,740 ("the '740 Patent") was issued on August 23, 2011 and is entitled "Using Accounting Data Based Indexing to Create a Portfolio of Financial Objects." Defendants are otherwise without knowledge or information sufficient to admit or deny the remaining allegations in Paragraph 14 and on that basis deny them.

15. Defendants lack sufficient knowledge or information either to admit or deny the truth of the allegations regarding the ownership of the '502 Patent, '719 Patent, and '740 Patent (collectively, "Patents-in-Suit") and on that basis deny the allegations in Paragraph 15.

16. Defendants deny the allegations of Paragraph 16.

17. WT Investments was advised of the existence of a published version of the patent application corresponding to the '719 Patent and had knowledge of the existence of the Patents-in-Suit at different points after their issuance. Defendants deny the remaining allegations in Paragraph 17.

18. WT Investments received a letter from counsel for RA in September 2005 identifying a patent application published as U.S. Pub. No. 20050171884 ("the '884 Application"). That application evolved into the '719 Patent five years later with a different title and claims. Defendants deny the remaining allegations of Paragraph 18.

19. WT Investments admits that Mr. S. Craig Hemenway responded to the September 2005 letter with an October 7, 2005 letter on behalf of WT Investments. Defendants deny the remaining allegations in Paragraph 19.

20. WT Investments admits that Mr. Hemenway's October 7, 2005 letter did mention service copies of a Third Party Submission to the United States Patent and Trademark Office ("USPTO") that included prior art references material to the patentability of the '884 Application but apparently not disclosed by the applicant to the USPTO at the time of the letter. Defendants deny the remaining allegations in Paragraph 20.

21. WT Investments admits that Mr. Hemenway provided copies of the two Third Party Submissions regarding the application for the '719 Patent in an October 12, 2005 letter to RA. Defendants deny the remaining allegations of Paragraph 21.

22. WT Investments admits that Mr. Hemenway also submitted prior art during the prosecution of the application that led to the issuance of the '502 Patent. Defendants deny the remaining allegations of Paragraph 22.

23. Defendants deny the allegations of Paragraph 23.

24. Defendants lack sufficient knowledge or information either to admit or deny the truth of the allegations in Paragraph 24 of the Complaint and, therefore, deny those allegations.

25. Defendants lack sufficient knowledge or information either to admit or deny the truth of the allegations in Paragraph 25 of the Complaint and, therefore, deny those allegations.

26. WT Investments admits that Robert Arnott met in 2007 in New York with Mr. Michael Steinhardt, who is the current chairman of the Board of Directors of WT Investments. Defendants are without sufficient knowledge or information either to admit or deny the truth of the remaining allegations in Paragraph 26 and on that basis deny them.

27. WT Investments denies that Bruce Lavine attended or was aware of matters discussed at the purported meeting referenced in Paragraph 27 of the Complaint. Defendants lack sufficient knowledge or information either to admit or deny the truth of the remaining allegations in Paragraph 27 of the Complaint and, therefore, deny those allegations.

28. Defendants deny the allegations of Paragraph 28.

29. Defendants lack sufficient knowledge or information either to admit or deny the truth of the allegations in Paragraph 29 and, therefore, deny those allegations.

COUNT I – INFRINGEMENT OF THE '502 PATENT

(Against All Defendants)

30. Defendants incorporate by reference their responses to Paragraphs 1 through 29 of the Complaint, as if fully set forth herein.

31. Defendants deny each of the allegations of Paragraph 31.

32. Defendants deny each of the allegations in Paragraph 32.

33. Defendants deny each of the allegations in Paragraph 33.

34. Defendants deny each of the allegations in Paragraph 34.

35. Defendants admit that WT Trust issues certain ETFs that seek to track the WT Indexes. Defendants deny the remaining allegations in Paragraph 35.

36. Defendants deny each of the allegations in Paragraph 36.

37. Defendants deny each of the allegations in Paragraph 37.

38. Defendants deny each of the allegations in Paragraph 38.

39. Defendants deny each of the allegations in Paragraph 39.

40. Defendants deny each of the allegations in Paragraph 40.

41. Defendants deny each of the allegations in Paragraph 41.

42. Defendants deny each of the allegations in Paragraph 42.

43. Defendants deny each of the allegations in Paragraph 43.

COUNT II – INFRINGEMENT OF THE '719 PATENT

(Against WT Investments, WT Trust and WT Asset Management)

44. Defendants incorporate by reference their responses to Paragraphs 1 through 43 of the Complaint, as if fully set forth herein.

45. Defendants deny each of the allegations in Paragraph 45.

46. Defendants deny each of the allegations in Paragraph 46.

47. Defendants deny each of the allegations in Paragraph 47.

48. Defendants deny each of the allegations in Paragraph 48.

49. Defendants deny each of the allegations in Paragraph 49.

50. Defendants deny each of the allegations in Paragraph 50.

51. Defendants deny each of the allegations in Paragraph 51.

COUNT III – INFRINGEMENT OF THE '740 PATENT

(Against WT Investments, WT Trust and WT Asset Management)

52. Defendants incorporate by reference their responses to Paragraphs 1 through 51 of the Complaint, as if fully set forth herein.

53. Defendants deny each of the allegations in Paragraph 53.

54. Defendants deny each of the allegations in Paragraph 54

55. Defendants deny each of the allegations in Paragraph 55.

56. Defendants deny each of the allegations in Paragraph 56.

57. Defendants deny each of the allegations in Paragraph 57.

58. Defendants deny each of the allegations in Paragraph 58.

59. Defendants deny each of the allegations in Paragraph 59.

PRAYER FOR RELIEF

60. Defendants deny that RA is entitled to any judgment or relief, including but not limited to that requested in Paragraphs A through H, of the Prayer for Relief in the Complaint.

GENERAL DENIAL

61. Except as specifically admitted, Defendants deny each and every allegation contained in Plaintiff's Claims.

AFFIRMATIVE AND OTHER DEFENSES

62. In addition to the defenses described below, each Defendant expressly reserves the right to allege additional defenses as they become known through the course of discovery.

FIRST AFFIRMATIVE DEFENSE: NON-INFRINGEMENT

63. Plaintiff is not entitled to any relief against Defendants because Defendants do not infringe, and have not infringed, directly, by inducement, contributorily, or in any way, any valid and enforceable claim of the Patents-in-Suit.

SECOND AFFIRMATIVE DEFENSE: INVALIDITY

64. The Patents-in-Suit are invalid for failure to meet one or more of the conditions for patentability set forth in Title 35 of the U.S. Code, 35 U.S.C. §§ 100 et seq., including, without limitation, 35 U.S.C. §§ 101, 102, 103, 112, 119, and/or 120.

THIRD AFFIRMATIVE DEFENSE: UNENFORCEABILITY/ INEQUITABLE CONDUCT

65. The '502, '719 and '740 Patents (collectively, the "Patents-in-Suit") are unenforceable due to inequitable conduct. Applicants, including Robert Arnott, prosecution counsel Ralph Albrecht and Managing Director and Chief Legal and Compliance Officer Janine Nesbit, engaged in inequitable conduct during prosecution of the applications for the Patents-in-Suit in the USPTO. That inequitable conduct renders the Patents-in-Suit and each of its claims unenforceable.

The Patents-in-Suit are Unenforceable Due to Inequitable Conduct Based on the Failure to Disclose Material Prior Art to the USPTO

66. At least named inventor Robert Arnott, Research Affiliates' prosecuting attorney Ralph Albrecht and Managing Director and Chief Legal and

Compliance Officer Janine Nesbit engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 Patents (collectively, the "Patents-in-Suit") in the USPTO by intentionally failing to disclose at least:

a. the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index,

b. the work of David Morris using the FTSE Group ("FTSE") for the GWA Wealth-based Indexes,

c. Robert C. Jones work on the Goldman Sachs Earnings-Weighted Index, and

d. Bob Glickman's U.S. Patent Application No. 10/659,694 ("the '448 Glickman Application)

to the USPTO patent examiner during prosecution of the Patents-in-Suit and related applications. That inequitable conduct renders the Patents-in-Suit and each of their claims unenforceable.

Robert Arnott's and Ralph Albrecht's Failure to Disclose the iShares Dow Jones Select Dividend Index Fund and its Underlying Dow Jones U.S. Select Dividend Index to the USPTO

67. At least named inventor Robert Arnott and Research Affiliates' prosecuting attorney, Ralph Albrecht, engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 Patents in the USPTO by withholding the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index from the examiner during prosecution of the Patents-in-Suit. That inequitable conduct renders the Patents-in-Suit and each of their claims unenforceable.

68. But for Robert Arnott's and Ralph Albrecht's failure to disclose the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index to the USPTO, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims

1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

69. At least as early as October 30, 2003, Dow Jones publicly disclosed the Dow Jones Select Dividend Index. (Oct. 30, 2003 Press Release (hereinafter "DJSDI News")). The index included 50 stocks derived from the Dow Jones U.S. Total Market Index, a broad market benchmark index that represented approximately 95% of U.S. market capitalization. (*Id.*). The Dow Jones Select Dividend Index selected its 50 components based on dividend yield and other dividend-related fundamental factors such as historical dividend growth and dividend payout ratio. The DJSDI also weighted the 50 components of its index based on dividend per share. (Id.)

70. In addition to being the subject of publication in October 2003, this index was commercially launched in the United States by at least November 3, 2003, and therefore it is prior art to the Patents-in-Suit under at least 35 U.S.C. § 102(a). (*Id.*; *see also* iShares internet page located at http://us.ishares.com/product_info/fund/overview/DVY.htm (showing an inception date of 11/3/203); *Dow Jones Indexes: Dow Jones Select Dividend Index Summary*, Dow Jones & Company, Inc. (2003) (hereinafter "DJSDI Summary")).

71. On August 18, 2003, iShares Trust ("iShares") publicly filed a registration statement with the United States Securities and Exchange Commission ("SEC") that states the iShares Dow Jones Select Dividend Index Fund is based on, and corresponds to, the Dow Jones Select Dividend Index. (Aug. 18, 2003 Registration Statement, Amendment No. 25 (hereinafter "iShares RS")).

72. In addition to being the subject of publication in August 2003, the iShares Dow Jones Select Dividend Index Fund was commercially launched by Barclays Global Investors ("BGI") on November 7, 2003, and therefore is prior art to the Patents-in-Suit under at least 35 U.S.C. § 102(a). (Nov. 7, 2003 Press Release (hereinafter "iShares news")).

73. The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index are but for material under 35 U.S.C. § 102 and 103 for at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent. Moreover, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index in combination with other prior art renders at least the identified claims of the Patents-in-Suit obvious. Had the USPTO patent examiner considered the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index, the Patents-in-Suit would not have issued.

74. Moreover, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index are far more material to the Patents-in-Suit than the McIntyre Patent Application (U.S. Pat. App. No. 9/819,314) that was used by the patent examiner as the primary reference in evaluating Robert Arnott's patent applications. The McIntyre Patent Application discloses a conventional stock index **selected and weighted based on market capitalization**. The Arnott patents claim an index constructed **by specifically excluding** market capitalization and **instead using fundamental factors** . Thus, the prior art the patent examiner applied was barely relevant because its concept of using market capitalization was the opposite of Arnott's concept of avoiding using market capitalization. On the other hand, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose a stock index selected and weighted using measures of dividends —a fundamental factor—while excluding market capitalization. Plainly, the withheld iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index are highly material and noncumulative.

75. For example, Claim 1 of the '502 Patent claims a method of creating an index by selecting constituents of the index based upon at least one accounting data

other than price; weighting the constituents of the index based upon at least one accounting data other than price; and managing the index. ('502 Patent at 21:1-36).

76. The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose an "index of financial objects" constructed with a computer-implemented method meeting all the elements of claim 1 of the '502 Patent.

77. The method of claim 1of the '502 Patent creates, by at least one computer, an index of the financial objects. ('502 Patent at 21:5-6). The iShares Dow Jones Select Dividend Index Fund "seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Dow Jones Select Dividend Index, an index compiled by Dow Jones & Company (the 'Index Provider')." (iShares RS at p. ii (emphasis added)). The Dow Jones Select Dividend Index "employs clear, unbiased and systematic methodologies that are fully integrated" within the index. (DJSDI News (emphasis added)).

78. On information and belief, the Dow Jones Select Dividend Index was created and managed by using at least one computer or processor. Further, Research Affiliates admitted during prosecution of App. No. 10/159,610 "that computers and processing systems were well known in the art in relation to construction and management of a financial index or investment instruments…" (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)). Thus, in the unlikely event the Dow Jones Select Dividend Index was found not to be created with a computer, it would have been obvious to create the index "by at least one computer" as claimed.

79. In the method of claim 1 of the '502 Patent the index is created by "selecting, by at least one computer, financial objects as constituents of the index based upon at least one accounting data regarding entities issuing the financial objects rather than price of the financial objects." ('502 Patent at 21:7-10). The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select

Dividend Index disclose such a selection: "To be eligible for inclusion in the [Dow Jones Select Dividend] index, a component must have a positive historical five-year dividend per share growth, an average five-year dividend payout percentage rate less than or equal to 60% and an annual average daily dollar trading volume greater than $1.5 million. Components that pass this criteria are then ranked by dividend yield, and the top 50 components of the Dow Jones U.S. Total Market Index are **selected** for the Dow Jones Select Dividend Index." (DJSDI News (emphasis added)).

80. In the method of claim 1 of the '502 Patent the selection criteria of constituent financial objects must include at least one of several accounting data, including "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects." ('502 Patent at 21:11-16). The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a selection criteria: "To be eligible for inclusion in the [Dow Jones Select Dividend] index, a component must have a positive historical five-year dividend per share growth, an average five-year dividend payout percentage rate less than or equal to 60% and an annual average daily dollar trading volume greater than $1.5 million. Components that pass this criteria are then ranked by dividend yield, and the top 50 components of the Dow Jones U.S. Total Market Index are selected for the Dow Jones Select Dividend Index." (DJSDI News).

81. In addition to "selecting," the index is created in the method of claim 1 of the '502 Patent by "weighting, by the at least one computer, the constituents of the index based upon at least one accounting data regarding the entities issuing the financial objects rather than price of the financial objects, to obtain constituent weightings of the constituents of the index." ('502 Patent at 21:17-22). The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a weighting. (iShares RS at p. 5 ("The stocks

included in the Index are weighted by dividend per share")). The Dow Jones publicly disclosed that "Each company's weight in the Dow Jones Select Dividend Index is based on the amount of its indicated dividend. The indicated annual dividends for all components are totaled, and each component's weight is equal to its dividend contribution." (DJSDI News).

82. Like the selecting criteria, in the method of claim 1 of the '502 Patent, the weighting criteria of constituent financial objects must include at least one of several accounting data, including "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects." ('502 Patent at 21:22-26). The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such weighting criteria. "The Dow Jones Select Dividend Index invests in 50 of the highest dividend-yielding companies in the Dow Jones U.S. Total Market Index (excluding REITS) that have a proven track record for consistent dividend payout, based on the following criteria: they must have a positive historical five-year dividend-per-share growth rate, a five-year average dividend payout percentage rate less than or equal to 60%, and annual average daily dollar trading volume greater than $1.5 million. The index is rebalanced once a year and a company's weight is based on its indicated annual dividend." (iShares News).

83. The method of claim 1 of the '502 Patent also includes a managing step providing for "managing, by the at least one computer, the index, and managing at least one portfolio of financial objects based on the index." ('502 Patent at 21:28-30). It was well known that Barclays managed the iShares Dow Jones Select Dividend Index Fund: "As investment advisor, [Barclays Global Fund Advisor ("BGFA")] has overall responsibility for the general management and administration of the Trust. BGFA provides an investment program for the [iShares Dow Jones Select Dividend Index] Fund and manages the investment of its assets.

BGFA uses teams of portfolio managers, investment strategists and other investment specialists." (iShares RS at p. 7). Likewise, the index itself was managed: "The Dow Jones Select Dividend Index will be reviewed on an annual basis in December." (DJSDI News).

84. The managing step of claim 1 of the '502 Patent also includes "altering, by the at least one computer, the relative weightings of the financial objects within said at least one portfolio of financial objects based on the index as the at least one accounting data concerning the entities of the financial objects changes or the constituents of the index change over time" ('502 Patent at 21:31-36), which is also disclosed by the withheld prior art. For example, "[t]he Index is reconstituted annually. The Fund uses a Replication strategy to try to track the Index." (iShares RS at p. 5). "The [Dow Jones Select Dividend] index includes 50 stocks, weighted by their indicated annual dividends. Components must fall below 100 in the rankings to be removed from the index during the annual review. Changes are made in between reviews due to corporate actions or when a company announces that it will eliminate its dividend." (DJSDI Summary, at p. 1). On information and belief, the iShares Dow Jones Select Dividend Index Fund was rebalanced or re-weighted by using at least one computer or processor.

85. Any differences between the asserted claims of the '502 Patent and the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index discloses each of the limitations of claim 1 and claims 2-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index were therefore but-for material prior art.

86. The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index also disclose "a method of constructing an index of assets" meeting all the elements of claim 1 of the '719 Patent.

87. The method of claim 1 of the '719 Patent constructs an index by first "**accessing** by the at least one analysis host processor of one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E)." ('719 Patent at 10:47-51). Second, the method of claim 1 of the '719 Patent constructs an index by "**receiving** by the at least one analysis host processor at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of said entities (E) associated with said corresponding assets (A)." ('719 Patent at 10:53-56). Third, the method of claim 1 of the '719 Patent constructs the index by "**retrieving** by the at least one analysis host processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A)." ('719 Patent at 10:57-59). On information and belief, the Dow Jones Select Dividend Index was created and/or managed by accessing a database and receiving/retrieving data. Also, as Applicant has admitted that the use of computers for construction and management of indices or funds was well known in the art (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)), it necessarily follows that the "accessing," "receiving," "retrieving," and "storing" of related data/information steps recited in claim 1 are also firmly in the prior art because these are all required computing operations.

88. Construction of the index claimed in method claim 1 of the '719 Patent also includes a "selecting" step: "selecting by the at least one analysis host processor a selection from said plurality of said assets (A) and said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets

(I)." ('719 Patent at 10:60-64). As discussed above for the '502 Patent, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a selection: "To be eligible for inclusion in the [Dow Jones Select Dividend] index, a component must have a positive historical five-year dividend per share growth, an average five-year dividend payout percentage rate less than or equal to 60% and an annual average daily dollar trading volume greater than $1.5 million. Components that pass this criteria are then ranked by dividend yield, and the top 50 components of the Dow Jones U.S. Total Market Index are selected for the Dow Jones Select Dividend Index." (DJSDI News).

89. The "selecting" step of method claim 1of the '719 Patent further comprises:

> "selecting by the at least one analysis host processor said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective measure of scale (O) associated with each of said entities, . . . wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of: a demographic measure of a said entity (E) associated with said asset (A); a financial metric of a said entity (E) associated with said asset (A); a metric from information disclosures of a publicly traded entity; or a metric from information about a said entity (E) associated with said asset (A)."

('719 Patent at 10:65-11:20). As discussed above, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a selection: "To be eligible for inclusion in the [Dow Jones Select Dividend] index, a component must have a positive historical five-year dividend per share growth, an average five-year dividend payout percentage rate less than or equal to

60% and an annual average daily dollar trading volume greater than $1.5 million. Components that pass this criteria are then ranked by dividend yield, and the top 50 components of the Dow Jones U.S. Total Market Index are selected for the Dow Jones Select Dividend Index." (DJSDI News). Thus, in selecting high dividend-yielding companies for the Dow Jones Select Dividend Index, the various dividend data constitute "a financial metric of a said entity (E) associated with said asset (A)" and therefore "a measure of size (SZ)," as claimed.

90. Furthermore, the "selecting" step of method claim 1 comprises "ranking by the at least one analysis host processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E) and selecting by the at least one analysis host processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking." ('719 Patent at 11:21-29). As discussed above, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a ranking: "Components that pass this criteria are then ranked by dividend yield, and the top 50 components of the Dow Jones U.S. Total Market Index are selected for the Dow Jones Select Dividend Index." (DJSDI News).

91. Finally, construction of the index claimed in the method claim 1 of the '719 Patent includes a "calculating" step:

> **"calculating** by the at least one analysis host processor proportional **weights** for the index of assets to be objective measure of scale weights (OW) . . . wherein said calculating comprises: (i) adding by the at least one analysis host processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and (ii) determining by the at least one analysis host processor a relative size

> of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I), wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of: a demographic measure of a said entity (E) associated with said constituent index asset (IA); a financial metric of a said entity (E) associated with said constituent index asset (IA); a metric from information disclosures of a publicly traded entity; or a metric from information about a said entity (E) associated with said constituent index asset (IA)."

('719 Patent at 11:30-65). As discussed above, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a step. (iShares RS at p. 5 ("The stocks included in the Index are weighted by dividend per share")). The Dow Jones publicly disclosed that "[e]ach company's weight in the Dow Jones Select Dividend Index is based on the amount of its indicated dividend. The indicated annual dividends for all components are totaled, and each component's weight is equal to its dividend contribution." (DJSDI News). Thus, "[e]ach company's weight in the Dow Jones Select Dividend Index is based on the amount of its indicated dividend. The indicated annual dividends for all components are totaled, and each component's weight is equal to its dividend contribution." (DJSDI News).

92. Any differences between the asserted claims of the '719 Patent and the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index discloses each of the limitations of claim 1 and claims 34-36of the '719 Patent, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index were therefore but-for material prior art.

93. The iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index also disclose "a computer-implemented method for constructing data indicative of a financial object index" meeting all the elements of claim 1 of the '740 Patent.

94. The method of claim 1of the '740 Patent "**construct[s]**, by at least one computer processor, data indicative of the financial object index comprising selecting . . . data indicative of constituent financial objects of the financial object index based upon at least one accounting data . . . said at least one accounting data regarding at least one entity relating to each of said financial objects, the at least one entity comprising at least one of a region, a country, **a company**, or a sovereign associated with said each of said financial objects." ('740 Patent at 78:6-16). The iShares Dow Jones Select Dividend Index Fund "seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Dow Jones Select Dividend Index, an index compiled by Dow Jones & Company (the 'Index Provider')." (iShares RS at p. ii). Furthermore, "[t]he Dow Jones Select Dividend Index (DJSDI) measures the performance of high dividend-yielding **U.S. companies**. The Index is comprised of the 50 highest dividend-yielding companies (excluding REITs) included in the Dow Jones U.S. Total Market Index. Those companies have had a positive 5-year dividend growth rate and an

average 3-year dividend payout ratio of approximately 60% or less." (iShares RS, Statement of Additional Information, at p. 9 (emphasis added)).

95. In addition to "selecting," the index is constructed in the method of claim 1 of the '740 Patent by "**weighting**, by the at least one computer processor, data indicative of said constituent financial objects based upon at least one accounting data . . . said at least one accounting data regarding the at least one entity, to obtain data indicative of constituent weightings for each of said constituent financial objects." ('740 Patent at 17-23). As discussed above, the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index disclose such a weighting. (iShares RS at p. 5 ("The stocks included in the Index are **weighted** by dividend per share") (emphasis added)). The Dow Jones publicly disclosed that "[e]ach company's weight in the Dow Jones Select Dividend Index is based on the amount of its indicated dividend. The indicated annual dividends for all components are totaled, and **each component's weight is equal to its dividend contribution**." (DJSDI News (emphasis added)).

96. The method of claim 1 of the '740 Patent also includes a "storing" step whereby "storing, by the at least one computer processor, said data indicative of said constituent financial objects and said constituent weightings on at least one computer storage device." ('740 Patent at 78:24-27). On information and belief, the Dow Jones Select Dividend Index was constructed and/or managed by using at least one computer or processor, including for the purposes of storing said data on a computer storage device. Applicants repeatedly admitted during prosecution of Application Number 10/159,610 "that computers and processing systems were well known in the art in relation to construction and management of a financial index or investment instruments…" (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)). Thus, even if the Dow Jones Select Dividend Index were not found to be

constructed with a computer, it would have been obvious to construct the index and store data "by at least one computer" as claimed.

97. Claim 1 of the '740 patent also broadly recites that the "financial objects" . . . include one or more of the following:

> "a bond; a fixed income debt instrument; a debt instrument; an emerging market debt instrument; a high yield debt instrument; a corporate debt instrument; an investment grade debt instrument; a debenture; a bank loan; a convertible bond; a senior debt; a subordinated debt; a term loan; a government debt instrument; a government bond; a corporate bond; a high yield bond; an emerging market bond; a municipal bond debt instrument; a treasury bond debt instrument; a treasury bill debt instrument; a mortgage based debt instrument; a securitized debt instrument; a security; **a stock**; a commodity; a futures contract; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); a derivative; a negative weighting on any asset; an asset account; a separate account; a pooled trust; or a limited partnership.

('740 Patent at 78:32-79:1 (emphasis added)). It was well known that the iShares Dow Jones Select Dividend Index Fund and the Dow Jones Select Dividend Index were based on and comprised of stocks: "[t]he stocks included in the Index are weighted by dividend per share." (iShares RS, Statement of Additional Information, at p. 9), and "[t]he [iShares Dow Jones Select Dividend Index] fund is the only exchange traded fund (ETF) investing solely in dividend-yielding stocks." (iShare News).

98. Lastly, the method of claim 1 of the '740 Patent requires that at least one accounting data comprise at least one of "at least one financial metric of the at least one entity associated with each of said constituent financial objects; or at least one metric, level, rate, or expenditure amount from information disclosures of the at

least one entity." ('740 Patent at 79:1-6). In selecting high dividend-yielding companies for the Dow Jones Select Dividend Index, the various dividend data constitute "at least one financial metric of the at least one entity associated with each of said constituent financial objects," and such data are well known to be from "information disclosures" (e.g., SEC filings and press releases) of the companies.

99. Any differences between the asserted claims of the '740 Patent and the iShares Dow Jones Select Dividend Index Fund and the Dow Jones Select Dividend Index are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made.

100. Because the iShares Dow Jones Select Dividend Index Fund and the Dow Jones Select Dividend Index discloses each of the limitations of claim 1 and claims 6, 8, 10, 23-25 and 73 of the '740 Patent, the iShares Dow Jones Select Dividend Index Fund and the Dow Jones Select Dividend Index were therefore but-for material prior art.

101. The Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund are not cumulative of references cited during the prosecution of the applications leading to the Patents-in-Suit. The prosecution record of the Patents-in-Suit reflects no indication that the index and fund disclosed in the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund was considered by the patent examiner. As detailed herein, the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund are but for material under 35 U.S.C. §§ 102 and 103 for each of the asserted claims of the Patents-in-Suit. As the patent examiner allowed the Patents-in-Suit to issue, the examiner did not find any reference before him as material as the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund, and therefore, the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund are not cumulative of any of the references considered by the

patent examiner, including the examiner's primary reference (*i.e.*, the McIntyre Patent Application (U.S. Pat. App. No. 90/819,314)) as discussed above.

102. On October 4, 2005, an interested third party (WisdomTree Investments, Inc.) submitted a Third Party Submission Under 37 C.F.R. § 1.99 in the prosecution of the application that led to the '719 patent. (Oct. 4, 2005 Third Party Submission). That submission tried to disclose information about the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index to the USPTO. However, under USPTO practice, MPEP 1134.01, a third party does not have the right to have the USPTO consider any references submitted by a third party under 37 CFR § 1.99. That submission of the Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index, as evidenced by the face of the '719 patent, was never considered by the USPTO patent examiner.

103. On information and belief, Robert Arnott and Ralph Albrecht (the attorney responsible for prosecuting the applications that led to the Patents-in-Suit) each received a copy of the October 4, 2005 Third Party Submission along with various prior art references disclosing the Dow Jones Select Dividend Index and the iShares Select Dividend Index Fund.

104. Both Robert Arnott and Ralph Albrecht had a duty to disclose any material information cited in the Third Party Submission to the USPTO patent examiner in the form of an Information Disclosure Statement ("IDS"). (*See* MPEP 1134.01 ("Furthermore, an individual who has a duty to disclose under 37 CFR § 1.56 should submit any material information contained in a third-party submission to the Office in an IDS in compliance with 37 CFR §§ 1.97 and 1.98 to ensure such material information is properly disclosed to the examiner, if the examiner has not indicated that the reference has been considered.")).

105. Despite Robert Arnott's and Ralph Albrecht's knowledge of the material prior art cited in this Third Party Submission, neither Robert Arnott nor

Ralph Albrecht took any action to ensure that the USPTO patent examiner considered the information disclosed in that submission. Neither individual filed an IDS as required by the MPEP. Upon information and belief, neither ever informed the patent examiner that the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund were far more relevant than the McIntyre reference.

106. Independent of the October 4, 2005 Third Party Submission, Robert Arnott repeatedly acknowledged the importance of the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund to the investment community at the same time as the prosecution of the Patents-in-Suit. In fact, Mr. Arnott had knowledge of this prior art and its materiality before the Third Party Submission.

107. In the March/April 2005 issue of Financial Analysts Journal, Robert Arnott authored another article entitled "Fundamental Indexation," which again recognized the importance of the Dow Jones Select Dividend Index Fund: "We are not the first to explore weighting by fundamental factors, although none of these works came to our attention before our research was completed . . . Barclays Global Investors recently introduced a dividend weighted strategy." (R. Arnott, FINANCIAL ANALYSTS JOURNAL, *Fundamental Indexation* (Mar. / April 2005) at fn. 3). The Barclays Global Investors dividend-weighted product referenced in this publication was the iShares Dow Jones Select Dividend Index Fund.

108. In December of 2006, Robert Arnott authored an article for the Institutional Investor entitled "An Overwrought Orthodoxy" that states "[in 2003], Barclays Global Investors launched iShares Dow Jones select dividend index, an exchange-traded fund that reweights the S&P 900 on the basis of the total dividends paid by each company. **This ETF was the first dividend-weighted fund and remains the largest fundamentally reweighted strategy in the world**." (R.

Arnott, INSTITUTIONAL INVESTOR, *An Overwrought Orthodoxy* (Dec 2006) at 40 (emphasis added)).

109. Furthermore, in 2008, Mr. Arnott authored a book entitled "The Fundamental Index, A Better Way to Invest", where he states "[t]his exchange-traded fund [the Dow Jones Select Dividend Index] was the first dividend-weighted fund and remains the largest fundamentally reweighted strategy in the world…" (Arnott, THE FUNDAMENTAL INDEX (2008) at Chp. 6 fn. 7).

110. Despite Robert Arnott's repeated acknowledgements of the importance of the prior Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund in articles directed to the investment community, neither he nor his patent attorney, Mr. Albrecht, disclosed that knowledge to the USPTO patent examiner.

111. On the contrary, Mr. Arnott expressly told the patent examiner that he had never heard of index fund products that selected and weighted based on fundamental factors prior to his RAFI® product. For example, the sworn Declaration of Robert D. Arnott Under 37 C.F.R. § 1.132 ("Declaration") filed on or about May 26, 2009 states "I know of no product, other than those based on the RAFI® concept, in which stocks for a stock market index or index fund were selected and weighted using financial values exclusive of a material influence of share price of the underlying companies that issue the stocks." (Application No. 10/961,404, 5-26-2009 Amendment and Response to Final Office Action at Schedule A, ¶ 7).

112. This sworn statement is false because at the time Mr. Arnott had knowledge of at least the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund. (*See* Paragraphs 101-109).

113. This sworn statement is also false because at the time Mr. Arnott had knowledge of the 2003 article by Richard Evans and Paul Wood entitled "Fundamentally Profit-based Equity Indexation (2003). The article referenced the

SandsEnd Profit Based 100 US Index that was being commercialized by Counsel Trust. The Profit Based Index selected and weighted stocks based on profits, a fundamental factor.

114. Mr. Arnott had knowledge of the aforementioned article and the product commercialized by Paul Wood and Counsel Trust when he submitted his sworn Declaration.

115. Mr. Arnott made similar false statements in the other applications, *e.g.*, the '577, '502, and '740 Patent applications.

116. At least named inventor Robert Arnott and Research Affiliates' prosecuting attorney, Ralph Albrecht owed the USPTO a duty of candor and good faith in connection with the applications that led to the patents-in-suit.

117. On March 5, 2005, Robert Arnott executed a Combined Declaration for Patent Application and Power of Attorney in connection with the application for the '719 Patent ("the '719 Patent Inventors' Declaration"), in which he stated that he had reviewed and understood the contents of the specification, including the claims. By signing the '719 Patent Inventors' Declaration, Robert Arnott explicitly acknowledged his duty to disclose to the USPTO information that is material to the examination of the application for the '719 Patent in accordance with 37 C.F.R. § 1.56.

118. On November 17, 2006, Robert Arnott executed a Combined Declaration for Patent Application and Power of Attorney in connection with the application for the '502 Patent ("the '502 Patent Inventors' Declaration"), in which he stated that he had reviewed and understood the contents of the specification, including the claims. By signing the '502 Patent Inventors' Declaration, Robert Arnott explicitly acknowledged his duty to disclose to the USPTO information that is material to the examination of the application for the '502 Patent in accordance with 37 C.F.R. § 1.56.

119. On November 15, 2007, Robert Arnott executed a Combined Declaration for Patent Application and Power of Attorney in connection with the application for the '740 Patent ("the '740 Patent Inventors' Declaration"), in which he stated that he had reviewed and understood the contents of the specification, including the claims. By signing the '740 Patent Inventors' Declaration, Robert Arnott explicitly acknowledged his duty to disclose to the USPTO information that is material to the examination of the application for the '740 Patent in accordance with 37 C.F.R. § 1.56.

120. Robert Arnott was not unsophisticated about IP matters including the inventor's duty of disclosure to the USPTO. For example, on November 8, 2004, in an email to several individuals including Paul Wood, Robert Arnott demonstrated full appreciation of the duty of candor and good faith to the USPTO when he warned the inventor of a competing patent application: "[H]e has a *legal* obligation to note prior art (GSAM and Morris) in his patent applications…else the patent is likely to be voided on fraudulent misrepresentation grounds." (Exh. A, Nov. 8, 2004 email from Arnott). Robert Arnott was well aware of his duty to disclose prior art to the USPTO.

121. By prosecuting and ultimately obtaining allowance of claims directed to methods of selecting and weighting assets on factors other than price to create an index, the Robert Arnott and Ralph Albrecht asserted that they were entitled to those claims, and that those claims met the statutory requirements of patentability. Upon information and belief, at least Robert Arnott and Ralph Albrecht knew before the issuance of the patents-in-suit that the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index Fund selected and weighted assets on a factor other than price.

122. At least Robert Arnott and Ralph Albrecht breached their duty of candor and good faith with intent to deceive the US PTO by failing to disclose the Dow Jones Select Dividend Index and the iShares Dow Jones Select Dividend Index

Fund. Additional facts about the intent of Robert Arnott and Ralph Albrecht to deceive the USPTO are believed to be in the exclusive control of Research Affiliates and its attorneys and cannot be reasonably known to Defendants without discovery.

123. But for Robert Arnott's and Ralph Albrecht's failure to disclose the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index to the USPTO, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent, claims 1 and 34-36 of the '719 Patent and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have been issued or allowed by Patent Office.

124. In sum, on information and belief, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed but for Robert Arnott's and Ralph Albrecht's foregoing material misrepresentations and omissions, and Robert Arnott and Ralph Albrecht made each of the foregoing misrepresentations and omissions with a specific intent to deceive the USPTO.

Robert Arnott's Failure to Disclose the work of David Morris using the FTSE for the GWA Wealth-Based Index to the USPTO

125. Robert Arnott engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding David Morris' work using FTSE for the GWA Wealth-based Indexes from the Examiner during prosecution. That inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

126. But for Robert Arnott's failure to disclose David Morris's work and the FTSE GWA Indexes to the USPTO, at least claim 1 of the '502 Patent, claim 1 of the '719 Patent, and claim 1 of the '740 Patent would not have issued or been allowed by Patent Office.

127. The FTSE All-Share Index was originally called the FT Actuaries All-Share Index at its inception in 1962. The Index was then enhanced with the addition of two new sub-indices, namely the FTSE 100 and FTSE 250 in January 1984 and October 1992 respectively. (FTSE All-Share Index Fact Sheet at 1).

128. David Morris of Global Wealth Allocation ("GWA") reached an agreement with the FTSE to launch an active index that reweights the underlying FTSE market capitalization index by company book value, cash flow and net profit. (D. Morris and T. Leake, *Where Next For The Index Business Model?*, JOURNAL OF INDEXES, May/June 2006 at 25).

129. On July 14, 2005 FTSE and GWA announced seven new "non-price" based indexes. The new indexes were weighted "not by market capitalisation, but by net income, cash flow, and book value." (July, 14, 2005 Press Release "New non-price indices from FTSE Group and GWA").

130. In his 2006 article, Mr. Arnott distinguished the earlier work of David Morris but acknowledged that Mr. Morris's work starting in 2003 reweighting the FTSE All-Share Index was "the **functional equivalent** of a **true Fundamental Index™** of all companies." (Arnott, *An Overwrought Orthodoxy*, INSTITUTIONAL INVESTOR, Dec. 2006 at 40, (emphasis added)).

131. "Fundamental Index™" referred to the fundamental indexes marketed by Robert Arnott and Research Affiliates. On information and belief, "Fundamental Index™" referred to the fundamental indexes Robert Arnott and Research Affiliates were seeking to patent. Therefore, upon belief and understanding, Robert Arnott's statement that the Morris FTSE GWA Index work was the "functional equivalent" meant that he understood that work to be highly relevant to the applications leading to the patents-in-suit.

132. Publications by David Morris regarding his work in 1998 and 2001 on an EAFE GWA Index were cited to the USPTO examiner during prosecution of the

patents-in-suit. However, no disclosure was made regarding David Morris's work using FTSE that Robert Arnott called the "functional equivalent" of his own.

133. Upon information and belief, the asserted claims of the patents-in-suit have a priority date no earlier than February 2004.

134. On information and belief, David Morris's work and the FTSE GWA Indexes, therefore are prior art to the Patents-in-Suit under, at least, 35 U.S.C. §§ 102(a) and 102(g).

135. David Morris's work and the FTSE GWA Indexes are but for material under 35 U.S.C. §§ 102 and 103 for at least claim 1 of the '502 Patent, claim 1 of the '719 Patent, and claim 1 of the '740 Patent. Moreover, the FTSE GWA Indexes in combination with other prior art renders the asserted claims of the Patents-in-Suit obvious. Had the USPTO Examiner known of David Morris's work and the FTSE GWA Indexes, these claims would not have issued.

136. Moreover, David Morris's work and the FTSE GWA Indexes are far more material to the Patents-in-Suit than the McIntyre Patent Application (U.S. Pat. App. No. 9/819,314) that was used by the patent examiner as the primary reference in evaluating Robert Arnott's patent applications. The McIntyre Patent Application discloses a conventional stock index **selected and weighted based on market capitalization**. The Arnott patents claim an index constructed **by specifically excluding** market capitalization and **instead using fundamental factors** . Thus, the prior art the patent examiner applied was barely relevant because its concept of using market capitalization was the opposite of Arnott's concept of avoiding using market capitalization. On the other hand, David Morris's work and the FTSE GWA Indexes discloses a stock index selected and weighted based on a book value, cash flow and net profit--fundamental factors—while excluding market capitalization. Plainly, the withheld David Morris work and the FTSE GWA Indexes are highly material and noncumulative.

137. Based on Robert Arnott's admission that Mr. Morris's work on the FTSE GWA Indexes was "the functional equivalent" to the indexes created by Research Affiliates, on information and belief, the FTSE GWA Indexes are but-for material references that are but for material under 35 U.S.C. §§ 102 and 103 for at least one claim from each of the Patents-in-Suit.

138. Furthermore, any differences between the asserted claims of the Patents-in-Suit and David Morris's work on the FTSE GWA Indexes are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made.

139. Because David Morris's work on the FTSE GWA Indexes discloses each of the limitations of claim 1 of the '502, '719 and '740 Patents, the FTSE GWA Indexes are therefore but-for material prior art.

140. Mr. Morris's work on the FTSE GWA Indexes was not cumulative of references cited during the prosecution of the applications leading to the patents-in-suit. The prosecution record of the patents-in-suit does not reflect disclosure by Mr. Arnott or consideration by the patent examiner of the Morris FTSE GWA Indexes. As the patent examiner allowed the Patents-in-Suit to issue, the examiner did not find any reference before him as material as the FTSE GWA Indexes, and therefore the FTSE GWA Indexes are not cumulative of any of the references considered by the patent examiner, including the examiner's primary reference (*i.e.*, the McIntyre Patent Application (U.S. Pat. App. No. 90/819,314)).

141. As reflected by the statement in the 2006 article referenced above, Mr. Arnott knew during the prosecution of the applications that led to the patents-in-suit that Mr. Morris's work on FTSE GWA Indexes was material prior art.

142. On November 7, 2004 the New York Times published an article entitled "Why your stock index fund is lagging the market" that attributed Robert Arnott as the "creator" of the idea to weight stock according to variables other than

market cap. (M. Hulbert, *Why Your Stock Index Fund Is Lagging The Market*, N.Y. TIMES, Nov. 7, 2004).

143. In response to that article, a colleague of Paul Wood, Richard Evans, notified the New York Times that Mr. Wood in fact was the "creator" of this approach, not Mr. Arnott. Responding to this allegation, Mr. Arnott stated:

> "[A]s I've already noted to Paul [Wood], **he has a *legal* obligation to note prior art (GSAM and Morris) in his patent applications**. This prior art, coupled with the fact that his 'patent' is so broad as to encompass investment strategies based on P/E or ROE, will almost certainly mean that no patent will be granted. We have already amended our far narrower patent application to acknowledge Paul's work (and the reasons that we think it's not applicable). He has a legal obligation to do the same with his applications, else the patent is likely to be voided on fraudulent misrepresentation grounds."

(Exh. A, Nov. 8, 2004 email from Arnott (emphasis added)).

144. Despite Mr. Arnott's knowledge of Mr. Morris's work and the FTSE GWA Indexes, and his clear understanding that material prior art must be disclosed to the USPTO, he failed to disclose Mr. Morris's work on FTSE GWA Indexes to the USPTO with the intent to deceive the USPTO.

145. As discussed above in paragraphs 115-118, Robert Arnott, owed the USPTO a duty of candor and good faith in connection with the applications that led to the Patents-in-Suit.

146. By prosecuting and ultimately obtaining allowance of claims directed to methods of selecting and weighting assets on factors other than price, the Applicants including Robert Arnott asserted that they were entitled to those claims, and that those claims met the statutory requirements of patentability. Upon information and belief, however, the Applicants, including Robert Arnott, knew

before the issuance of the Patents-in-Suit that David Morris's work and the FTSE GWA Indexes weighted assets on a factor other than price.

147. At least Mr. Arnott breached his duty of candor and good faith with intent to deceive the US PTO by failing to disclose Mr. Morris's work on the FTSE GWA Indexes which he had conceded was the "functional equivalent" to his own. Additional facts about the intent of Mr. Arnott to deceive the USPTO are believed to be in the exclusive control of Research Affiliates and its attorneys and cannot be reasonably known to Defendants without discovery.

148. But for Robert Arnott's failure to disclose David Morris's work and the FTSE GWA Indexes to the USPTO Examiner, at least claims 1 of the '502 Patent, '719 Patent and the '740 Patent would not have issued or been allowed by Patent Office.

149. In sum, on information and belief, at least 1 claim of each of the patents-in-suit would not have been issued or allowed but for Robert Arnott's foregoing material omissions, and Robert Arnott made each of the foregoing omissions with a specific intent to deceive the USPTO.

Robert Arnott's Failure to Disclose Robert C. Jones's Earning-Weighted Index and GSAM's Earnings-Weighted Index Fund to the USPTO

150. As a named inventor, Robert Arnott engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding the Earnings-Weighted Index developed by Robert C. Jones of Goldman Sachs Asset Management ("GSAM") and GSAM's Earnings-Weighted Index Fund from the examiner during prosecution. That inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

151. But for Robert Arnott's failure to disclose Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund , at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36

of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

152. On August 31, 1988, Robert C. Jones authored an article Portfolio Strategy: Stock Selection. (Goldman Sachs Portfolio Strategy, Aug. 31, 1988 (hereinafter "Jones-88")).

153. On August 6, 1990, Robert C. Jones was interviewed for an article in Pensions & Investments entitled "Earnings Basis for Weighting Stock Portfolios." (PENSIONS & INVESTMENTS, *Earnings basis for weighting stock portfolios*, Aug. 6, 1990 (hereinafter "Jones-90")).

154. In 1990, Mr. Jones also publicly disclosed a presentation entitled "Quantitative Equity: Earnings Weighted Index" (hereinafter "Jones-EWI").

155. Because Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was the subject of publications and was also commercially available in the United States in the 1990s, it is prior art to the Patents-in-Suit under at least 35 U.S.C. §§ 102(a) and (b). (Jones-90 (noting "the firm manages about $50 million for one pension fund client using the earnings-weighted index fund approach.").

156. Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are but for material under 35 U.S.C. §§ 102 and 103 for at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent. Moreover, Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund in combination with other prior art renders the asserted claims of the Patents-in-Suit obvious. Had the USPTO Examiner known of Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund, these claims would not have issued.

157. Moreover, the Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are far more material to the Patents-in-Suit

than the McIntyre Patent Application (U.S. Pat. App. No. 9/819,314) that was used by the patent examiner as the primary reference in evaluating Robert Arnott's patent applications. The McIntyre Patent Application discloses a conventional stock index **selected and weighted based on market capitalization**. The Arnott patents claim an index constructed **by specifically excluding** market capitalization and **instead using fundamental factors** . Thus, the prior art the patent examiner applied was barely relevant because its concept of using market capitalization was the opposite of Arnott's concept of avoiding using market capitalization. On the other hand, the Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses a stock index weighted based on earnings—a fundamental ratio—while excluding market capitalization. Plainly, the withheld Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are highly material and noncumulative.

158. For example, Claim 1 of the '502 Patent claims a method of creating an index by selecting constituents of the index based upon at least one accounting data other than price; weighting the constituents of the index based upon at least one accounting data other than price; and managing the index. ('502 Patent at 21:1-36).

159. Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose an "index of financial objects" constructed with a computer-implemented method meeting all the elements of claim 1 of the '502 Patent.

160. The method of claim 1of the '502 Patent creates, by at least one computer, the index of the financial objects. ('502 Patent at 21:5-6). Robert C. Jones disclosed such a method: "Goldman Sachs Asset Management, New York has developed a method for weighting stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings. The concept is the brainchild of Robert C. Jones, quantitative equity strategies manager at GSAM, who conceived of the weighting methodology while running some

backtests in 1987. The firm manages about $50 million for one pension fund client using the earnings-weighted index fund approach. For the six months the firm has run an actual portfolio, the strategy has returned 2.5% vs. 2.2% for a model using reported earnings and 3.1% for the Standard & Poor's 500 stock index." (Jones-90, p. 1).

161. On information and belief, Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was created and managed by using at least one computer or processor. In fact, Research Affiliates admitted during prosecution of App. No. 10/159,610 "that computers and processing systems were well known in the art in relation to construction and management of a financial index or investment instruments…" (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)). Thus, in the unlikely event Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was found not to be created with a computer, it would have been obvious to create the index "by at least one computer" as claimed.

162. In the method of claim 1 of the '502 Patent the index is created by "selecting, by at least one computer, financial objects as constituents of the index based upon at least one accounting data regarding entities issuing the financial objects rather than price of the financial objects." ('502 Patent at 21:7-10). Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose such a selection: "If you can identify the ones that are undervalued and overvalued, then perhaps a stock selection system on top of this weighting system would make sense." (Jones-90, p. 2).

163. In the method of claim 1 of the '502 Patent the selection criteria of constituent financial objects must include at least one of several accounting data, including "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects

or any dividends of the entities issuing the financial objects." ('502 Patent at 21:11-16). Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses such a selection: "The rationale for EWIs is contained in a 1980 article by Fischer Black entitled 'The Magic in Earnings' (available on request). In that study, Fischer demonstrates that earnings, rather than book value, is the best accounting estimate of a company's worth. We have recently updated this research to show that earnings is a better measure of value than any other readily-available accounting figure -- including cash flow, free cash flow, dividends, sales, assets, and EBITD. Earnings was also found to be a better, less volatile estimate of value than price itself." (Jones-EWI, p. 1).

164. In addition to "selecting," the index is created in the method of claim 1 of the '502 Patent by "weighting, by the at least one computer, the constituents of the index based upon at least one accounting data regarding the entities issuing the financial objects rather than price of the financial objects, to obtain constituent weightings of the constituents of the index." ('502 Patent at 21:17-22). Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose such a weighting: "any cap-weighting scheme like an index fund will, almost by definition, mathematically over-weight the overvalued stocks and underweight the undervalued stocks. If you assume prices eventually will tend toward fair value, that would make an [market-cap-weighted] index fund a suboptimal portfolio. Our idea is to weight using another measure that is a better representation of the economic importance of the company [than market cap]." (Jones-90, pp. 1-2).

165. Like the selecting criteria, in the method of claim 1 of the '502 Patent, the weighting criteria of constituent financial objects must include at least one of several accounting data, including "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial

objects." ('502 Patent at 21:22-26). Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses such weighting criteria. The Earnings-Weighted Index "weight[s] stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings." (Jones-90, p. 1).

166. The method of claim 1 of the '502 Patent also includes a managing step providing for "managing, by the at least one computer, the index, and managing at least one portfolio of financial objects based on the index." ('502 Patent at 21:28-30). It was well known that Robert C. Jones and GSAM managed the Earnings-Weighted Index: "Goldman Sachs Asset Management, New York has developed a method for weighting stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings. The concept is the brainchild of Robert C. Jones, quantitative equity strategies manager at GSAM, who conceived of the weighting methodology while running some backtests in 1987. The firm manages about $50 million for one pension fund client using the earnings-weighted index fund approach. For the six months the firm has run an actual portfolio, the strategy has returned 2.5% vs. 2.2% for a model using reported earnings and 3.1% for the Standard & Poor's 500 stock index." (Jones-90, p. 1).

167. The managing step of the method of claim 1 of the '502 Patent also includes "altering, by the at least one computer, the relative weightings of the financial objects within said at least one portfolio of financial objects based on the index as the at least one accounting data concerning the entities of the financial objects changes or the constituents of the index change over time" ('502 Patent at 21:31-36), which is also disclosed by the withheld prior art. For example, "How often is the portfolio rebalanced? We rebalance quarterly, pretty much in conjunction with the earnings cycle for companies on a calendar quarter." (Jones-90, p. 2). On information and belief, Robert C. Jones' Earnings-Weighted Index and

GSAM's Earnings-Weighted Index Fund was rebalanced or re-weighted by using at least one computer or processor.

168. Any differences between the asserted claims of the '502 Patent and Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses each of the limitations of claim 1 and claims 2-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55of the '502 Patent, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund were therefore but-for material prior art.

169. Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund also disclose "a method of constructing an index of assets" meeting all the elements of claim 1 of the '719 Patent.

170. The method of claim 1 of the '719 Patent constructs an index by first "**accessing** by the at least one analysis host processor of one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E)." ('719 Patent at 10:47-51). Second, the method of claim 1 of the '719 Patent constructs an index by "**receiving** by the at least one analysis host processor at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of said entities (E) associated with said corresponding assets (A)." ('719 Patent at 10:53-56). Third, the method of claim 1 of the '719 Patent constructs the index by "**retrieving** by the at least one analysis host processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A)." ('719 Patent at 10:57-59). On information and belief, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was created and/or

managed by accessing a database and receiving/retrieving data. Also, as Applicant has admitted that the use of computers for construction and management of indices or funds was well known in the art (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)), it necessarily follows that the "accessing," "receiving," "retrieving," and "storing" of related data/information steps recited in claim 1 are also firmly in the prior art because these are all required computing operations.

171. Construction of the index claimed in method claim 1 of the '719 Patent also includes a "selecting" step: "selecting by the at least one analysis host processor a selection from said plurality of said assets (A) and said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I)." ('719 Patent at 10:60-64). As discussed above for the '502 Patent, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose such a selection: "If you can identify the ones that are undervalued and overvalued, then perhaps a stock selection system on top of this weighting system would make sense." (Jones-90, p. 2). On information and belief, a selection of "financial objects as constituents of the index" is performed to generate the EWI because the creation of EWI started with S&P500 components but ended up with 499 constituents. (See Jones-EWI, p. 11).

172. The "selecting" step of the method claim 1of the '719 Patent further comprises:

> "selecting by the at least one analysis host processor said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective measure of scale (O) associated with each of said entities . . . wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A)

comprises at least one of: a demographic measure of a said entity (E) associated with said asset (A); a financial metric of a said entity (E) associated with said asset (A); a metric from information disclosures of a publicly traded entity; or a metric from information about a said entity (E) associated with said asset (A)"

('719 Patent at 10:65-11:20). As discussed above, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses such a selection: "The rationale for EWIs is contained in a 1980 article by Fischer Black entitled 'The Magic in Earnings' (available on request). In that study, Fischer demonstrates that earnings, rather than book value, is the best accounting estimate of a company's worth. We have recently updated this research to show that earnings is a better measure of value than any other readily-available accounting figure -- including cash flow, free cash flow, dividends, sales, assets, and EBITD. Earnings was also found to be a better, less volatile estimate of value than price itself." (Jones-EWI, p. 1). Thus, in selecting high earning companies for Earnings-Weighted Index, the various earnings data constitute "a financial metric of a said entity (E) associated with said asset (A)" and therefore "a measure of size (SZ)", as claimed.

173. Furthermore, the "selecting" step of method of claim 1comprises "ranking by the at least one analysis host processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E) and selecting by the at least one analysis host processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking." ('719 Patent at 11:21-29). As discussed above, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose such a ranking: "If you can identify the ones that are undervalued and overvalued,

then perhaps a stock selection system on top of this weighting system would make sense." (Jones-90, p. 2).

174. Finally, construction of the index claimed in the method claim 1 of the '719 Patent includes a "calculating" step:

> "calculating by the at least one analysis host processor proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculating comprises: (i) adding by the at least one analysis host processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and (ii) determining by the at least one analysis host processor a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I), wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of: a demographic measure of a said entity (E) associated with said constituent index asset (IA); a financial metric of a said entity (E) associated with said constituent index asset (IA); a metric from information disclosures of

a publicly traded entity; or a metric from information about a said entity (E) associated with said constituent index asset (IA)."

('719 Patent at 11:30-65). As discussed above, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses such a step. "Goldman Sachs Asset Management, New York has developed a method for weighting stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings. The concept is the brainchild of Robert C. Jones, quantitative equity strategies manager at GSAM, who conceived of the weighting methodology while running some backtests in 1987. The firm manages about $50 million for one pension fund client using the earnings-weighted index fund approach. For the six months the firm has run an actual portfolio, the strategy has returned 2.5% vs. 2.2% for a model using reported earnings and 3.1% for the Standard & Poor's 500 stock index." (Jones-90, p. 1).

175. Any differences between the asserted claims of the '719 Patent and Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because Robert C. Jones' Earnings-Weighted Index discloses each of the limitations of claims 1 and 34-36 of the '719 Patent, the Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund were therefore but-for material prior art.

176. The Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund also disclose "a computer-implemented method for constructing data indicative of a financial object index" meeting all the elements of claim 1 of the '740 Patent.

177. The method of claim 1of the '740 Patent "construct[s], by at least one computer processor, data indicative of the financial object index comprising selecting . . .data indicative of constituent financial objects of the financial object

index based upon at least one accounting data. . . said at least one accounting data regarding at least one entity relating to each of said financial objects, the at least one entity comprising at least one of a region, a country, a company, or a sovereign associated with said each of said financial objects." ('740 Patent at 78:6-16). Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses such a method. "Goldman Sachs Asset Management, New York has developed a method for weighting stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings. The concept is the brainchild of Robert C. Jones, quantitative equity strategies manager at GSAM, who conceived of the weighting methodology while running some backtests in 1987. The firm manages about $50 million for one pension fund client using the earnings-weighted index fund approach. For the six months the firm has run an actual portfolio, the strategy has returned 2.5% vs. 2.2% for a model using reported earnings and 3.1% for the Standard & Poor's 500 stock index." (Jones-90, p. 1).

178. In addition to "selecting," the index is constructed in the method of claim 1 of the '740 Patent by "weighting, by the at least one computer processor, data indicative of said constituent financial objects based upon at least one accounting data . . . said at least one accounting data regarding the at least one entity, to obtain data indicative of constituent weightings for each of said constituent financial objects." ('740 Patent at 17-23). As discussed above, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund disclose such a weighting: "any cap-weighting scheme like an index fund will, almost by definition, mathematically over-weight the overvalued stocks and underweight the undervalued stocks. If you assume prices eventually will tend toward fair value, that would make an [market-cap-weighted] index fund a suboptimal portfolio. Our idea is to weight using another measure that is a better representation of the economic importance of the company [than market cap]." (Jones-90, pp. 1-2).

179. The method of claim 1 of the '740 Patent also includes a storing step whereby "storing, by the at least one computer processor, said data indicative of said constituent financial objects and said constituent weightings on at least one computer storage device." ('740 Patent at 78:24-27). On information and belief, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was constructed and/or managed by using at least one computer or processor, including for the purposes of storing said data on a computer storage device. Applicants repeatedly admitted during prosecution of Application Number 10/159,610 "that computers and processing systems were well known in the art in relation to construction and management of a financial index or investment instruments…" (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008 (pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)). Thus, even if Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund were not found to be constructed with a computer, it would have been obvious to construct the index and store data "by at least one computer" as claimed.

180. Claim 1 of the '740 Patent also broadly recites that the "financial "objects" . . . include one or more of the following:

> "a bond; a fixed income debt instrument; a debt instrument; an emerging market debt instrument; a high yield debt instrument; a corporate debt instrument; an investment grade debt instrument; a debenture; a bank loan; a convertible bond; a senior debt; a subordinated debt; a term loan; a government debt instrument; a government bond; a corporate bond; a high yield bond; an emerging market bond; a municipal bond debt instrument; a treasury bond debt instrument; a treasury bill debt instrument; a mortgage based debt instrument; a securitized debt instrument; a security; **a stock**; a commodity; a futures contract; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); a derivative; a negative

weighting on any asset; an asset account; a separate account; a pooled trust; or a limited partnership."

('740 Patent at 78:32-79:1 (emphasis added)). It was well known that Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund were based on and comprised of stocks: "Goldman Sachs Asset Management, New York has developed a method for weighting stocks in an equity portfolio based on a company's adjusted earnings in relation to the total U.S. corporate earnings. (Jones-90, p. 1).

181. Lastly, the method of claim 1 of the '740 Patent requires that at least one accounting data comprise at least of "at least one financial metric of the at least one entity associated with each of said constituent financial objects; or at least one metric, level, rate, or expenditure amount from information disclosures of the at least one entity." ('740 Patent at 79:1-6). In selecting high earnings companies for the Earnings-Weighted Index, the various earnings data constitute "at least one financial metric of the at least one entity associated with each of said constituent financial objects," and such data are well known to be from "information disclosures" (e.g., SEC filings and press releases) of the companies.

182. Any differences between the asserted claims of the '740 Patent and Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses each of the limitations of claim 1 and claims 6, 8, 10, 23-25 and 73 of the '740 Patent, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund is therefore but-for material prior art.

183. Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund is not cumulative of references cited during the prosecution of the applications leading to the Patents-in-Suit. The prosecution record of the

Patents-in-Suit reflects no indication that the index and fund disclosed in Robert C. Jones' Earnings-Weighted Index was considered by the patent examiner. As detailed herein, Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund discloses are but for material under 35 U.S.C. §§ 102 and 103 of the asserted claims of the Patents-in-Suit. As the patent examiner allowed the Patents-in-Suit to issue, the examiner did not find any reference before him as material as the Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund, and therefore, the Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund are not cumulative of any references considered by the patent examiner , including the examiner's primary reference (*i.e.*, the McIntyre Patent Application (U.S. Pat. App. No. 90/819,314)).

184. As reflected by the statement in the 2006 article referenced above, Robert Arnott knew during the prosecution of the applications that led to the Patents-in-Suit that Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund was material prior art. Mr. Arnott's 2006 article states "a number of money managers have experimented with fundamentally weighted portfolios over the years. **Robert Jones at Goldman Sachs Asset Management was, so far as I know, the first to do so**, reweighting the S&P 500 on the basis of adjusted operating earnings. From 1990 to 1996 he managed money on this basis and beat the S&P 500 by 1.0 percentage point per year, but he never attracted serious assets." (R. Arnott, INSTITUTIONAL INVESTOR, *An Overwrought Orthodoxy* (Dec 2006) at 39 (emphasis added)).

185. On November 7, 2004 the New York Times published an article entitled "Why your stock index fund is lagging the market" that attributed Mr. Arnott as the "creator" of the idea to weight stock according to variables other than market cap. (M. Hubert, Why Your Stock Index Fund Is Lagging The Market, N.Y. Times, Nov. 7, 2004).

186. In response to that article, a colleague of Paul Wood, Richard Evans, notified the New York Times that Mr. Wood in fact was the "creator" of this approach, not Mr. Arnott. Responding to this allegation, Mr. Arnott stated:

> "[A]s I've already noted to Paul [Wood], **he has a *legal* obligation to note prior art (GSAM and Morris) in his patent applications**. This prior art, coupled with the fact that his 'patent' is so broad as to encompass investment strategies based on P/E or ROE, will almost certainly mean that no patent will be granted. We have already amended our far narrower patent application to acknowledge Paul's work (and the reasons that we think it's not applicable). He has a legal obligation to do the same with his applications, else the patent is likely to be voided on fraudulent misrepresentation grounds."

(Exh. A, Nov. 8, 2004 email from Arnott (emphasis added)).

187. Despite Mr. Arnott's knowledge of Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund, and his clear understanding that material prior art must be disclosed to the USPTO, he failed to disclose Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund to the USPTO with the intent to deceive the USPTO.

188. Robert Arnott owed the USPTO a duty of candor and good faith in connection with the applications that led to the Patents-in-Suit. (See Paragraphs 115-118 above).

189. By prosecuting and ultimately obtaining allowance of claims directed to methods of selecting and weighting assets on factors other than price, the Applicants including Robert Arnott asserted that they were entitled to those claims, and that those claims met the statutory requirements of patentability. Upon information and belief, however, the Applicants, including Robert Arnott, knew before the issuance of the Patents-in-Suit that Robert C. Jones and GSAM had

constructed an index based on a factor other than price (*i.e.*, the Earnings-Weighted Index and Fund).

190. At least Mr. Arnott breached his duty of candor and good faith with intent to deceive the US PTO by failing to disclose Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund. Additional facts about the intent of Robert Arnott to deceive the USPTO are believed to be in the exclusive control of Research Affiliates and its attorneys and cannot be reasonably known to Defendants without discovery.

191. But for Robert Arnott's failure to disclose Robert C. Jones' Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund to the USPTO, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Paten; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

192. In sum, on information and belief, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have been issued or allowed but for Robert Arnott's foregoing material misrepresentations and omissions, and Robert Arnott made each of the foregoing misrepresentations and omissions with a specific intent to deceive the USPTO.

Robert Arnott's and Janine Nesbit's Failure to Disclose the '448 Application of Bob Glickman to the USPTO

193. At least named inventor Robert Arnott and Research Affiliates' Managing Director and Chief Legal and Compliance Officer, Janine Nesbit, engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding Bob Glickman's U.S. Patent Application No. 10/659,694 from the examiner during prosecution. That

inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

194. The 10/659,694 Application was published in March 2004 as U.S. 2004/0049448 ("the '448 Glickman Application").

195. The '448 Glickman Application is entitled "Method of Defining an Exchange-Traded Fund and Computer Product for Generating Real-Time Fund Information."

196. The abstract of the '448 Glickman Application states:

> "A new exchange-traded fund is provided. The method includes searching for publicly traded securities and a history of dividend yields associated with them, as well as an associated PE ratio. The securities are then sorted according to the amount of the associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio. Several of the securities are then placed into the exchange-traded fund and shares in the exchange-traded fund are offered for sale."

197. The '448 Glickman Application discloses a dividend-based index and ETF:

> "Besides defining the novel security as an exchange traded fund, ETF, it may also be characterized as a novel financial 'index.' In commercial settings I refer to my novel system as DIVISTM-Dividend Yielding Stocks. . . . The primary and basic ETF, however, will be a common stock yielding dividend index. The financial dividend index includes all common stocks throwing off dividend yields . . . The new dividend yielding stock exchange traded funds track the new dividend yielding stock index. Stocks that throw off dividend yields are quickly added to the ETF, and stocks that

discontinue dividend yields can be quickly removed from the ETF. [0034], [0038].

198. As set forth in the specification, the '448 Glickman Application discloses an ETF and index constructed of assets that are (a) selected based on dividend yields and (b) weighted by dividend yields.

199. But for Robert Arnott's and Janine Nesbit failure to disclose the '448 Glickman Application, at least claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent; claims 1 and 34 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

200. On September 10, 2003, Bob Glickman filed the '448 Glickman Application which was assigned application serial no. 10/659,694. The '448 Glickman Application claims priority to provisional application no. 60/409,648, filed on September 10, 2002; provisional application no. 60/474,047, filed on May 29, 2003; and provisional application no. 60/474,837, filed on May 30, 2003.

201. Because the '448 Glickman Application was the subject of publication and was described in an application for patent by another filed in the United States, it is prior art to the Patents-in-Suit under at least 35 U.S.C. §§ 102(a) and (e).

202. Because the claims asserted in this suit have a priority date no earlier than August 5, 2005 and the '448 Glickman Application was published more than a year earlier on March 11, 2004, the '448 Glickman Application is § 102(b) statutory bar prior art against the Patents-in-Suit.

203. The '448 Glickman Application is but for material under 35 U.S.C. §§ 102 and 103 for at least claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent; claims 1 and 34 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent. Moreover, the '448 Glickman Application in combination with other prior art renders the asserted claims of the Patents-in-Suit obvious. Had the USPTO

Examiner known of the '448 Glickman Application, these claims would not have issued.

204. Moreover, the '448 Glickman Application is far more material to the Patents-in-Suit than the McIntyre Patent Application (U.S. Pat. App. No. 9/819,314) that was used by the patent examiner as the primary reference in evaluating Robert Arnott's patent applications. The McIntyre Patent Application discloses a conventional stock index **selected and weighted using market capitalization**. The Arnott patents claim an index constructed **by specifically excluding** market capitalization and **instead using fundamental factors** . Thus, the prior art the patent examiner applied was barely relevant because its concept of using market capitalization was the opposite of Arnott's concept of avoiding using market capitalization. On the other hand, the '448 Glickman Application discloses a stock index selected and weighted based on dividends yields—a fundamental ratio—while excluding market capitalization. Plainly, the withheld '448 Glickman Application is highly material and noncumulative.

205. The '448 Glickman Application discloses an "index of financial objects" constructed with a computer-implemented method meeting all the elements of claim 1 of the '502 Patent.

206. The method of claim 1of the '502 Patent creates, by at least one computer, the index of the financial objects. ('502 Patent at 21:5-6). Bob Glickman's '448 Glickman Application discloses such a method: "It is accordingly an object of the invention to provide a method of defining an exchange-traded fund and a computer and software product for generating real-time fund information." ('448 Glickman Application at ¶ [0008]). Furthermore, the '448 Glickman Application discloses: "Besides defining the novel security as an exchange traded fund, ETF, it may also be characterized as a novel financial 'index.'" ('448 Glickman Application at ¶ [0034]). "The primary and basic ETF, however, will be a common stock yielding dividend index. The financial dividend index includes all

common stocks throwing off dividend yields . . . The new dividend yielding stock exchange traded funds track the new dividend yielding stock index." ('448 Glickman Application at ¶ [0038])

207. The '448 Glickman Application further discloses that "Exchange-traded funds (ETFs) have recently become a popular trading vehicle for investors. These funds are similar to index mutual funds, *i.e.*, mutual funds that are tied to respective indices, but they more closely resemble stocks." ('448 Glickman Application at ¶ [0005]). In particular, the '448 Glickman Application discloses the creation of an index of financial objects based on dividend. ('448 Glickman Application at ¶¶ [0005, 0038, 0047, 0048, 0075, 0076]).

208. The ETFs and indexes of the '448 Glickman Application are created and managed by using at least one computer or processor. Glickman states that method "may be incorporated in a computer-readable medium having computer-executable instructions for performing the method. Similarly, there is advantageously provided a[nd] computer programmed to perform the novel method." ('448 Glickman Application at ¶ [0015]). Glickman describes a database, server system, and client system for creating his fundamental index and ETF. (*See, e.g.*, '448 Glickman Application at ¶ [0017]-[0020]). In paragraph [0094], Glickman states that the "primary" embodiment of his index and ETF is implemented using computers and software.

209. In claim 1 of the '502 Patent the index is created by "selecting, by at least one computer, financial objects as constituents of the index based upon at least one accounting data regarding entities issuing the financial objects rather than price of the financial objects." ('502 Patent at 21:7-10). Bob Glickman's '448 Application discloses such a selection: "The method includes searching for publicly traded securities and a history of dividend yields associated with them, as well as an associated PE ratio. The securities are then sorted according to the amount of the

associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio. Several of the securities are then placed into the exchange-traded fund and shares in the exchange-traded fund are offered for sale. ('448 Glickman Application at Abstract; see also ¶ [0032] ("the user is prompted for input where the user selects either a predefined set of dividend-yielding securities or a specific set of parameters for defining a new selection.")).

210. In the method of claim 1 of the '502 Patent the selection criteria of constituent financial objects must be based on at least one accounting data, such as "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or **any dividends of the entities** issuing the financial objects." ('502 Patent at 21:11-16, emphasis added). The '448 Glickman Application discloses such a selection: "The securities are then sorted according to the amount of the associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio." ('448 Glickman Application at Abstract).

211. In addition to "selecting," the index is created in the method of claim 1 of the '502 Patent by "weighting, by the at least one computer, the constituents of the index based upon at least one accounting data regarding the entities issuing the financial objects rather than price of the financial objects, to obtain constituent weightings of the constituents of the index." ('502 Patent at 21:17-22). The '448 Glickman Application discloses such a weighting: "placing a plurality of the securities into the exchange-traded fund and weighting the individual securities within the exchange-traded fund in accordance with the associated dividend yields." ('448 Glickman Application at ¶ [0012]; see also claims 1, 2, 5, 8 and 9).

212. Like the selecting criteria, in the method of claim 1 of the '502 Patent, the weighting criteria of constituent financial objects must include at least one of several accounting data, such as "cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities

issuing the financial objects **or any dividends of the entities issuing the financial objects**." ('502 Patent at 21:22-26). The '448 Glickman Application discloses such weighting criteria. The '448 Glickman Application discloses a dividend-weighted index created by "weighting the individual securities within the exchange-traded fund in accordance with the associated dividend yields." ('448 Glickman Application at ¶ [0012]; see also claims 1, 2, 5, 8 and 9).

213. The method of claim 1 of the '502 Patent also includes a managing step providing for "managing, by the at least one computer, the index, and managing at least one portfolio of financial objects based on the index." ('502 Patent at 21:28-30). The '448 Glickman Application manages the dividend-weighted index disclosed therein: "The new dividend yielding stock exchange traded funds track the new dividend yielding stock index. Stocks that throw off dividend yields are quickly added to the ETF, and stocks that discontinue dividend yields can be quickly removed from the ETF." ('448 Glickman Application at ¶ [0038]).

214. The managing step of the method of claim 1 of the '502 Patent also includes "altering, by the at least one computer, the relative weightings of the financial objects within said at least one portfolio of financial objects based on the index as the at least one accounting data concerning the entities of the financial objects changes or the constituents of the index change over time" ('502 Patent at 21:31-36), which is also disclosed by the withheld Glickman prior art. For example, Glickman states that "[s]tocks that throw off dividend yields are quickly added to the ETF, and stocks that discontinue dividend yields can be quickly removed from the ETF," ('448 Glickman Application at ¶ [0038]) and "[r]unning the search on subsequent days will add or delete securities that fit the criteria set in the search." ('448 Glickman Application at ¶ [0060]). Thus, the index disclosed in the'448 Glickman Application is rebalanced or re-weighted by using at least one computer or processor.

215. Any differences between the asserted claims of the '502 Patent and Bob Glickman's '448 Glickman Application are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because Bob Glickman's '448 Application discloses each of the limitations of claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent, it is therefore but-for material prior art.

216. The'448 Glickman Application also disclose "a method of constructing an index of assets" meeting all the elements of claim 1 of the '719 Patent.

217. The method of claim 1 of the '719 Patent constructs an index by first "**accessing** by the at least one analysis host processor of one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E)." ('719 Patent at 10:47-51). Second, the method of claim 1 of the '719 Patent constructs an index by "**receiving** by the at least one analysis host processor at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of said entities (E) associated with said corresponding assets (A)." ('719 Patent at 10:53-56). Third, the method of claim 1 of the '719 Patent constructs the index by "**retrieving** by the at least one analysis host processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A)." ('719 Patent at 10:57-59). The ETFs and indexes disclosed in the '448 Glickman Application are created and/or managed by accessing a database and receiving/retrieving data using client-server architecture. (Glickman '448 Application at ¶ [0045] ["If the answer following the query 101 is in the negative, the system is initialized to provide all available and applicable security exchanges or indices from a database."], at ¶ [0094]). Also, as RA admitted that the use of computers for construction and management of indices or funds was well known in the art (Response to Office Action in App. No. 10/159,610, submitted 6/9/2008

(pp.13-15), 5/4/2009 (pp. 13-14), and 2/8/2010 (pp. 18-19)), it necessarily follows that the "accessing," "receiving," "retrieving," and "storing" of related data/information steps recited in claim 1 are also firmly in the prior art because these are all required computing operations.

218. Construction of the index claimed in method claim 1 of the '719 Patent also includes a "selecting" step: "selecting by the at least one analysis host processor a selection from said plurality of said assets (A) and said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I)." ('719 Patent at 10:60-64). As discussed above for the '502 Patent, the '448 Glickman Application discloses such a selection: "The method includes searching for publicly traded securities and a history of dividend yields associated with them, as well as an associated PE ratio. The securities are then sorted according to the amount of the associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio. Several of the securities are then placed into the exchange-traded fund and shares in the exchange-traded fund are offered for sale." ('448 Glickman Application at Abstract; see also ¶ [0032] ("the user is prompted for input where the user selects either a predefined set of dividend-yielding securities or a specific set of parameters for defining a new selection.")).

219. The "selecting" step of the method claim 1of the '719 Patent further comprises:

> "selecting by the at least one analysis host processor said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective measure of scale (O) associated with each of said entities . . . wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A)

> comprises at least one of: a demographic measure of a said entity (E) associated with said asset (A); a financial metric of a said entity (E) associated with said asset (A); a metric from information disclosures of a publicly traded entity; or a metric from information about a said entity (E) associated with said asset (A)"

('719 Patent at 10:65-11:20). As discussed above, the '448 Glickman Application discloses such a selection: "The securities are then sorted according to the amount of the associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio." ('448 Glickman Application at Abstract). Thus, in selecting high yielding companies for the dividend-weighted index, the various dividend data constitute "a financial metric of a said entity (E) associated with said asset (A)" and therefore "a measure of size (SZ)", as claimed.

220. Furthermore, the "selecting" step of method of claim 1 comprises "ranking by the at least one analysis host processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E) and selecting by the at least one analysis host processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking." ('719 Patent at 11:21-29). The '448 Glickman Application discloses such a ranking: "The method includes searching for publicly traded securities and a history of dividend yields associated with them, as well as an associated PE ratio. The securities are then sorted according to the amount of the associated dividend yields, and rated based on the dividend yields and, preferably, based also on their PE ratio. Several of the securities are then placed into the exchange-traded fund and shares in the exchange-traded fund are offered for sale. ('448 Glickman Application at Abstract).

221. Finally, construction of the index claimed in the method claim 1 of the '719 Patent includes a "calculating" step:

"calculating by the at least one analysis host processor proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculating comprises: (i) adding by the at least one analysis host processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and (ii) determining by the at least one analysis host processor a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I), wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of: a demographic measure of a said entity (E) associated with said constituent index asset (IA); a financial metric of a said entity (E) associated with said constituent index asset (IA); a metric from information disclosures of a publicly traded entity; or a metric from information about a said entity (E) associated with said constituent index asset (IA)."

('719 Patent at 11:30-65). As discussed above, the '448 Glickman Application discloses such a step: "searching for securities matching the parameters associated

with the set of dividend-yielding securities, placing a plurality of the securities into the exchange-traded fund, weighting the individual securities within the exchange-traded fund in accordance with the associated dividend yields, and rating the securities based on an amount of the associated dividend yields." ('448 Glickman Application at ¶ [0025]).

222. Any differences between the asserted claims of the '719 Patent and Bob Glickman's '448 Glickman such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because the '448 Glickman Application discloses each of the limitations of claims 1 and 34 of the '719 Patent, it is therefore but-for material prior art.

223. The '448 Glickman Application also discloses "a computer-implemented method for constructing data indicative of a financial object index" meeting all the elements of claim 1 of the '740 Patent.

224. The method of claim 1of the '740 Patent "construct[s], by at least one computer processor, data indicative of the financial object index comprising selecting . . .data indicative of constituent financial objects of the financial object index based upon at least one accounting data. . . said at least one accounting data regarding at least one entity relating to each of said financial objects, the at least one entity comprising at least one of a region, a country, a company, or a sovereign associated with said each of said financial objects." ('740 Patent at 78:6-16). The '448 Glickman Application discloses such a method. "It is accordingly an object of the invention to provide a method of defining an exchange-traded fund and a computer and software product for generating real-time fund information." ('448 Glickman Application at ¶ [0008]). Furthermore, the '448 Glickman Application discloses: "Besides defining the novel security as an exchange traded fund, ETF, it may also be characterized as a novel financial 'index.'" ('448 Glickman Application at ¶ [0034]. "The primary and basic ETF, however, will be a common stock yielding dividend index. . . . The new dividend yielding stock exchange traded funds

track the new dividend yielding stock index. " ('448 Glickman Application at ¶ [0038]. See also ¶ [0094] ("It follows quite clearly from the foregoing description that the invention disclosed herein is primarily applicable to software processing, whether it be in a distributed system or a self-contained, autonomous system. The primary implementation thus has to do with machines and methods for performing data processing and calculation operations, as well as the processing of financial data.")).

225. In addition to "selecting," the index is constructed in the method of claim 1 of the '740 Patent by "weighting, by the at least one computer processor, data indicative of said constituent financial objects based upon at least one accounting data . . . said at least one accounting data regarding the at least one entity, to obtain data indicative of constituent weightings for each of said constituent financial objects." ('740 Patent at 17-23). As discussed above, the '448 Glickman Application discloses such a weighting: "placing a plurality of the securities into the exchange-traded fund and weighting the individual securities within the exchange-traded fund in accordance with the associated dividend yields." ('448 Glickman Application at ¶ [0012]; see also claims 1, 2, 5, 8 and 9).

226. The method of claim 1 of the '740 Patent also includes a storing step whereby "storing, by the at least one computer processor, said data indicative of said constituent financial objects and said constituent weightings on at least one computer storage device." ('740 Patent at 78:24-27). The'448 Glickman Application discloses that the index "may be incorporated in a computer-readable medium having computer-executable instructions for performing the method. Similarly, there is advantageously provided a[nd] computer programmed to perform the novel method." ('448 Glickman Application at ¶ [0015]). Glickman describes a database, server system, and client system for creating his fundamental index and ETF. (*See, e.g.*, '448 Glickman Application at ¶ [0017]-[0020]). The '448

Glickman Application further states that the "primary" embodiment of his index and ETF is implemented using computers and software. (Id. At ¶ [0094]).

227. Claim 1 of the '740 Patent also broadly recites that the "financial "objects" . . . could be anyone of:

> "a bond; a fixed income debt instrument; a debt instrument; an emerging market debt instrument; a high yield debt instrument; a corporate debt instrument; an investment grade debt instrument; a debenture; a bank loan; a convertible bond; a senior debt; a subordinated debt; a term loan; a government debt instrument; a government bond; a corporate bond; a high yield bond; an emerging market bond; a municipal bond debt instrument; a treasury bond debt instrument; a treasury bill debt instrument; a mortgage based debt instrument; a securitized debt instrument; a security; **a stock**; a commodity; a futures contract; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); a derivative; a negative weighting on any asset; an asset account; a separate account; a pooled trust; or a limited partnership."

('740 Patent at 78:32-79:1 (emphasis added)). The ETFs and indexes disclosed in the '448 Glickman Application are based on and comprised of stocks: "Stocks that throw off dividend yields are quickly added to the ETF, and stocks that discontinue dividend yields can be quickly removed from the ETF." ('448 Glickman Application at ¶ [0038]; see also ¶ [0046] "the system may be set to search only for common stock, or for a combination of common and preferred stock.")).

228. Lastly, the method of claim 1 of the '740 Patent requires that at least one accounting data comprise at least of "at least one financial metric of the at least one entity associated with each of said constituent financial objects; or at least one metric, level, rate, or expenditure amount from information disclosures of the at least one entity." ('740 Patent at 79:1-6). In selecting high dividend yielding

companies for the "dividend-weighted" index, the various earnings data constitute "at least one financial metric of the at least one entity associated with each of said constituent financial objects," and such data are well known to be from "information disclosures" (e.g., SEC filings and press releases) of the companies.

229. Any differences between the asserted claims of the '740 Patent and Bob Glickman's '448 Glickman Application are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. Because the'448 Glickman Application discloses each of the limitations of claim 1 and claims 6, 8, 10, 23-25 and 73 of the '740 Patent, the '448 Glickman Application is therefore but-for material prior art.

230. The '448 Glickman Application is not cumulative of references cited during the prosecution of the applications leading to the Patents-in-Suit. The prosecution record of the Patents-in-Suit reflects does not reflect that the index and ETF disclosed in the '448 Glickman Application were considered by the patent examiner. As detailed herein, the '448 Glickman Application is but for material under 35 U.S.C. §§ 102 and 103 for each of the asserted claims of the Patents-in-Suit. As the patent examiner allowed the Patents-in-Suit to issue, the examiner did not find any reference before him as material as the '448 Glickman Application, and therefore, the '448 Glickman Application is not cumulative of any reference considered by the patent examiner, including the examiner's primary reference (*i.e.*, the McIntyre Patent Application (U.S. Pat. App. No. 90/819,314)).

231. By at least July 27, 2006, corporate officers of Research Affiliates including at least Robert Arnott and General Counsel Janine Nesbit were aware of Bob Glickman's '448 Application.

232. On or about July 21, 2006, RA General Counsel Janine Nesbit made an unsolicited call to Mr. Glickman and indicated that Research Affiliates was potentially interested in purchasing Mr. Glickman's '448 Application.

233. Following the call, Ms. Nesbet sent Mr. Glickman an email stating that "working with Rob and the members of the Research Affiliates' team will give you the **recognition and compensation that you deserve for your innovative development**." (Exh. B, July 21, 2006 Email at GLICK0000017 (Emphasis added)).

234. Ms. Nesbet recognized that Bob Glickman's invention was material to Research Affiliates own patent applications: "Additionally I am sending you a link to the published patent application of Paul Woods, filed on June 3, 2002 which Research Affiliates owns. **You will note that the claims of the Wood patent application and your patent application overlap as far as creating a fund based on a dividend created index**." (Exh. B, July 21, 2006 Email at GLICK0000017 (Emphasis added)).

235. Ms. Nesbit did not send Bob Glickman a link to Robert Arnott's first patent application leading to the '719 Patent, which was not filed until 2004, well after the 2002 priority date of Bob Glickman's application.

236. Less than a week later, Janine Nesbet flew to Florida and personally met with Bob Glickman in an attempt to acquire the '448 Application for Research Affiliates.

237. The Chairman and CEO of Research Affiliates, Robert Arnott, was responsible for operations of the company in July 2006. Upon information and belief, Robert Arnott had prior knowledge that Janine Nesbit was meeting with Bob Glickman to attempt to acquire his patent application.

238. Upon information and belief, Janine Nesbit brought a copy of the '448 Glickman Application to at least one of the meetings with Bob Glickman. Janine Nesbit indicated to Bob Glickman that his IP was important and impressive.

239. Janine Nesbit met with Bob Glickman twice on July 27, 2006. After terms for a purchase were discussed at the first meeting, Janine Nesbit indicated she would have to consult with Robert Arnott. After consulting with Robert Arnott,

Janine Nesbit met with Bob Glickman a second time on July 27, 2006. The parties were unable to agree on terms for a sale.

240. Robert Arnott had exposure to the '448 Glickman Application again in January 2007. Bob Glickman sent an email to Robert Arnott on January 25, 2007, reminding him of his patent filing: "I invented intellectual property with a priority filing date of 9-10-02 covering dividends-P/E ratios." Robert Arnott then requested and received by email a copy of the '448 Glickman Application. (Exh. C, January 25, 2007 Email at GLICK0000056-57). Bob Glickman then sent a copy of his patent application to Robert Arnott, reminding him again of the priority date of the '448 Glickman Application: "The provisional patent priority date is 9-10-02." (Exh. C, January 25, 2007 Email at GLICK0000058).

241. Robert Arnott and Janine Nesbit had knowledge of the '448 Glickman Application and its materiality. Robert Arnott and Janine Nesbit knew that the '448 Glickman Application was prior art because it had a priority date of 2002 compared to Robert Arnott's first patent application on fundamental indexes which was not filed until 2004. Janine Nesbit and, upon information and belief also Robert Arnott, knew that the patent claims in the '448 Glickman Application and at least one of RA's patent applications were "overlapping."

242. Despite Mr. Arnott's and Ms. Nesbit's knowledge of Mr. Glickman's '448 Glickman Application including the initiative for RA to buy it, neither Mr. Arnott or Ms. Nesbit ever disclosed the '448 Glickman Application to the USPTO patent examiner during the prosecution of the applications leading to the Patents-in-Suit.

243. Despite Mr. Arnott's and Ms. Nesbit's knowledge that Mr. Glickman's '448 Application was material, Mr. Arnott and Ms. Nesbit intentionally withheld the '448 Glickman Application with intent to deceive the patent office. In fact, rather than disclosing the '448 Glickman Application to the USPTO they appropriated portions of the inventions disclosed and claimed in the '448 Glickman Application

for themselves. When RA met with Bob Glickman in July 2006, then-pending patent applications listing Robert Arnott as inventor did not disclose a fundamental index constructed using **dividend yield or PE ratio**. For example, the patent application filed on August 5, 2005 and assigned serial number 11/196,509 (leading to the '577 Patent) failed to mention using dividend yield or PE ratio to create an index. On the other hand, as discussed above, the invention described in the '448 Glickman Application was an index and ETF created using **dividend yield and PE ratio**.

244. Following the unsuccessful initiative to acquire the '448 Glickman Application on July 27, 2006, Research Affiliates filed a new patent application less than thirty days later on August 24, 2006. This new application, which named Robert Arnott as inventor, added new material including disclosing an invention for an index and associated fund constructed using **dividend yield and PE ratio**. This application was assigned serial number 11/509,002 (the '002 Application) and issued as the '502 Patent.

245. Upon information and belief, the inclusion of dividend yield and PE ratio in the application RA filed the next month after the meeting with Bob Glickman was not accidental or inadvertent, rather, it was intentional and done with the knowledge that a fundamental index built using dividend yield and PE ratio was already in the Glickman '448 Application.

246. Neither Ms. Nesbit or Mr. Arnott ever informed Bob Glickman that RA filed a new patent application after their meeting that added in the concept of using dividend yield and PE ratio found in the '448 Glickman Application. Neither Janine Nesbit or Robert Arnott informed the USPTO patent examiner about the aforementioned.

247. Ultimately, the PTO granted claims to RA covering the creation of an index using dividend yields. *See, e.g.,* '502 Patent, Claim 6 (index of financial objects based on accounting data in the form of "dividend yields of the entity"),

Claim 30 (index based on "dividend yieldsof the entity"), Claim 32 (index based on "dividend yield ratio"), Claim 50 (index based on a "dividend yield ratio").

248. As a result of Robert Arnott's and Janine Nesbit's failure to disclose it, the '448 Glickman Application was never considered by the patent examiner before issuing the Patents-in-Suit.

249. As a named inventor for each of the patents-in-suit, Mr. Arnott had a duty of disclosure to the USPTO. Mr. Arnott also attended at least one in-person interview with the patent examiner at USPTO headquarters in Arlington, VA.

250. Janine Nesbit, RA's Managing Director and Chief Legal and Compliance Officer, was substantively involved in the prosecution of the Patents-in-Suit. Ms Nesbit's was primarily responsible for "legal, administration, intellectual property and compliance for the company." (U.S. Pat. App. No. 10/961,404 at Declaration of Janine Nesbit Under 37 C.F.R. § 1.132 Regarding the Commercial Success of the Claimed Invention, ¶ 1 (hereinafter "Nesbit Declaration")).

251. Ms. Nesbit read and was familiar with the patent applications that led to the patents-in-suit, including the claims of those patent applications. (Nesbit Declaration at ¶ 7). Moreover, Ms. Nesbit, signed various power of attorney documents during the prosecution of the patents-in-suit on behalf of RA. Ms. Nesbit also attended at least one in-person interview with the patent examiner at USPTO headquarters in Arlington, VA.

252. Thus, named inventor Robert Arnott and Research Affiliates' Managing Director and Chief Legal and Compliance Officer, Janine Nesbit, owed the USPTO a duty of candor and good faith in connection with the applications that led to the patents-in-suit.

253. By prosecuting and ultimately obtaining allowance of claims directed to methods of selecting and weighting assets on factors other than market capitalization or price to create an index, Robert Arnott and Janine Nesbit asserted that they were entitled to those claims, and that those claims met the statutory

requirements of patentability. At least Robert Arnott and Janine Nesbit knew before the issuance of the patents-in-suit that the '448 Glickman Application selected and weighted assets based on an accounting factor other than market capitalization or price.

254. At least Robert Arnott and Janine Nesbit breached their duty of candor and good faith with intent to deceive the USPTO by failing to disclose the '448 Glickman Application to the patent examiner. Additional facts about the intent of Robert Arnott and Janine Nesbit to deceive the USPTO are believed to be in the exclusive control of Research Affiliates and its attorneys and cannot be reasonably known to Defendants without discovery.

255. But for Robert Arnott's and Janine Nesbit's failure to disclose the '448 Glickman Application to the USPTO, at least claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent; claims 1 and 34 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have been issued or allowed by Patent Office.

256. Furthermore, the act of intentionally appropriating concepts from the '448 Glickman Application into the '002 Application following the abortive business transaction is egregious conduct on the part of at least named inventor Robert Arnott. The act of doing so without informing the patent examiner is egregious as well as a but-for violation of the duty of disclosure. The patent examiner never would have granted claims in the '502 Patent for using dividend yield had he been told that they had been appropriated from the Glickman application.

257. In sum, on information and belief, at least claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent; claims 1 and 34 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed but for Robert Arnott's and Janine Nesbit's foregoing material misrepresentations and

omissions, and Robert Arnott and Janine Nesbit made each of the foregoing misrepresentations and omissions with a specific intent to deceive the USPTO.

The Patents-in-Suit are Unenforceable Due to Intentional False Statements and Egregious Misconduct Concerning False Claims of Joint Inventorship

258. At least Robert Arnott, founder of Research Affiliates LLC ("RA") and its patent attorney, Ralph Albrecht, engaged in affirmative, egregious misconduct and inequitable conduct during the prosecution of the applications for the '502 Patent, the '740 Patent and U.S. Patent No. 7,620,577 (the "'577 patent") that renders at least the '502 Patent and the '740 Patent and each of their claims unenforceable. In particular, during the prosecution of the '502, '740 and '577 patents Robert Arnott and Ralph Albrecht knowingly and intentionally falsely represented in the application for the '577 patent that Robert Arnott and Paul Wood were joint inventors of the subject matter disclosed and claimed therein. That misrepresentation was perpetuated when the applications for the '502 and '740 patents asserted priority to the '577 patent.

259. On or about June 3, 2002, U.S. Pat. Application No. 10/159,610 (the "'610 Application") was filed in the USPTO by Paul Wood. It was entitled "Fundamental Stock Market Index and Index Fund or Funds".

260. Paul Wood was the only named inventor on the '610 Application.

261. At the time he filed the '610 Application in 2002, Paul Wood was unaware of any work by Robert Arnott on subject matter disclosed in the '610 Application.

262. At the time Paul Wood filed the '610 Application in 2002, Robert Arnott was unaware that Paul Wood had filed that patent application.

263. At the time Paul Wood filed the '610 Application in 2002, Robert Arnott was unaware of any work by Paul Wood on subject matter disclosed in the '610 Application.

264. On or about May 24, 2002, Paul Wood executed a sworn declaration that was filed with the USPTO during the prosecution of the '610 Application stating that he was the "original and first inventor of the subject matter" of that which was claimed in the '610 Application.

265. Robert Arnott did not invent any of the subject matter disclosed in the '610 Application.

266. Robert Arnott and Paul Wood did not collaborate on the invention of any of the subject matter disclosed in the '610 Application.

267. Robert Arnott and Paul Wood were not joint inventors with respect to any of the subject matter disclosed in the '610 Application.

268. On information and belief, as of June 3, 2002, the time the '610 Application was filed, Robert Arnott and Paul Wood had never spoken to each other or collaborated in any way with each other.

269. Paul Wood was the first to file a patent application in the United States directed to "fundamental indexes."

270. Paul Wood's '610 Application described using fundamental factors to not only weight the stocks in a fundamental index, but he also described using fundamental factors to **select** the stocks in the first place. (See 610 App., June 3, 2002 at para [009]).

271. On or about October 12, 2004, U.S. Pat. Application No. 10/961,404 (the "'404 Application") was filed in the USPTO. It was entitled "Valuation Indifferent Non-Capitalization Weighted Index."

272. Robert Arnott was named as the sole inventor of the subject matter of the '404 Application.

273. Ralph Albrecht, a patent attorney, was substantively involved in the prosecution of the '404 Application on behalf of Research Affiliates and Robert Arnott.

274. On or about March 5, 2005, Robert Arnott executed a declaration that was filed with the USPTO during the prosecution of the '404 Application stating that he was the "original and sole inventor … of the subject matter" claimed in the '404 Application. In that declaration, Robert Arnott acknowledged his duty of candor and good faith to the USPTO.

275. Robert Arnott and Paul Wood did not collaborate on the invention of any subject matter disclosed in the '404 Application.

276. Robert Arnott and Paul Wood were not joint inventors or co-inventors of any of the subject matter claimed in the '404 Application.

277. On information and belief, as of the time the '404 Application was filed Robert Arnott and Paul Wood had never spoken to each other.

278. Robert Arnott's '404 Application described using fundamental factors to weight the stocks in a fundamental index, but failed to describe selecting the stocks using fundamental factors.

279. On or about January 18, 2005, Paul Wood assigned his '610 Application to Research Affiliates.

280. At the time of the assignment of Paul Wood's patent application to Research Affiliates, Robert Arnott was aware of the assignment of the '610 Application.

281. At the time of the assignment of Paul Wood's patent application to Research Affiliates, Robert Arnott was aware that he was not an inventor of the subject matter disclosed and/or claimed in the '610 Application.

282. At the time of the assignment of Paul Wood's patent application to Research Affiliates, Robert Arnott was aware that he did not collaborate with Paul Wood on any of the subject matter disclosed and/or claimed in the '610 Application.

283. On or about January 18, 2005, Ralph Albrecht became aware of the subject matter disclosed and claimed in the '610 Application. At that time, he knew that the subject matter disclosed and claimed in the '610 Application was not

invented by Robert Arnott, and that Robert Arnott had not collaborated with Paul Wood on any of the subject matter disclosed and/or claimed in the '610 Application.

284. Following the assignment of the '610 Application, Ralph Albrecht was substantively involved in the prosecution of the '610 Application on behalf of Research Affiliates. Ralph Albrecht had a duty of candor and good faith to the USPTO with respect to representations made during the prosecution of the '610 Application.

285. On or about January 15, 2005, the USPTO gave Ralph Albrecht access to inspect the '610 Application papers.

286. The '610 Application had become abandoned during prosecution because of the failure to respond to a Notice to File-Corrected Application Papers that were mailed by the USPTO on or about July 10, 2002. The USPTO mailed a Notice of Abandonment of the '610 Application on or about January 16, 2004

287. Research Affiliates purchased Paul Wood's '610 Application in January 2005 with the knowledge that it was abandoned. Messrs. Arnott and Albrecht knew the '610 Application was abandoned at that time.

288. Robert Arnott and Ralph Albrecht allowed the '610 Application to remain abandoned for nearly four months after it was purchased.

289. On or about May 15, 2005, Ralph Albrecht filed a Petition For Revival of an Application for Patent Abandoned Unintentionally Under 35 CFR 1.137(b) ("Petition for Revival") on behalf of Research Affiliates. In the Petition for Revival, Ralph Albrecht represented that the entire delay, including the period from January 16, 2004 until May 15, 2005, was unintentional. On information and belief, this statement was false at least with respect to the period from January 15, 2005 until May 15, 2005.

290. On or about August 4, 2005, Ralph Albrecht filed U.S. Pat. Application No. 11/196,509 (the "'509 Application"). The '509 Application named Robert

Arnott and Paul Wood as joint inventors of the subject matter disclosed and claimed therein.

291. Prior to the filing of the '509 Application, Robert Arnott and a colleague of Paul Wood both candidly recognized that Robert Arnott and Paul Wood did not collaborate with respect to indexing methodology.

292. On November 7, 2004, a colleague of Paul Wood's sent an email to a New York Times reporter requesting correction of an article that appeared to credit Robert Arnott with creating the fundamental index concept:

> "Neither Mr. Arnott nor his firm are the creators of using fundamentals to create indexes. The creator of fundamentally based indexing is Paul Wood, who holds a U.S. patent pending on this methodology in various forms, including its application to a variety of asset classes and a range of fundamental criteria."

(Nov. 7, 2004, email from Richard Evans to Mark Hulbert)

293. In response, Mr. Arnott questioned the viability of Paul Wood's patent application:

> "Also, as I've already noted to Paul, he has a *legal* obligation to note prior art . . . in his patent applications. This prior art, coupled with the fact that his 'patent' is so broad as to encompass investment strategies based on P/E or ROE, will almost certainly mean that no patent will be granted."

(Exh. A, Nov. 8, 2004, email from Robert Arnott to Paul Wood and Richard Evans, copying reporter Mark Hulbert.)

294. Notwithstanding those events, on or about September 30, 2005, Robert Arnott and Paul Wood signed a declaration swearing that they were the original and first inventors of the subject matter claimed in the '509 Application. The declaration further represented to the USPTO that all statements contained therein were true.

295. On information and belief, Robert Arnott and Ralph Albrecht understood that the sworn declaration submitted to the USPTO was a representation that the '509 Application disclosed and claimed subject matter that was jointly invented by Robert Arnott and Paul Wood.

296. Ralph Albrecht was substantively involved in the prosecution of the '509 Application.

297. Robert Arnott and Ralph Albrecht each owed a duty of candor and good faith to the USPTO in connection with the prosecution of the '509 Application.

298. No subject matter disclosed and claimed in the '509 Application was jointly invented by Robert Arnott and Paul Wood.

299. The '509 Application was a combination of the '610 Application, which was solely developed by Paul Wood, and the '404 Application, solely developed by Robert Arnott. On information and belief, Robert Arnott and Ralph Albrecht knew that no inventive subject matter was disclosed in the '509 Application that was not previously disclosed in either the '610 Application as being invented solely by Paul Wood or the '404 Application as being invented solely by Robert Arnott.

300. The false claim of joint inventorship is egregious because the specification of the '509 Application is merely the combination of the '610 Application and the '404 Application. Thus, the '509 Application discloses inventions that Robert Arnott and Ralph Albrecht had represented to the USPTO were made at different times by different individual inventors without any collaboration between Messrs. Wood and Arnott. Under these circumstances, there can be no joint invention.

301. On information and belief, prior to the filing of the '509 Application there were no communications, discussions or collaboration supporting joint conception between Wood and Arnott regarding the subject matter disclosed in that application.

302. The ’509 Application issued as U.S. Pat. No. 7,620,577 (the “’577 Patent.”). The front page of the ’577 Patent listed Robert Arnott and Paul Wood as joint inventors.

303. The representation to the USPTO by Robert Arnott and Ralph Albrecht that the ’509 Application was jointly invented was a materially false representation. The combining of the 2002 patent application by Paul Wood with a 2004 patent application by Robert Arnott and submitting it as a new jointly-invented application is egregious misconduct.

304. The ’577 Patent claims priority to the ‘610 Application.

305. The ’577 Patent application could not have asserted priority to the ’610 Application of Wood if it had been filed with Robert Arnott as the sole inventor. Filing the ’577 Patent with Robert Arnott and Paul Wood listed as joint inventors enabled the priority assertion to be made.

306. Upon information and belief, Robert Arnott and Ralph Albrecht were concerned that the ’610 Application to Paul Wood filed in 2002 would be disqualifying prior art against Robert Arnott’s patent applications, which were not filed until 2004 and later.

307. On information and belief, the false claim of joint inventorship and the priority claim were made to divert the patent examiner attention from the fact that the ‘610 Application was prior art to all claims in these application.

308. On information and belief, Robert Arnott and Ralph Albrecht knew that the ‘610 Application was prior art to the ’509 Application. By claiming joint inventorship, filing a continuation-in-part application, and relying on the ’610 Application for priority they were able to avoid having the ’610 Application applied as a prior art reference by the USPTO.

309. On information and belief, Robert Arnott and Ralph Albrecht were also concerned that Mr. Arnott’s ’404 Application filed in 2004 failed to disclose

selecting by fundamental factors, rather, it only disclosed weighting by fundamental factors.

310. On information and belief, Messrs. Arnott and Albrecht understood that by claiming joint inventorship, filing a continuation-in-part application, and relying on the Wood '610 Application for priority, Mr. Arnott could pursue patent applications claiming indexes where the constituent stocks were selected based on fundamental factors.

311. The element of selecting based on fundamental factors was critical because that element had to be added to each of the asserted claims in the patents-in-suit before the examiner would allow those claims.

312. Upon information and belief, Robert Arnott has publicly characterized his realization that selecting as well as weighting must be based on fundamental factors as a critical "second 'aha'" moment in his conception of his alleged invention. (R. Arnott, INSTITUTIONAL INVESTOR, *An Overwrought Orthodoxy* (Dec 2006) at 40

313. While the '610 Application was disclosed to the examiner, it was not substantively considered or applied as prior art against the '509 Application which eventually led to the '577 patent. For the same reasons, the '610 Application was not substantively considered or applied as prior art against the applications that led to the '502 patent and the '740 patent.

314. The '610 Application is prior art under 35 U.S.C. § 102(e) against the applications leading to the '577, '502, and '740 patents because it was filed before those applications and was later published. The '610 Application is material to the applications leading to the '577, '502, and '740 patents because it discloses a "fundamental index" made up of constituent assets that are selected based on fundamental factors and that are weighted based on fundamental factors. For example, in his 2002 filing, Paul Wood described his invention as follows:

> "A method for the construction of a new type of stock market index, and stock market index fund, or funds where the index is constructed based upon the fundamental realities of the companies contained within the index **rather than on the price, or market capitalization of the companies contained with the index**. This fundamental data may include items such as the **relative size** of a collection of company's profits or assets or **any fundamental accounting data contained within a standard U.S. GAAP company annual report and accounts."**

(Abstract, U.S. Pub. 2006/0149645 (emphasis added)).

315. Each of the '577, '502, and '740 patents claims indexes built using fundamental factors such as size and various accounting data rather than price or -market capitalization. Because the '610 Application discloses what the aforementioned patents claim, it is highly material. It is clearly more material than the primary reference applied by the examiner, U.S. Pub. 2002/0184126, which taught an index built using market capitalization and price.

316. Upon information and belief, the '577, '502, and '740 patents would not have issued had Robert Arnott and Robert Albrecht not falsely claimed joint inventorship to enable the priority claim to the '610 Application.

317. Additionally, but-for the false assertion of joint inventorship to the '610 Application that was acknowledged by the patent examiner, each of the '577, '502, and '740 Patents would have been entitled to assert a priority date no earlier than August 4, 2005, the filing date of the '509 Application. This is because the '509 Application is the first application bearing Robert Arnott's name as inventor that discloses selecting assets by fundamental factors.

318. Upon information and belief, Robert Arnott distributed a draft of his "Redefining Indexation" article to colleagues in June 2004. Neither Mr. Arnott nor Mr. Albrecht ever disclosed the June 2004 article to the patent examiner.

319. The June 2004 draft article by Robert Arnott would have been disqualifying § 102(b) prior art against the '577, '502, and '740 patents but-for the fact that Messrs. Arnott and Albrecht never disclosed it to the patent examiner coupled with their false assertion of joint inventorship discussed above.

320. As detailed above, Robert Arnott and Ralph Albrecht knowingly and intentionally misrepresented the inventorship of the '577 patent application that led to as the '577 patent, '502 patent, and the '740 patent. By virtue of their knowing and intentional misrepresentation regarding inventorship, the '502 patent, the '740 patent and the '577 patent are unenforceable due to inequitable conduct. Furthermore, infectious unenforceable results from the details alleged above regarding Robert Albrecht and Robert Arnott's false claims of joint inventorship that resulted in false claims of priority in the PTO.

FOURTH AFFIRMATIVE DEFENSE: NO INJUNCTIVE RELIEF

321. Plaintiff is not entitled to injunctive relief because any injury to RA is not immediate or irreparable, and/or RA has an adequate remedy at law.

FIFTH AFFIRMATIVE DEFENSE: PROSECUTION HISTORY ESTOPPEL & DISCLAIMER

322. The Patents-in-Suit are unenforceable in whole or in part and/or are limited in scope because of the doctrines of prosecution history estoppel and/or prosecution disclaimer and/or specification disclaimer.

SIXTH AFFIRMATIVE DEFENSE: LACHES, WAIVER, & ESTOPPEL

323. The Patents-in-Suit are unenforceable in whole or in part because of laches, waiver and/or estoppel.

SEVENTH AFFIRMATIVE DEFENSE:LIMITS ON DAMAGES UNDER 35 U.S.C. § 287

324. Plaintiff's claims for relief and alleged damages are limited by 35 U.S.C. § 287.

EIGHTH AFFIRMATIVE DEFENSE: UNCLEAN HANDS, PATENT MISUSE & UNFAIR COMPETITION

325. Plaintiff's claims are barred in whole or part by reason of its unclean hands, patent misuse, and/or unfair competition, such as by Plaintiff abusing and/or attempting to abuse, the exclusive rights purportedly enjoyed as a result of the issuance of the Patents-in-Suit with anticompetitive effect.

COUNTERCLAIMS

326. For their counterclaims against Counterclaim Defendant Research Affiliates, LLC ("RA"), Counterclaim Plaintiffs WisdomTree Investments, Inc., WisdomTree Asset Management, Inc., WisdomTree Retirement Services, Inc., Mellon Capital Management Corp., and ALPS Distributors, Inc. (collectively "Counterclaim Plaintiffs ") aver as set forth below.

THE PARTIES

327. Counterclaim Plaintiff WisdomTree Investments, Inc. ("WT Investments") is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017.

328. Counterclaim Plaintiff WisdomTree Trust ("WT Trust") is a trust organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017.

329. Counterclaim Plaintiff WisdomTree Asset Management, Inc. ("WT Asset Management") is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017. WT Asset Management is a wholly-owned subsidiary of WT Investments.

330. Counterclaim Plaintiff WisdomTree Retirement Services, Inc. ("WT Retirement Services") is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 380 Madison Avenue, 21st Floor,

New York, New York 10017. WT Retirement Services is a wholly-owned subsidiary of WT Investments.

331. Counterclaim Plaintiff Mellon Capital Management Corp. ("MCM") is a corporation organized and existing under the laws of the State of Delaware, with a place of business at 50 Fremont Street, Suite 3900, San Francisco, California 94105.

332. Counterclaim Plaintiff ALPS Distributors Inc. ("ALPS") is a corporation organized and existing under the laws of the State of Colorado, with a place of business at 1290 Broadway, Suite 1100, Denver, Colorado 80203. ALPS is a distributor or broker-dealer.

333. On information and belief, Counterclaim-Defendant Research Affiliates LLC ("RA") is a limited liability company organized under the laws of the State of California and has a principal place of business at 620 Newport Center Dr., Suite 900, Newport Beach, California.

NATURE OF THE COUNTERCLAIMS

334. The counterclaims seek a declaration of non-infringement and invalidity of U.S. Patent Nos. 7,747,502; 7,792,719; and 8,005,740 ("the Patents-in-Suit").

335. RA alleges in its Complaint that it is the owner of all right, title, and interest to the Patents-in-Suit and has the right to bring an action and recover damages for infringement of the Patents-in-Suit. RA further alleges that each of the Counterclaim Plaintiffs infringes some or all of the Patents-in-Suit.

336. Defendants deny that they have ever directly or indirectly infringed, or infringed in any manner, any valid and enforceable claim of the Patents-in-Suit.

JURISDICTION AND VENUE

337. These counterclaims arise under the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, and the Patent Laws of the United States, 35 U.S.C. §§ 1 et seq.

338. This Court has subject matter jurisdiction over these counterclaims based upon 28 U.S.C. §§ 1331, 1338(a), 2201 and 2202.

339. This Court has personal jurisdiction over Counterclaim-Defendant RA at least for the reason that it consented to jurisdiction by initiating this action.

340. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391 and 1400(b).

BACKGROUND FACTS ON COUNTERCLAIM PLAINTIFFS' DECLARATORY JUDGMENT COUNTERCLAIMS

341. Exchange traded funds (ETFs) are funds that are traded on major exchanges as shares much in the same way that shares of an individual stock can be traded. Typically, ETFs are built by selecting a portfolio of a particular set of assets (such as stocks) and then weighting them in some fashion. Certain ETFs also attempt to track an index representing a selected set of assets.

342. For many years, various stock indexes have been developed to factor in the share price or market capitalization of the selected assets so that those indexes are sensitive to price changes in the market. For example, the Dow Jones Industrial 30 index weights its assets based on price. The S&P 500 index weights its assets based on market capitalization of the companies associated with each equity asset. Other indexes have equally weighted their components, without respect to price.

343. Over the years, some academics and investors have found price or market-cap based funds to be unsatisfactory because they believe these funds to be overly influenced by market valuation, too volatile, and susceptible to providing sub-optimal returns.

344. These and other criticisms of price or market-cap based funds arise from some very old ideas—value investing and the related notion of investing based on a company's fundamentals instead of blindly following market valuation. Warren Buffet has long preached value investing. Popular financial books like "Beating the Dow" (HarperCollins 1991) by Michael B. O'Higgins published in the

early 1990's taught investors to select stocks based on fundamental factors like dividend yields.

345. In the early 1990s, Robert Jones of Goldman Sachs identified a problem with market-cap indexes and so recommended the use of "economic investing" such as the use of earnings as a fundamental factor to create funds. Mr. Jones went on to construct a stock index that was weighted on the basis of adjusted operating earnings and he managed funds on this basis from 1990 to 1996.

346. In 2003, Paul Wood and Richard Evans published "Fundamental Profit-based Equity Indexation" (Journal of Indexes 2003), which advocated using "fundamental accounting items" for indexes "instead of market capitalization." The Wood and Evans article described an index called the "SandsEnd Profit based US 100 Index" that was constructed by selecting the 100 U.S. companies with the largest profits, and then applying a weighting factor based on profitability to calculate the index.

347. The article by Wood and Evans also disclosed in 2003 that "Counsel Trust (a Pennsylvania based Trust Company) is in the process of creating a U.S. 100 profit based index fund with Paul Wood acting as subadvisor."

348. Also in 2003, Dow Jones introduced the Dow Jones U.S. Select Dividend Index, which selected stocks based on dividend data and which weighted stocks based on dividend per share instead of market capitalization. In November 2003, Barclay's Global Investors launched an ETF based on the Dow Jones U.S. Select Dividend Index.

349. The work of Mr. Jones, the 2003 publication by Wood and Evans, the launching of the Counsel Trust profit based index fund, and the launching of the Dow Jones U.S. Select Dividend Index and the related ETF based on that index, each referenced above, predated the filing of any patent application by Mr. Robert Arnott, who is the sole named inventor of the '719 Patent and one of the two named inventors of the '502 and '740 Patents.

350. On February 4, 2004, Robert Arnott filed, listing himself as the sole inventor, a provisional U.S. patent application, Serial No. 60/541,733, which stated in part: "A new method of passive investing that is based on indexes which are built with metrics other than market capitalization weighting or equal weighting is provided." On October 12, 2004, Robert Arnott filed, again listing himself as the sole inventor, U.S. patent application No. 10/961,404, in which he claimed to have invented "a new method, system and computer program product for passive investing that is based on indexes which are built with metrics other than market capitalization weighting, share price weighting or equal weighting." Counterclaim Defendant RA, in the subsequent prosecution of the three Patents-in-Suit, claimed the benefit of these two patent applications by Robert Arnott for purposes of determining the priority of the claims that RA is now asserting are infringed by Counterclaim Plaintiffs.

351. The idea of creating an index by selecting a portfolio based on a fundamental factor such as profit and then weighting the assets of the portfolio based on a fundamental factor was not conceived of first by Robert Arnott.

352. In early November 2004, The New York Times published an article entitled "Why Your Stock Index Fund is Lagging the Market", suggesting that a new indexing method based on fundamentals like total revenue had been devised by "three analysts at Research Affiliates," including Robert Arnott. Shortly thereafter, however, The New York Times published a correction as follows: "The Strategies column on Nov. 7, about the weighting of stocks in index funds according to fundamental categories of accounting, rather than market capitalization, referred incompletely to the origins of the approach. In addition to three analysts at Research Affiliates …, others have explored similar methods, including Robert C. Jones, a managing director at Goldman Sachs Asset Management; Paul Wood, a fund manager based in London; and Counsel Trust, a fund sponsor in York, Pa."

353. On information and belief, prior to the publication of The New York Times articles in November 2004, neither Robert Arnott nor Counterclaim Defendant RA was aware of the work of Paul Wood on indexing based on fundamental factors or of the 2003 publication by Wood and Evans.

354. Based on the above and other prior art references, the inventions claimed in the three Patents-in-Suit are anticipated or invalid as obvious, and should be declared invalid by this Court.

355. The accused WT Indexes and the WT ETF funds referenced in Plaintiff's Complaint also do not infringe the claims of the Patents-in-Suit. During the prosecution of the Patents-in-Suit, and consistent with statements in the specifications of the Patents-in Suit and in the various patent applications related to the Patents-in-Suit, Counterclaim Defendant RA proposed and obtained amended claim language clarifying that the claims of the Patents-in-Suit do not cover indexes based on an asset selection or weighting that relies upon stock or asset price or market capitalization. Claim 1 of the '719 patent, for example, states that both selecting and weighting the assets to be used for creation of the index must be based upon factors that are "substantially independent of the market prices (P) of any of said assets (A) and … substantially independent of a market capitalization (MC) of any of said entities (E)."

356. Completely separate from any efforts by Robert Arnott or Counterclaim Defendant RA to develop their index and investment methodology, WT Investments developed its own different investment methodology. In the past, WT Investments' principal businesses were financial media and index development, with roots in the construction of stock indexes that stretch back to the 1990's. In 2000, for example, WT Investments, then called Individual Investor Group, Inc., licensed to Nuveen Investments its America's Fastest Growing Companies Index to serve as the underlying index for an ETF that Nuveen was planning to launch. Between 2001 and 2004, WT Investments developed new fundamentals based indexes and index

methodologies that incorporated accounting data into the construction of its indexes. In June of 2006, WT Investments supported the launch by WT Trust of twenty ETFs that tracked dividend-weighted indexes developed by WT Investments without using the methodology claimed in the Patents-in-Suit.

357. For example, the factors used by the WisdomTree ETFs to select the assets that are to be included in an index include market capitalization and the price of the assets, and thus the index and associated ETFs fall outside the scope of the claims of the three Patents-in-Suit. The WisdomTree Large Cap Dividend Index ("WTLDI"), for instance, selects for inclusion the largest 300 dividend paying companies in the United States based on market capitalization.

358. In short, not only are the alleged inventions of the Patents-in-Suit not valid or enforceable inventions because, among other things, they were anticipated or rendered obvious by prior publications and activities of investment professionals before the invention or priority date of the claims in the Patents-in-Suit, but also the ETFs that Counterclaim Defendant RA accuses of infringement in this case do not even practice the methods that are recited in the Patents-in-Suit.

COUNT I: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '502 PATENT

359. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

360. Counterclaim Plaintiffs do not infringe the '502 patent because, among other things, they do not make, use, import, sell, or offer to sell, and have not made, used, imported, sold, or offered for sale, in the United States any product or service which infringes any valid and enforceable claim of the '502 Patent either directly or indirectly, contributorily or otherwise, and have not induced any others to infringe any valid and enforceable claim of the '502 Patent.

361. Counterclaim Plaintiffs are entitled to a declaratory judgment that their products, services, and activities do not infringe any valid or enforceable claim of the '502 Patent.

COUNT II: DECLARATORY JUDGMENT OF INVALIDITY OF THE '502 PATENT

362. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

363. The '502 Patent is invalid because it fails to satisfy one or more of the requirements specified in Title 35, United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, 112, 119, and/or 120.

364. Counterclaim Plaintiffs are entitled to a declaratory judgment that the '502 Patent is invalid.

COUNT III: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '719 PATENT

365. WT Investments, WT Trust and WT Asset Management repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

366. WT Investments, WT Trust and WT Asset Management do not infringe the '719 patent because, among other things, they do not make, use, import, sell, or offer to sell, and have not made, used, imported, sold, or offered for sale, in the United States any product or service which infringes any valid and enforceable claim of the '719 Patent either directly or indirectly, contributorily or otherwise, and have not induced any others to infringe any valid and enforceable claim of the '719 Patent.

367. WT Investments, WT Trust and WT Asset Management are entitled to a declaratory judgment that their products, services, and activities do not infringe any valid or enforceable claim of the '719 Patent.

COUNT IV: DECLARATORY JUDGMENT OF

INVALIDITY OF THE '719 PATENT

368. WT Investments, WT Trust and WT Asset Management repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

369. The '719 Patent is invalid because it fails to satisfy one or more of the requirements specified in Title 35, United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, 112, 119, and/or 120.

370. WT Investments, WT Trust and WT Asset Management are entitled to a declaratory judgment that the '719 Patent is invalid.

COUNT V: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '740 PATENT

371. WT Investments, WT Trust and WT Asset Management repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

372. WT Investments, WT Trust and WT Asset Management do not make, use, import, sell, or offer to sell, and have not made, used, imported, sold, or offered for sale, in the United States any product or service which infringes any valid and enforceable claim of the '740 Patent either directly or indirectly, contributorily or otherwise, and have not induced any others to infringe any valid and enforceable claim of the '740 Patent.

373. WT Investments, WT Trust and WT Asset Management are entitled to a declaratory judgment that their products, services, and activities do not infringe any valid or enforceable claim of the '740 Patent.

COUNT VI: DECLARATORY JUDGMENT OF INVALIDITY OF THE '740 PATENT

374. WT Investments, WT Trust and WT Asset Management repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims above as if fully set forth herein.

375. The '740 Patent is invalid because it fails to satisfy one or more of the requirements specified in Title 35, United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, 112, 119, and/or 120.

376. WT Investments, WT Trust and WT Asset Management are entitled to a declaratory judgment that the '740 Patent is invalid.

COUNT VII: DECLARATORY JUDGMENT OF UNENFORCEABILITITY OF THE PATENTS-IN-SUIT

377. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 326-358 above in these Counterclaims as if fully set forth herein.

378. The '502, '719 and '740 Patents (collectively, the "Patents-in-Suit") are unenforceable due to inequitable conduct. Applicants, including Robert Arnott, prosecution counsel Ralph Albrecht and Managing Director and Chief Legal and Compliance Officer Janine Nesbit, engaged in inequitable conduct during prosecution of the applications for the Patents-in-Suit in the USPTO. That inequitable conduct renders the Patents-in-Suit and each of its claims unenforceable.

The Patents-in-Suit are Unenforceable Due to Inequitable Conduct Based on the Failure to Disclose Material Prior Art to the USPTO

379. At least named inventor Robert Arnott, Research Affiliates' prosecuting attorney Ralph Albrecht and Managing Director and Chief Legal and Compliance Officer Janine Nesbit engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 Patents (collectively, the "Patents-in-Suit") in the USPTO by intentionally failing to disclose at least:

a. the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index,

b. the work of David Morris using the FTSE Group ("FTSE") for the GWA Wealth-based Indexes,

c. Robert C. Jones work on the Goldman Sachs Earnings-Weighted Index, and

d. Bob Glickman's '448 Glickman Application

to the USPTO patent examiner during prosecution of the Patents-in-Suit. That inequitable conduct renders the Patents-in-Suit and each of their claims unenforceable.

Robert Arnott's and Ralph Albrecht's Failure to Disclose the iShares Dow Jones Select Dividend Index Fund and its Underlying Dow Jones U.S. Select Dividend Index to the USPTO

380. At least named inventor Robert Arnott and Research Affiliates' prosecuting attorney, Ralph Albrecht, engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 Patents in the USPTO by withholding the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index from the examiner during prosecution of the Patents-in-Suit. That inequitable conduct renders the Patents-in-Suit and each of their claims unenforceable.

381. But for Robert Arnott's and Ralph Albrecht's failure to disclose the iShares Dow Jones Select Dividend Index Fund and its underlying Dow Jones Select Dividend Index to the USPTO, at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

382. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 67-124 above in these Affirmative Defenses as if fully set forth herein.

Robert Arnott's Failure to Disclose the work of David Morris using the FTSE for the GWA Wealth-Based Index to the USPTO

383. Robert Arnott engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding David Morris' work using FTSE for the GWA Wealth-based Indexes from the

Examiner during prosecution. That inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

384. But for Robert Arnott's failure to disclose David Morris's work and the FTSE GWA Indexes to the USPTO, at least claim 1 of the '502 Patent, claim 1 of the '719 Patent, and claim 1 of the '740 Patent would not have issued or been allowed by Patent Office.

385. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 125-149 above in these Affirmative Defenses as if fully set forth herein.

Robert Arnott's Failure to Disclose Robert C. Jones's Earning-Weighted Index and GSAM's Earnings-Weighted Index Fund to the USPTO

386. As a named inventor, Robert Arnott engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding the Earnings-Weighted Index developed by Robert C. Jones of Goldman Sachs Asset Management ("GSAM") and GSAM's Earnings-Weighted Index Fund from the examiner during prosecution. That inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

387. But for Robert Arnott's failure to disclose Robert C. Jones's Earnings-Weighted Index and GSAM's Earnings-Weighted Index Fund , at least claims 1-4, 15, 18-20, 23, 31, 33-34, 38-41, 49 and 52-55 of the '502 Patent; claims 1 and 34-36 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

388. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 150-192 above in these Affirmative Defenses as if fully set forth herein.

Robert Arnott's and Janine Nesbit's Failure to Disclose the '448 Glickman Application to the USPTO

389. At least named inventor Robert Arnott and Research Affiliates' Managing Director and Chief Legal and Compliance Officer, Janine Nesbit,

engaged in inequitable conduct during the prosecution of the applications for the '502, '719 and '740 patents (collectively, the "patents-in-suit") in the United States Patent and Trademark Office ("USPTO") by withholding Bob Glickman's U.S. Patent Application No. 10/659,694 ("the '448 Glickman Application") from the examiner during prosecution. That inequitable conduct renders the patents-in-suit and each of their claims unenforceable.

390. But for Robert Arnott's and Janine Nesbit failure to disclose the '448 Glickman Application, at least claims 1-4, 15, 23, 31, 38, 40, 49 and 53 of the '502 Patent; claims 1 and 34 of the '719 Patent; and claims 1, 6, 8, 10, 23-25 and 73 of the '740 Patent would not have issued or been allowed by the USPTO.

391. Furthermore, the act of intentionally appropriating concepts from the '448 Glickman Application into the '002 Application following the abortive business transaction is egregious conduct on the part of at least named inventor Robert Arnott. The act of doing so without informing the patent examiner is egregious as well as a but-for violation of the duty of disclosure. The patent examiner never would have granted claims in the '502 Patent for using dividend yield had he been told that they had been appropriated from the Glickman application.

392. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 193-257 above in these Affirmative Defenses as if fully set forth herein.

The Patents-in-Suit are Unenforceable Due to Intentional False Statements and Egregious Misconduct Concerning False Claims of Joint Inventorship

393. At least Robert Arnott, founder of Research Affiliates LLC ("RA") and its patent attorney, Ralph Albrecht, engaged in affirmative, egregious misconduct and inequitable conduct during the prosecution of the applications for the '502 Patent, the '740 Patent and U.S. Patent No. 7,620,577 (the "'577 patent") that renders at least the '502 Patent and the '740 Patent and each of their claims unenforceable. In particular, during the prosecution of the '502, '740 and '577

patents Robert Arnott and Ralph Albrecht knowingly and intentionally falsely represented in the application for the '577 patent that Robert Arnott and Paul Wood were joint inventors of the subject matter disclosed and claimed therein. That misrepresentation was perpetuated when the applications for the '502 and '740 patents asserted priority to the '577 patent.

394. Counterclaim Plaintiffs repeat each and every allegation in Paragraphs 258-320 above in these Affirmative Defenses as if fully set forth herein.

RESERVATION OF RIGHTS

395. Counterclaim Plaintiffs reserve the right to add additional defenses and/or counterclaims that discovery may reveal.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure Rule 38, Defendants demand a trial by jury of all issues raised by this Amended Complaint which are triable by jury.

PRAYER FOR RELIEF

WHEREFORE, Counterclaim Plaintiffs deny that Plaintiff/Counterclaim-Defendant is entitled to any of the relief prayed for in its Complaint and pray that the Court:

1) Dismiss Plaintiff's Complaint with prejudice;
2) Deny all relief requested by Plaintiff;
3) Enter judgment in favor of Defendants and against Plaintiff on all counts in Plaintiff's Complaint;
4) Enter judgment in favor of Counterclaim Plaintiffs and against Counterclaim Defendant on all counterclaims;
5) Declare that Counterclaim Plaintiffs do not and have not infringed, directly or indirectly, any of the Patents-in-Suit;
6) Declare that each of the Patents-in-Suit is invalid;
7) Declare that each of the Patents-in-Suit is unenforceable.

8) Award Defendants/Counterclaim Plaintiffs their attorneys' fees and costs;

9) Permanently enjoin Plaintiff, its successors, assigns, and anyone acting in concert therewith or on its behalf, from attempting to enforce the Patents-in-Suit against Defendants or any parents, affiliates, subsidiaries thereof, or Defendants respective officers, agents, employees, successors, assigns, or customers;

10) Declare this case exceptional under 35 U.S.C. § 285 if warranted; and

11) Grant such other further relief as the Court may deem just and proper.

Dated: August 15, 2012

Respectfully submitted,

By: /s/ Peter J. Wied
Peter J. Wied
pwied@goodwinprocter.com
GOODWIN PROCTER LLP

Attorneys for Defendants
WISDOM TREE INVESTMENTS, INC., WISDOM TREE TRUST, WISDOM TREE ASSET MANAGMENET, INC., WISDOM TREE RETIREMENT SERVICES, INC., MELLON CAPITAL MANAGMENT CORP., AND ALPS DISTRIBUTORS, INC.

EXHIBIT A

To: index.info@verizon.net[index.info@verizon.net]; pcwood@att.net[pcwood@att.net]
Cc: Hulbert, Mark[mhulbert@marketwatch.com]; Phil Moore[moore@rallc.com]; Janine Nesbit[nesbit@rallc.com]; Jason Hsu[hsu@rallc.com]
From: Rob Arnott
Sent: Mon 11/8/2004 8:41:41 PM
Subject: RE: Error in your 11/7 article

Mark Hulbert was kind enough to forward this email for my reaction.

Richard and Paul, I respectfully request that you forward this reply to "CFA" and "ecrooks" whom you have put on your distribution list; I do not know who these individuals are, but they have a right to see my reply.

In point of fact, your observations are incorrect on several counts. There are two examples of "prior art," which predate Paul's work. Goldman Sachs Asset Management ran an S&P 500, reweighted to profits, from 1992-1997. David Morris, also in the UK, ran an S&P 500, reweighted to a blend of profits and book values, from 1996-2003. Neither product has any assets today, while yours has a scant $8m. I was unaware of their work -- or Paul's -- until a handful of weeks ago, when our draft article was first circulated.

None of these products selects assets by any metric other than piggybacking on the S&P 500; *all* of them merely reweight an existing index. The same holds true for Paul's, which goes a step further (less far?)by using just 100 out of the S&P 500. *None* of these initiatives sought a theoretically robust framework for understanding the reason that cap-weighted indexes, like the S&P 500, as we did (and vetted with Markowitz, Treynor, Bernstein, and others).

Also, as I've already noted to Paul, he has a *legal* obligation to note prior art (GSAM and Morris) in his patent applications. This prior art, coupled with the fact that his "patent" is so broad as to encompass investment strategies based on P/E or ROE, will almost certainly mean that no patent will be granted. We have already amended our far narrower patent application to acknowledge Paul's work (and the reasons that we think it's not applicable). He has a legal obligation to do the same with his applications, else the patent is likely to be voided on fraudulent misrepresentation grounds.

I am offended at the contentious nature of this communication, most particularly by the fact that I was not copied on it. Paul and I first met less than two weeks ago. Before you brought him to my attention, I had never heard of him or of his work. I initiated a dialogue with him on ways that we might work together to further our mutual interests. Frankly, I would have expected you to be pleased by Mark's article, helping us to popularize this idea (though the Counsel Trust product has a truly massive all-in expense ratio, far beyond 100 bp, which will probably limit your growth, as I'm sure you know). If this is the way that such discussions will proceed, then there's no point in further discussions.

Paul, I see no need to further our discussions on possible cooperation on Wednesday after all. Do you?

----Original Message-----
From: Richard Evans
Sent: Monday, November 08, 2004 10:32 AM
To: strategy@nytimes.com
Cc: pcwood@att.net; CFA; ecrooks
Subject: Error in your 11/7 article

Mark:
Thanks for your 11/7 column in the Times. Good as it was, it contained a

serious error:

The article states, "As the approach's creator, Mr. Arnott's firm..." I can see why you said tht, but, in fact, it's wrong. Neither Mr. Arnott nor his firm are the creators of using fundamentals to create indexes.

THE CREATOR OF FUNDAMENTALLY BASED INDEXING IS PAUL WOOD, who holds a U. S. patent pending on this methodology in various forms, including its application to a variety of asset classes and a range of fundamental criteria. Also, Mr. Wood is the author of an article on his methodology that appeared in Journal of Indexes. Copies of both the patent application and the article are available.

Mr. Wood's methodology is the basis for an index called the Counsel Trust Profit-Based 100, which consists, in broad terms, of the 100 largest U.S. companies ranked by size of profit. The index is represented by three Counsel Trust mutual funds available to individual investors in taxable, IRA, and 401(k) forms.

The distributor of these funds is Counsel Trust (ECA Investment Group) at 235 St. Charles Way, Suite 100, York, PA 17402. The funds' manager is GNI Capital, Inc., at 708 Third Avenue, New York, NY 10017.

Mr. Wood is currently a fund manager in London. I represent his interests in the U. S.

QUESTION: We would like to see the error corrected with at least as much prominence as it has in your 11/7 column. In our opinion, the most appropriate form of correction would be a new article on Mr. Wood's methodology and the Counsel Trust funds. Can you help us with that? If not what do you think we should do? Please let me know. Thanks.

Dick Evans
index.info@verizon.net
914-478-5962
42 Darwin Avenue
Hastings-on-Hudson, NY 10706

EXHIBIT B

From: Janine Nesbit [mailto:nesbit@rallc.com]
Sent: Friday, July 21, 2006 4:39 PM
To: bobglick@bellsouth.net
Subject: today's call

Dear Bob –

It was an absolute delight speaking with you today. I am excited about the prospect of working with you on y
yield ETF concept.

Attached is Rob Arnott's article on the Fundamental Index™ that was published in the Financial Analysts Jc
which Rob serves as editor. I have also attached a recent article written by Dr. Jason Hsu, Research Affilia
Research and Carmen Campollo of FTSE further explaining the Fundamental Index™ concept along with a
referencing the work of Research Affiliates in this area. I hope you take the time to Google Rob Arnott and I
Index™.

Additionally I am sending you a link to the published patent application of Paul Woods, filed on June 3, 200
Research Affiliates owns. You will note that the claims of the Wood patent application and your patent appli
as far as creating a fund based on a dividend created index.

As I mentioned during our phone call today, Research Affiliates has agreements with PIMCO, FTSE (the w
index provider), Nomura (Japan's largest money manager), CalPERS (the largest US public pension fund),
Foundation, one of the Swedish government's pension funds among others on our Fundamental Index con
patent application fits well with the work we are doing in this innovative area.

I will be speaking with Rob about how we can best work together and will get back to you soon to schedule

Again, I am very happy to have met you. I am confident that your working with Rob and the members of the
Affiliates' team will give you the recognition and compensation that you deserve for your innovative develop

Please feel free to call or e-mail me with any questions.

With Warmest Regards,

Janine

Please note our new address below:

Janine A. Nesbit
Principal, Director of Administration
Chief Legal & Compliance Officer
Research Affiliates, LLC
155 North Lake Avenue, Suite 900
Pasadena, CA 91101

Phone: 626-584-2165
Fax: 626-584-4865
Cell: 626-584-4765

WE HAVE MOVED
Our new address is:

155 North Lake Avenue, Suite 900, Pasadena, CA 91101
Phone numbers and e-mail addresses will remain the same.

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The trade names Fundamental Index, Fundamental Indexing, RAFI, RAFI-Global, Fundamental Global, Fundamental K, Fundamental Q, Fundamental REIT, Fundamental 100, Fundamental 200, Fundamental 250, Fundamental 1000, Fundamental 2000, Fundamental 3000, Global Fundamental, Research Affiliates, Mainstreet Index, Mainstreet Indexing, Synthetic Strips, Virtual Mutual Fund, the RAFI logo and the Research Affiliates corporate name and logo are the exclusive intellectual property of Research Affiliates, LLC. Any use of these trade names and logos without the prior written permission of Research Affiliates, LLC is expressly prohibited. Research Affiliates, LLC reserves the right to take any and all necessary action to preserve all of its rights, title and interest in and to these terms and logos.

Fundamental Index, the non-capitalization method for creating and weighting of an index of securities, is the patent-pending proprietary intellectual property of Research Affiliates, LLC (Patent Pending. Publ. Nos. US-2005-0171884-A1, US-2006-0015433-A1 and WO 2005/076812).

EXHIBIT C

07/02/2012 15:57 9544564923 BOBGLICK PAGE 02/05
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EXHIBIT C -98- GLICK0000056

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From: "Rob Arnott" <arnott@ralic.com> Add to Address Book
Date: 2007/01/25 Thu PM 08:32:53 EST
To: <bobglick@bellsouth.net>
Subject: RE: PATENT PENDING

Sorry, didn't see your 1/18/07 email. Spam filter may have caught it in error. Can you email me a copy of the published patent filing? I want to see if it overlaps with our work. If it does, then there may be an opportunity here. If not, then we're spread too thin to take on another new initiative.

-----Original Message-----
From: bobglick@bellsouth.net [mailto:bobglick@bellsouth.net]
Sent: Thursday, January 25, 2007 12:07 PM
To: Rob Arnott
Subject: PATENT PENDING

DEAR MR. ARNOTT --- I RESPECT YOUR BUSINESS ACCUMEN & SEASONED EXPERINCE
IN THE HIGHLY SOPHISTICATED FINANCIAL ARENA!!!! I INVENTED INTELLECTUAL PROPERTY
WITH A PRIORTY FILING DATE OF 9-10-02 COVERING DIVIDENDS— P\E RATIOS & OPTIONS
I WOULD LIKE THE PRIVILEGE OF TALKING TO YOU ABOUT ---
YOU HELPING ME
MARKET THE ABOVE!!!! I BELIEVE WORKING IN A CREATIVE TEAM SPIRIT COULD DRAMATICALLY
BENEFIT THE BOTH OF US!!!!
LETS TAKE PRIDE IN BEING TEAM PLAYERS & LOOK FORWARD TO MAKING FINANCIAL
HISTORY TOGETHER!!!! LETS HAVE THE VISION TO LOOK AT THE MUCH BIGGER PICTURE

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& NOT BECOME CRIPPLED BY A LEGAL DOCUMENT THAT MAY NOT HAVE VALIDITY!!!!!
RESPECTFULLY YOURS --- BOB GLICKMAN
P.S. VANESSA YOUR ASST. ADVISED ME TO E-MAIL YOU TODAY BECAUSE SHE SAID YOU DID NOT RECOGNIZE MY NAME FROM THE LAST MESSAGE I LEFT YOU 1-18-07
PLEASE CALL ME AT 954-456-4922

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The trade names Fundamental Index, RAFI, RAFI-Global, Fundamental Global, Fundamental K, Fundamental Q, Fundamental REIT, Fundamental 100, Fundamental 200, Fundamental 250, Fundamental 1000, Fundamental 2000, Fundamental 3000, Global Fundamental, Research Affiliates, Mainstreet Index, Mainstreet Indexing, Synthetic Strips, Virtual Mutual Fund, the RAFI logo and the Research Affiliates corporate name and logo are the exclusive intellectual property of Research Affiliates, LLC. Any use of these trade names and logos without the prior written permission of Research Affiliates, LLC is expressly prohibited. Research Affiliates, LLC reserves the right to take any and all necessary action to preserve all of its rights, title and interest in and to these terms and logos.

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BOBGLICK
07/02/2012 16:57 9544564923

EXHIBIT C -100-
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From: <bobglick@bellsouth.net> Add to Address Book
Date: 2007/01/25 Thu PM 11:39:21 EST
To: <ARNOTT@RALLC.COM>
Subject: PATENT PENDING ETF & OPTIONS

Close

DEAR MR.. ARNOTT -- THIS IS THE MATERIAL YOU REQUESTED!!!! THE PROVISIONAL PATENT
PRIORITY DATE IS 9-10-02
I LOOK FORWARD TO WORKING TOGETHER WITH YOU
PLEASE CALL ME AT 954-456-4922 BOB GLICKMAN

[Helo] [Hom] [Book] [Mem] [Num] [PTDL] [CURR_LIST] [Shopping Cart] [Order Copy] [Imap]

(1 of 1)

United States Patent Application **20040049448**
Kind Code **A1**
Glickman, Bob **March 11, 2004**

07/02/2012 15:57 9544564923 BOBGLICK PAGE 05/05
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EXHIBIT C -101- GLICK0000059

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From: "Janine Nesbit" <nesbit@ralic.com> Add to Address Book
Date: 2007/01/26 Fri AM 08:52:20 EST
To: <bobglick@bellsouth.net>
Subject: FW: PATENT PENDING ETF & OPTIONS

Hi Bob -

I hope all is well with you. My apologies for not returning your call. I have been in Washington DC this week.

Rob Arnott forwarded your e-mails to me. While we think your patent application is interesting, we have a full plate already and are not interested in working with you on your patent application.

I wish you the best of success in all of your endeavors.

Thanks,

Janine

-----Original Message-----
From: bobglick@bellsouth.net [mailto:bobglick@bellsouth.net]
Sent: Thursday, January 25, 2007 8:38 PM
To: Rob Arnott
Subject: PATENT PENDING ETF & OPTIONS

DEAR MR.. ARNOTT --- THIS IS THE MATERIAL YOU REQUESTED!!!! THE PROVISIONAL PATENT
PRIORITY DATE IS 9-10-02
I LOOK FORWARD TO WORKING TOGETHER WITH YOU
PLEASE CALL ME AT 954-456-4922 BOB GLICKMAN

PROOF OF SERVICE

I, the undersigned, certify and declare that I am over the age of 18 years, employed in the County of Los Angeles, State of California, and not a party to the above-entitled cause. On August 15, 2012, I electronically filed the following document(s) using the CM/ECF system.

SECOND AMNEDED ANSWER, AFFIRMATIVE DEFENSES AND COUNTERCLAIMS

I certify that all participants in the case are registered CM/ECF users and will be served by the CM/ECF system.

I declare under penalty of perjury that I am employed in the office of a member of the bar of this Court at whose direction this service was made and that the foregoing is true and correct.

Executed on August 15, 2012, at Los Angeles, California.

Britani Selzler	
(Type or print name)	(Signature)